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**TEST REPORT**

**LEADER – WAI KEE (C&T) JOINT VENTURE**

**REMAINING ENGINEERING  
INFRASTRUCTURE WORKS FOR  
PAK SHEK KOK DEVELOPMENT  
PACKAGE 2A**

**(CONTRACT NO.: TP 37/03)**

**MONTHLY EM&A REPORT**

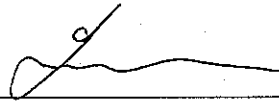
**(SEPTEMBER 2006)**

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## **EXECUTIVE SUMMARY**

This monthly EM&A report (No.17) has been prepared to document the impact monitoring works conducted for the Contract of the Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No: TP 37/03) during the reporting period from 01 to 30 September 2006.

### **Construction Progress**

The major construction works in this reporting month were as below:

- Drainage works (Excavation, pipe laying and breaking) at Section 1 & 2;
- Falsework for MLS bridge deck;
- Construction of wall at Voided Abutment, RE Wall and pile cap at North Abutment, and Retaining wall No.1;
- Construction of MLS Subway pump ramp and barrel;
- Back filling for Toilet No.2;
- Drainage work, landscape softworks, finishing works and installation of precast concrete planter units and concreting of insitu concrete planter at Section 7 and 8 (promenade) of the Works;
- Footpath and cycle track paving construction, desilting and CCTV inspection of the completed drainage works at Section 5 (Road L4) of the Works;
- Pavement construction and chain link fencing erection at Section 6 of the Works;
- Installation of irrigation pipe, lighting footing and duct, finishing the landscape structure, construction of in-situ mass concrete coping at the proposed Landscape Node P1, P2 & P3;
- Construction of foundation footing for Shelter at Public Landing Steps at Section 9 of the Works;;
- Construction of bus bays at Section 10 of the Works;
- Setting back of existing stockpile mound adjacent to the proposed cycle track at Housing Site 4;
- Filling of soil mix at planter; and
- Setting back of surcharge mound for VO/146 in Zone SA17.

### **Environmental Monitoring Progress**

The summary of the monitoring activities in this monitoring month is listed below:

- Noise Monitoring (Day-time): 4 Occasion at 4 designated locations
- 24-hour TSP Monitoring: 5 Occasions at 3 designated locations
- 1-hour TSP Monitoring: 13 Occasions at 3 designated locations
- Weekly-site inspection: 4 Occasions

### **Noise Monitoring**

No exceedances of Action and Limit levels for noise monitoring were recorded in the reporting month.

### **Air Monitoring**

No exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring in the reporting month.

### **Wastewater Monitoring**

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly and the monitoring had been carried out at 13 July 2006 by ET. The next wastewater monitoring should be at October 2006.

### **Site Inspection**

Environmental site inspections conducted in this reporting month are presented as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
Weekly site inspection (ET)	09, 14, 22, 28
Monthly site inspection (IEC/LWKJV/RE)	22



The observations were raised during this reporting month. The site inspection findings are presented as follows:

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
1	Air	Stockpiles at SA1 were found without cover during weekly site inspections on 09/09/06, 14/09/06, 22/09/06 and 28/09/06.	LWKJV replied to cover or water the stockpiles.	Since the finding was still observed at the last inspection of this reporting month, it will be verified during the first weekly site inspection of the coming month.
2	Water	Follow up action to the finding of previous month, wastewater at SA3 was found passing through desilting tank and then discharged to u-channel during weekly site inspection on 22/08/06. However, the wastewater was found discharged out to the sea during weekly site inspections on 28/09/06.	LWKJV replied to divert the wastewater to sedimentation tank before discharge.	Since the finding was still observed at the last inspection of this reporting month, it will be verified during the first weekly site inspection of the coming month.
3	Site Practice	EP and CNP at the site entrance A & B were found invalid and damaged during weekly site inspections on 22/09/06 and 28/09/06.	LWKJV replied to replace new copies of valid EP and CNP immediately.	Since the finding was still observed at the last inspection of this reporting month, it will be verified during the first weekly site inspection of the coming month.

### **Waste Management**

According to weekly site inspection, ET found that the Contractor followed the recommended procedures stipulated in the Waste Management Plan (WMP) on handling and disposal of wastes. 2000m<sup>3</sup> inert C&D materials, 60kg metals, 500kg paper/cardboard packaging, 20kg plastic and 35860kg general refuse were generated in this reporting month. All inert C&D materials were reused in the Contract and other wastes were handling under the instruction and procedure stated in the WMP in this reporting month.

### **Environmental Complaints**

No environmental complaints were received in this monitoring month.

### **Notification of summons and successful prosecutions**

No notification of summons and prosecutions with respect to environmental issues were registered in this reporting month.

### **Future Key Issues**

Base on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- Noise and air quality impact due to construction works;
- Maintain wheel washing facilities properly;
- Cleanup the access road regularly;
- Watering, hydro-seeding or covering all stockpiles with tarpaulin to avoid wind and water erosion;
- Diverting the silty runoff to sedimentation trap or sedimentation tanks;
- Use and maintenance of silt curtain properly during marine works;
- Maintain good site practice and waste management to minimize environmental impacts at the site;
- Follow-up improvements on waste management issues.



## 1.0 INTRODUCTION

Leader – Wai Kee (C&T) Joint Venture (LWKJV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No.: TP 37/03).

In accordance with the Section 10 of Environmental Permit to Construct and Operate a Designate Project (EP-108/2001/AEP-108/2001), EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A manual, environmental monitoring of air quality and noise is required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event-Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study report;
- Environmental requirements in contract documents.

This monthly EM&A report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 01 to 30 September 2006.

## 2.0 PROJECT INFORMATION

### 2.1 Background

Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No.: TP 37/03) was planned and designed by the Civil Engineering and Development Department (CEDD).

As the main Contractor of the captioned project: contracted by, LWKJV will follow the environmental monitoring recommendation stated at the EM&A Manual that was prepared with reference to the EIA Study for Feasibility Study on the Pak Shek Kok Development Area (PSKDA) Environmental Monitoring and Audit Manual under Agreement No. CE 90/96.

### 2.2 Site Description

Generally, the construction site is located at Pak Shek Kok development area. Surrounding the construction site, there are two air sensitive receivers: HKIB Staff Accommodation and Cheung Shue Tan Village and three noise sensitive receivers: HKIB Staff Accommodation, CUHK Residence No.10 and Cheung Shue Tan Village.

Figure 1 and 2 show the noise and air monitoring locations of this project.

### 2.3 Construction Programme

Details of construction programme are shown in Appendix F.

### 2.4 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.

### 2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.



Table 2.1 Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel. No.	Fax No.
CEDD	Mr. M. S. Lam	Employer	2158 5630	2693 2918
Hyder	Mr. Herman Fong	Engineer	2603 6638	2603 7883
LWJV	Mr. T. T. Wong	Project Manager	2442 1123	2442 9733
Hyder	Ir. Coleman Ng	Independent Environmental Checker	2911 2233	2805 5028
ETL	Mr. C.L. Lau	Environmental Team Leader	2946 7791	2695 3944

### 3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

The site area of this project is shown in Appendix G.

A summary of the major construction activities undertaken in this monitoring month is shown in Table 3.1. The implementation of corresponding mitigation measures is summarized in Table 3.2.

Table 3.1 Major Construction Activities in this reporting month

Major Construction Activity	Location
Drainage works (Excavation, pipe laying and breaking)	Section 1 & 2
Falsework for MLS bridge deck	MLS bridge deck
Construction of wall, RE Wall and pile cap and Retaining wall	Voided Abutment, RE Wall and pile cap at North Abutment, and Retaining wall No.1
Construction of MLS Subway pump ramp and barrel	MLS Subway
Back filling	Toilet No.2
Drainage work, landscape softworks, finishing works and installation of precast concrete planter units and concreting of insitu concrete planter	Section 7 and 8 (promenade)
Footpath and cycle track paving construction, desilting and CCTV inspection of the completed drainage works	Section 5 (Road L4)
Pavement construction and chain link fencing erection	Section 6
Installation of irrigation pipe, lighting footing and duct, finishing the landscape structure, construction of in-situ mass concrete coping	Proposed Landscape Node P1, P2 & P3
Construction of foundation footing for Shelter	Public Landing Steps at Section 9
Construction of bus bays	Section 10
Setting back of existing stockpile mound adjacent to the proposed cycle track	Housing Site 4
Filling of soil mix at planter	Planter at SA14 and Public Plaza
Setting back of surcharge mound	VO/146 in Zone SA17

Table 3.2 Implementation of Environmental Mitigation Measures

General construction works	<ul style="list-style-type: none"> <li>• Effective water sprays used on the site at potential dust emission sources such as haul roads and unpaved areas;</li> <li>• The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading;</li> <li>• Minimize of exposed soil areas to reduce the potential for increased siltation and contamination of run-off;</li> <li>• Water, hydro-seed or cover the open stockpile and exposed loose soil areas by using clean tarpaulin sheets;</li> <li>• Provide proper and efficient drainage facilities (e.g. wheel washing facilities) and sedimentation system to ensure that site runoff should be treated before discharged to drains;</li> <li>• Remove the sand/rubbish accumulated in the drain/channel regularly;</li> <li>• Use and maintenance of silt curtain properly during marine works;</li> <li>• Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source;</li> <li>• Remove the construction waste accumulated inside or outside the site regularly.</li> </ul>
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#### 4.0 AIR QUALITY MONITORING

##### 4.1 Monitoring Requirement

1-hour and 24-hour TSP monitoring were required to be conducted to monitor the air quality, at designated monitoring locations:

- HKIB Staff Accommodation (on ground floor near the entrance facing south-east);
- Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring;
- Cheung Shue Tan Village (in front of Man Kee Store) for 24-hr TSP monitoring;
- Near Wen Chih Tang at the CUHK.

##### 4.2 Monitoring Equipment

Continuous 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. One portable dust meter was used to carry out the 1-hour TSP monitoring. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS and portable dust meter are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	Model and Make
HVS	Greasby GMWS2310
Calibrator	Tisch TE-5025A
1-hour TSP Dust Meter	TSI Model 8520 Dust Trak™ Aerosol Monitor

##### 4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequencies of impact air quality monitoring

Parameter	Duration	Frequency
24-hr TSP	24 hr (0000-2400)	Once every six days
1-hr TSP	1 hr (0700-1900)	Three times every six days

##### 4.4 Monitoring Locations and Schedule

Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

Monitoring stations	Locations
AM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east) for 1-hr TSP monitoring
AM3	Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring
AM3A	Cheung Shue Tan (in front of Man Kee Store) for 24-hr TSP monitoring
AM5	Near Wen Chih Tang at the CUHK

The air quality monitoring schedule for 24-hr and 1-hr TSP monitoring at designated monitoring locations is summarized in table 4.4.





Table 4.4 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP				1-hr TSP		
		Start		Finish		Date	Start	Finish
		Date	Time	Date	Time			
AM1	HKIB Staff Accommodation					02/09/06	10:45	11:45
						05/09/06	11:00	12:00
						07/06/06	13:46	14:46
						09/09/06	09:30	10:30
						12/09/06	10:45	11:45
						14/09/06	14:20	15:20
						16/09/06	10:00	11:00
						19/09/06	13:02	14:02
						21/09/06	10:10	11:10
						23/09/06	09:05	10:05
						26/09/06	09:40	10:40
						28/09/06	13:00	14:00
						30/09/06	08:40	09:40
AM3	Cheung Shue Tan Village (Near the outer building, temple)					02/09/06	13:15	14:15
						05/09/06	13:05	14:05
						07/06/06	15:06	16:06
						09/09/06	14:48	15:48
						12/09/06	13:02	14:02
						14/09/06	08:50	09:50
						16/09/06	13:00	14:00
						19/09/06	14:15	15:15
						21/09/06	14:20	15:20
						23/09/06	10:28	11:28
						26/09/06	11:00	12:00
						28/09/06	16:15	17:15
						30/09/06	10:30	11:30
AM5	Near Wen Chih Tang at the CUHK					02/09/06	14:30	15:30
						05/09/06	14:15	15:15
						07/06/06	16:20	17:20
						09/09/06	15:30	16:30
						12/09/06	16:45	17:45
						14/09/06	10:10	11:10
						16/09/06	14:15	15:15
						19/09/06	13:38	14:38
						21/09/06	15:55	16:55
						23/09/06	14:01	15:01
						26/09/06	15:50	16:50
						28/09/06	08:30	09:30
						30/09/06	13:30	14:30
AM1	HKIB Staff Accommodation	06/09/06	17:30	07/09/06	17:44			
		12/09/06	10:30	13/09/06	10:31			
		18/09/06	09:35	19/09/06	09:34			
		23/09/06	10:00	24/09/06	10:30			
		29/09/06	09:00	30/09/06	09:18			
AM3A	Cheung Shue Tan (in front of Man Kee Store)	06/09/06	18:00	07/09/06	19:28			
		12/09/06	13:15	13/09/06	13:56			
		18/09/06	09:10	19/09/06	09:26			
		23/09/06	11:15	24/09/06	12:05			
		29/09/06	09:50	30/09/06	10:28			
AM5	Near Wen Chih Tang at the CUHK	06/09/06	17:45	07/09/06	17:54			
		12/09/06	16:30	13/09/06	16:11			
		18/09/06	09:25	19/09/06	09:58			
		23/09/06	15:15	24/09/06	15:35			
		29/09/06	09:15	30/09/06	09:44			

## 4.5 Monitoring Methodology

### 4.5.1 24-hour TSP Monitoring

#### Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets are employed for 24-hour TSP. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

#### Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

#### Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m<sup>3</sup>/min and 1.7m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling period of 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±5%.

#### Maintenance & Calibration

- The HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

### 4.5.2 1-hour TSP Monitoring

#### Measuring Procedures

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Set POWER to ON, check the battery indicator to ensure whether the power supply is enough to conduct the TSP monitoring;
- Calibrate the dust meter by zero check;
- Set the TIME CONSTANT of the dust meter;
- Press SAMPLE to start the TSP monitoring;



- Record the maximum, minimum and average reading directly from the dust meter by press STATISTICS when monitoring complete.

Maintenance & Calibration

- 1-hr dust meter should be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of impact air quality monitoring.

**4.5.3 Wind Data Monitoring**

Wind data (wind speed and wind direction) were directly extracted from Sha Tin Station (located at Sha Tin Race Course) of Hong Kong Observatory. All wind data during this reporting month are shown in Appendix D.

**4.6 Action and Limit Levels**

Action and Limit levels for 24-hr TSP and 1-hr TSP derived as illustrated in Table 4.5.

Table 4.5 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
AM1	164 *	260 *	325 *	500 *
AM3	---	---	306 **	500 **
AM3A	183 **	260 **	---	---
AM5	174	260	329	500

\* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Advance Engineering Infrastructure Works for Pak Shek Kok Development – Southern Access Road and Sewage Pumping Station No.3.

\*\* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 – Contract No. TP 35/02.

**4.7 Event-Action Plans**

Please refer to Appendix E for details.

**4.8 Results**

**4.8.1 24-hour TSP Monitoring**

All monitoring data of 24-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 24-hour TSP monitoring results for the reporting month is shown in Appendix B3.

No exceedances of Action and Limit Level of 24-hour TSP monitoring results were recorded during the reporting month.

**4.8.2 1-hour TSP Monitoring**

1-hour TSP monitoring was carried out at monitoring stations, AM1 and AM3 in the reporting month. All monitoring data of 1-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 1-hour TSP monitoring results for the reporting month is shown in Appendix B3.

No exceedances of Action and Limit Level of 1-hour TSP monitoring results were recorded during the reporting month.

## 5.0 Noise Monitoring

### 5.1 Monitoring Requirements

As the requirement in EM&A Manual, noise monitoring was conducted at designated monitoring locations:

- HKIB Staff Accommodation (on ground floor near the entrance facing south-east);
- Cheung Shue Tan Village (near the outer building, temple);
- CUHK Residence No.10;
- Near Wen Chih Tang at the CUHK.

### 5.2 Monitoring Equipment

Integrating Sound Level Meters were used for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ). They comply with International Electro technical Commission Publications 651:1979 (Type1) and 804:1985 (Type1), and speed in m/s was used to monitor the wind speed.

Table 5.1 summarized noise monitoring equipment model being used. A copy of the calibration certificates for noise meters and calibrator are attached in Appendix C1.

Table 5.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-31 Sound Level Meter
Calibrator	Rion NL-73 Sound Level Calibrator
Portable Wind Speed Indicator	TSI Model 8340-M Air Velocity Meter

### 5.3 Monitoring Parameters, duration and Frequency

Noise monitoring for the A-weighted levels  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. The following guide on the regular monitoring frequency for each monitoring station on a per week basis when noise generating activities are underway:

- One set of measurements between 0700-1900 hours on normal weekdays (6 consecutive  $L_{eq(5-min)}$ );
- One set of measurements between 1900-2300 hours (3 consecutive  $L_{eq(5-min)}$ )\*;
- One set of measurements between 2300-0700 hours of next day (3 consecutive  $L_{eq(5-min)}$ )\*;
- One set of measurements between 0700-1900 hours on holidays (3 consecutive  $L_{eq(5-min)}$ )\*.

(\*): Noise monitoring to be conducted only when there is construction work.

Duration, frequencies and parameters of noise measurement are presented in Table 5.2.

Table 5.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	Parameters	Frequency
Day-time: 0700-1900 hrs on normal weekday	30	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week
Evening-time: 1900-2300 hrs	15	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week
Night-time: 2300-0700 hrs of next day	15	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week
Holiday: 0700-1900 hrs	15	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per week

### 5.4 Monitoring Locations and Period

In this reporting month, there were four noise monitoring locations: HKIB Staff Accommodation, Cheung Shue Tan Village, CUHK Residence No.10 and Near Wen Chih Tang at the CUHK. The location of the monitoring stations are described in Table 5.3 and depicted in Figure 1.

Table 5.3 Noise Monitoring Locations

Noise Monitoring station	Location
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No.10
NM3	Cheung Shue Tan Village (near the outer building, a temple)
NM8	Near Wen Chih Tang at the CUHK

The noise-monitoring programme of monitoring locations (Day-time, Evening-time, Holiday and Night-time) is summarized in Table 5.4.

Table 5.4 Monitoring Periods for noise monitoring stations

Monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM1	05/09/06	11:02	---	---	---	---	---	---
	12/09/06	10:50	---	---	---	---	---	---
	19/09/06	13:08	---	---	---	---	---	---
	26/09/06	09:35	---	---	---	---	---	---
NM2	05/09/06	08:15	---	---	---	---	---	---
	12/09/06	11:08	---	---	---	---	---	---
	19/09/06	18:45	---	---	---	---	---	---
	26/09/06	13:10	---	---	---	---	---	---
NM3	05/09/06	13:16	---	---	---	---	---	---
	12/09/06	13:10	---	---	---	---	---	---
	19/09/06	14:20	---	---	---	---	---	---
	26/09/06	11:10	---	---	---	---	---	---
NM8	05/09/06	14:20	---	---	---	---	---	---
	12/09/06	16:50	---	---	---	---	---	---
	19/09/06	13:42	---	---	---	---	---	---
	26/09/06	15:55	---	---	---	---	---	---

## 5.5 Monitoring Procedures and Calibration Details

### Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting: A
  - Time weighting : Fast
  - Time measurement : 5 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Free Field correction to the measurements should be made. Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

#### Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
- The meter is sent to be supplier or HOKLAS laboratory to check and calibrated at yearly intervals.

### 5.6 Action and Limit Levels

The Action and Limit levels for noise levels derived as illustrated in Table 5.5.

Table 5.5 Action and Limit Levels for noise monitoring

Time Period	Time Period	Action	Limit
Normal hours	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *
Holiday	0700-1900 hrs on holidays		70 dB(A) **
Evening-time	1900-2300 hrs on all other days		
Night-time	2300-0700 hrs of next day		55 dB(A) **

\* = Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

\*\* = Area Sensitivity Rating (ASR) C is selected from the "Technical Memorandum on Noise from Construction Work Other Than Percussive Piling".

### 5.7 Event-Action Plans

Please refer to the Appendix E for details.

### 5.8 Results

Only Day-time noise monitoring were carried out at monitoring stations in this reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during the night-time period. All noise levels are provided in Appendix C2. Graphical presentation of the monitoring results for the reporting month is shown in Appendix C3.

No Day-time noise monitoring results at all monitoring stations exceeded the Action Level since no documented complaints on noise issue were received in this reporting month. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring.

## 6.0 WASTEWATER MONITORING

Effluent Discharge License of this Project is valid from 06 December 2004 (Discharge Licence No.: 3246-Part A and Part B).

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly and the monitoring had been carried out at 13 July 2006 by ET. The next wastewater monitoring should be at October 2006.

## 7.0 ENVIRONMENTAL NON-CONFORMANCE

### 7.1 Summary of environmental monitoring

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting month.



No day-time noise level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month. No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly and the monitoring had been carried out at 13 July 2006 by ET. The next wastewater monitoring should be at October 2006.

## 7.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

## 7.3 Summary of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this month.

## 8.0 SITE INSPECTION

Weekly site inspections were carried out by the ET in this reporting month (09, 14, 22 and 28 September 2006). Monthly joint site inspection at 22 September 2006 was carried out by Engineer's Representative, IEC and LWKJV. The implementation status of the mitigation measures on site inspections in this reporting month is presented in Appendix H.

### 8.1 Summary of the site inspection findings and Action(s) taken by LWKJV and ET

Summaries of the site inspection findings in this reporting month are shown in Table 8.1.

Table 8.1 The summary of the site inspection findings and Action(s) taken by LWKJV and ET

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
1	Air	Stockpiles at SA1 were found without cover during weekly site inspections on 09/09/06, 14/09/06, 22/09/06 and 28/09/06.	LWKJV replied to cover or water the stockpiles.	Since the finding was still observed at the last inspection of this reporting month, it will be verified during the first weekly site inspection of the coming month.
2	Water	Follow up action to the finding of previous month, wastewater at SA3 was found passing through desilting tank and then discharged to u-channel during weekly site inspection on 22/08/06. However, the wastewater was found discharged out to the sea during weekly site inspections on 28/09/06.	LWKJV replied to divert the wastewater to sedimentation tank before discharge.	Since the finding was still observed at the last inspection of this reporting month, it will be verified during the first weekly site inspection of the coming month.
3	Site Practice	EP and CNP at the site entrance A & B were found invalid and damaged during weekly site inspections on 22/09/06 and 28/09/06.	LWKJV replied to replace new copies of valid EP and CNP immediately.	Since the finding was still observed at the last inspection of this reporting month, it will be verified during the first weekly site inspection of the coming month.

### 8.2 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 8.2.



Table 8.2 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Construction Noise Permit for Reclamation area of Science Park Phase 2 & 3, Pak Shek Kok, N.T.	GW-RN0305-06	17/06/06	16/12/06	<p><u>Group A</u> Two Derrick Barge (CNP061) One Tug Boat (CNP221) One Generator, standard (CNP101)</p> <p><u>Group B</u> Two Excavator, tracked (CNP081) Two Dump truck (CNP067) One Generator, standard (CNP101)</p>
Construction Noise Permit for the use of Powered Mechanical Equipment for the Purpose of carrying out Construction Work other than Percussive Piling and/or the carrying out of prescribed Construction Work	GW-RN0240-06	30/05/06	29/12/06	<p><u>Group A</u> Two Poker, vibrator, hand-held (CNP170) Two Concrete pump, lorry mounted (CNP047) Two Concrete lorry mixer (CNP044)</p> <p><u>Group B</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Roller, vibratory</p> <p><u>Group C</u> One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185) One Dump Truck (CNP067)</p> <p><u>Group D</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Crane, mobile (diesel) (CNP048) One Lorry with crane</p>
Construction Noise Permit for the Construction Works of the Project at Pak Shek Kok Development Package 2A, Tai Po	GW-RN0388-06	27/07/06	26/01/07	<p><u>Group A</u> Two Poker, vibratory, hand-held (CNP170) Two Concrete lorry mixer (CNP044) One Excavator, tracked (CNP081)</p> <p><u>Group B</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081)</p> <p><u>Group C</u> One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185) One Dump Truck (CNP067)</p> <p><u>Group D</u> One Dump Truck (CNP067) One Excavator, tracked (CNP081) One Crane, mobile (diesel) (CNP048) One Lorry with crane</p>
Construction Noise Permit for the use of Powered Mechanical Equipment for the Purpose of carrying out Construction Work other than Percussive Piling and/or the carrying out of prescribed Construction Work	GW-RN0307-06	21/06/06	20/12/06	<p><u>Group A</u> One Derrick Barge (CNP061) Four Dump truck, 5.5 tonne &lt; gross vehicle weight &lt; 38 tonne One Excavator, tracked (CNP081) One Generator, standard (CNP101)</p> <p><u>Group B</u> One Derrick Barge (CNP061) One Tug Boat (CNP221) One Generator, standard (CNP101)</p>
Wastewater Discharge License	3246 – Part A	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank to Coastal water or communal drain for the carriage of surface drainage water.
Wastewater Discharge License	3246 – Part B	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and on-site aerobic waste water treatment system to soak-away pit.
Chemical Waste Producer	5113-729-LL1113-01	24/09/04	---	Spent lubricating oil, spent battery parts containing heavy metals



### 8.3 Recommendations on site inspection findings in Site Inspections of this month

Based on the site inspection findings, the recommendations are as below:

- All stockpiles should be covered with clean tarpaulin sheets, spraying with water or hydro-seeding to avoid wind and water erosion;
- The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading;
- Minimize of exposed soil areas to reduce the potential for increased siltation and contamination of run-off;
- Checking and maintaining all the site machines to prevent dust emission;
- Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;
- Use and maintenance of silt curtain properly during marine works;
- Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source;
- Maintain good waste management at the site.

## 9.0 WASTE MANAGEMENT

### 9.1 Waste Management Audit

Waste management audit was carried out by the ET on a weekly basis. The implementation status of the mitigation measures on waste management in this reporting month is presented in Appendix H.

### 9.2 Records of Waste Quantities

All type of wastes arising from the construction work are classified into the following:

- General refuses;
- Chemical waste;
- Construction & demolition (C&D) material.

The quantities of waste for disposal in this month are summarized in Table 9.1.

Table 9.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (m <sup>3</sup> )	2000	Reused in the Contract	117365
	Broken Concrete (m <sup>3</sup> )	0	N/A	865
	Reused in the Contract (m <sup>3</sup> )	2000	N/A	116500
	Reused in other Projects (m <sup>3</sup> )	0	N/A	0
	Disposal as Public Fill (m <sup>3</sup> )	0	N/A	0
C&D Waste	Metals (1000kg)	0.080	N/A	37.705
	Paper/Cardboard Packaging (1000kg)	0.450	N/A	2.086
	Plastics (1000kg)	0.020	N/A	0.083
	Chemical Waste (1000kg)	0.000	N/A	3.000
	Other, e.g. General Refuse (1000kg)	38.33	SENT	321.17

## 10.0 IMPLEMENTATION STATUS

### 10.1 Implementation Status of Environmental Mitigation Measures

LWKJV has been implementing the required environmental mitigation measures according to the Mitigation Protection Measures stated in Implementation Schedule of the EM&A Manual. The implementation status of the environmental mitigation measures in this reporting month is presented in Appendix H.

#### Air Quality

The Contractor was reminded to water or cover all the stockpiles by using clean tarpaulin sheets. The Contractor was also reminded to cleanup the access road regularly to avoid dust emission and provide effective wheel washing facilities.

#### Noise

All mitigation measures stated in Appendix H were implemented properly in this reporting month.

#### Water Quality

The Contractor was reminded to provide more effort to implement mitigation measures, such as diverting site runoff to suitable treatment processes before discharge, sedimentation system and drainage facilities.

#### Waste Management

LWKJV has been implementing most mitigation measures on waste management.

### 10.2 Implementation Status of Event and Action Plan

There were no exceedances in air quality and noise monitoring parameters recorded in this monitoring month. No further mitigation measures were required.

### 10.3 Implementation Status of Environmental Complaint Handling

No complaints had been received during this monitoring month.

## 11.0 CONCLUSION

Impact monitoring of air quality and noise were carried out at designated locations in accordance with the EM&A Manual in this reporting month.

According to the summary of air and noise monitoring results, no exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting month. Besides, No Day-time noise level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during these periods.

During this reporting month, no wastewater monitoring was carried out since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly and the monitoring had been carried out at 13 July 2006 by ET. The next wastewater monitoring should be at October 2006.

According to the ET weekly site inspection and IEC monthly site audit carried out this month, it indicated that site practices of the LWKJV were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

## 12.0 FUTURE KEY ISSUES

### 12.1 Upcoming EM&A Schedule in coming two months

The Proposed EM&A program in coming two months are presented as following table:

Table 12.1 Upcoming EM&A Schedule in coming two months

Type of Monitoring	October 2006	November 2006
Noise Monitoring (Day-time)	03, 10, 17, 24, 31	07, 14, 21, 28
1-hour TSP	03, 05, 07, 10, 12, 14, 17, 19, 21, 24, 26, 28, 31	02, 04, 07, 09, 11, 14, 16, 18, 21, 23, 25, 28, 30
24-hour TSP	05, 11, 17, 23, 28	03, 09, 15, 21, 27
Site Inspection	05, 12, 19, 26	02, 09, 16, 23, 30



## 12.2 Upcoming construction works schedule in the coming months

The major construction works planned to be carried out in next two months and their possible impact is tabulated (Table 12.2) for reference.

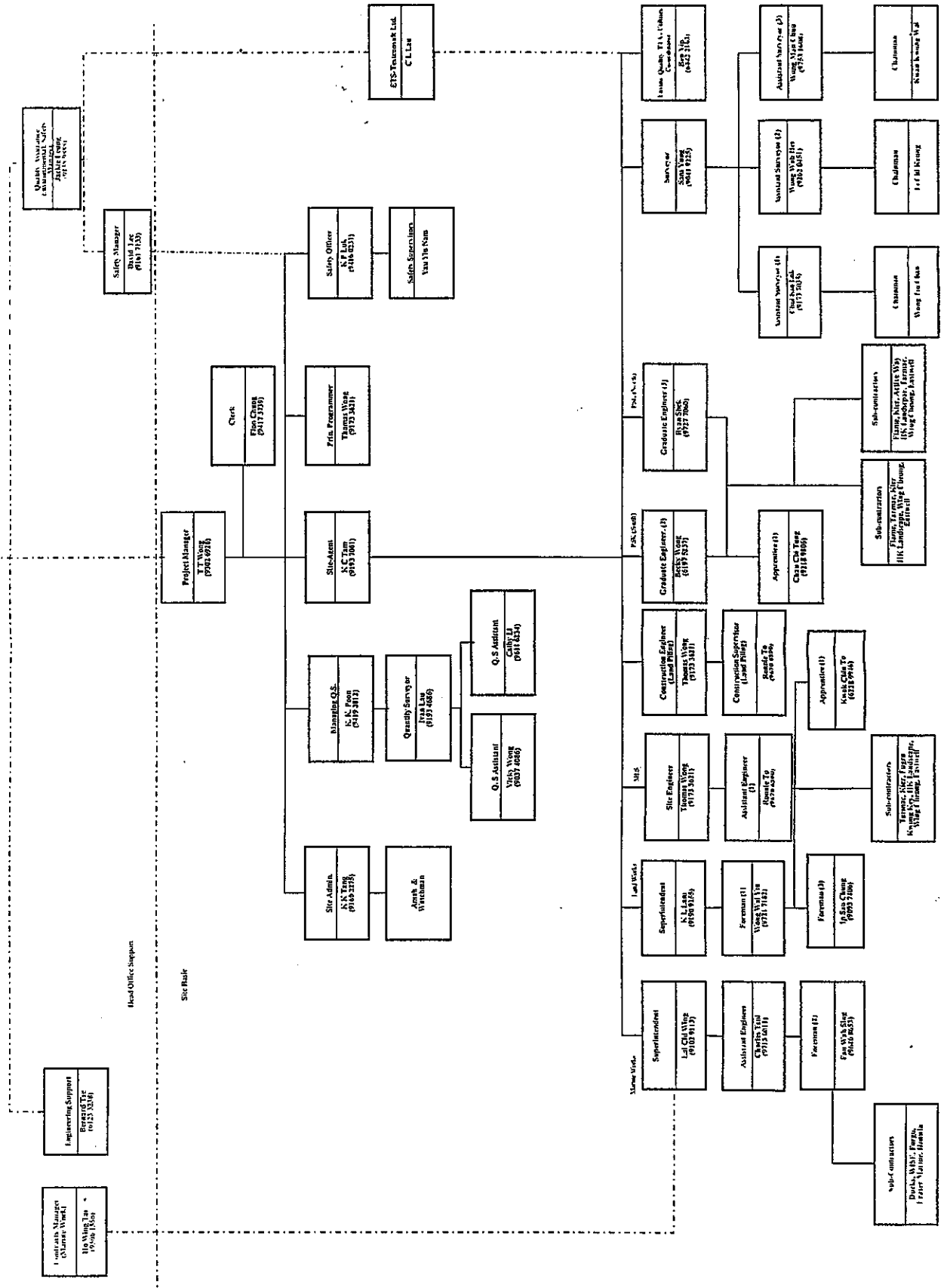
Table 12.2 Construction Plan in the coming months

Month	Works Planned to be Carried Out
Between October and November 2006	<ul style="list-style-type: none"><li>▪ Drainage Works (excavation, pipe laying and breaking) at Section 1 and 2 (Ma Liu Shui), 7 and 8 (Promenade) of the Works;</li><li>▪ Construction of RE wall and pile cap at North Abutment, and erection of formwork and falsework for deck construction for the Alternative Design of the proposed Ma Liu Shui Bridge;</li><li>▪ Construction of Retaining Wall No.1;</li><li>▪ Construction of pedestrian ramps and barrel of the proposed Ma Liu Shui Subway (Alternative Design);</li><li>▪ Construction of wall and columns, and installation of sewerage and drainage system for Toilet No.2;</li><li>▪ Paving of footpath at the proposed Road L4 under Section 5 of the Works;</li><li>▪ Installation of additional valves and connection for water mains at the cycle track, pavement construction and fencing erection at Section 6 of the Works;</li><li>▪ Installation of public light footing and duct along the proposed Promenade, construction of hard landscape structures, and CCTV inspection of the completed drainage pipes;</li><li>▪ Hard and soft landscaping works at Section 7 of the Works;</li><li>▪ Construction of Pump House No.1;</li><li>▪ Construction of mass concrete coping at the proposed Landscape Node P1, P2 &amp; P3;</li><li>▪ Installation of precast concrete planter and parapet wall units along the proposed Promenade at Section 8 of the Works;</li><li>▪ Construction of in-situ concreting of section above +2.5mPD and shelter foundation at the proposed Public Landing Steps;</li><li>▪ Setting back of surcharge mound at Housing Site 4 as per VO/146;</li><li>▪ Filling of soil mix at planter wall.</li></ul>



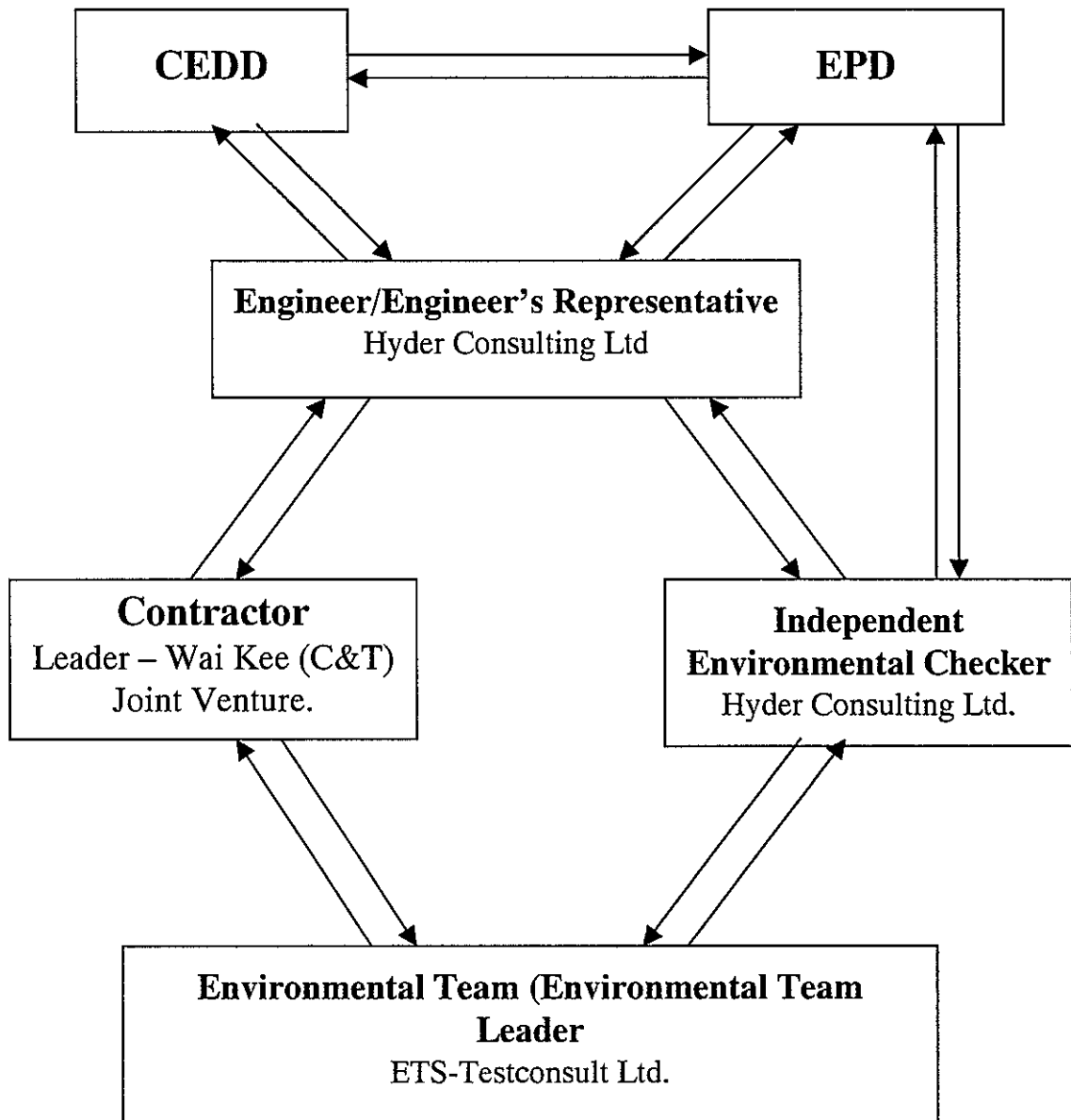
## **Appendix A**

### **Organization Chart and Lines of Communication**





# Lines of Communication





## **Appendix B1**

### **Calibration Certificates for Air Quality Monitoring Equipments**



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**TEST REPORT**

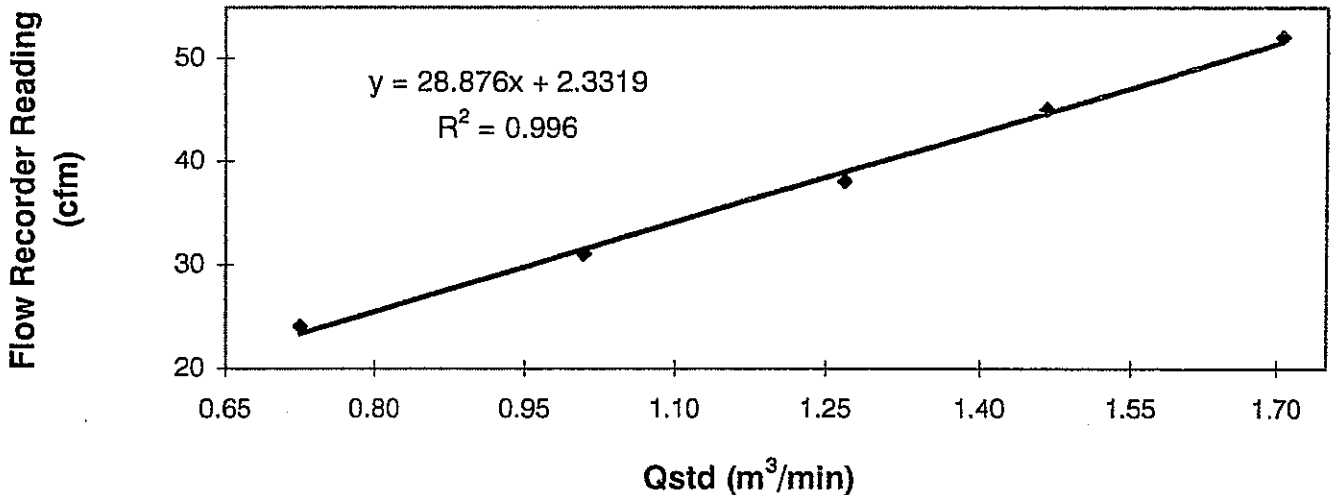
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Greasby GMW **Date of Calibration** : 15 July 2006  
**Serial No.** : 1178 (ET / EA / 003 / 01) **Calibration Due Date** : 14 September 2006  
**Method** : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

**Results** :

Flow recorder reading (cfm)	52	45	38	31	24
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.71	1.47	1.27	1.01	0.73
Pressure :	756.06 mm Hg		Temp. :	302 K	

**Sampler 1178 Calibration Curve**  
**Site: Pak Shek Kok (AM1) (24hr.)**  
**Date of Calibration: 15 July 2006**



**Acceptance Criteria** : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by :   
TIN, Yee Kwun  
(Technician)

Approved by :   
LAW, Sau Yee  
(Environmental Officer)





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**TEST REPORT**

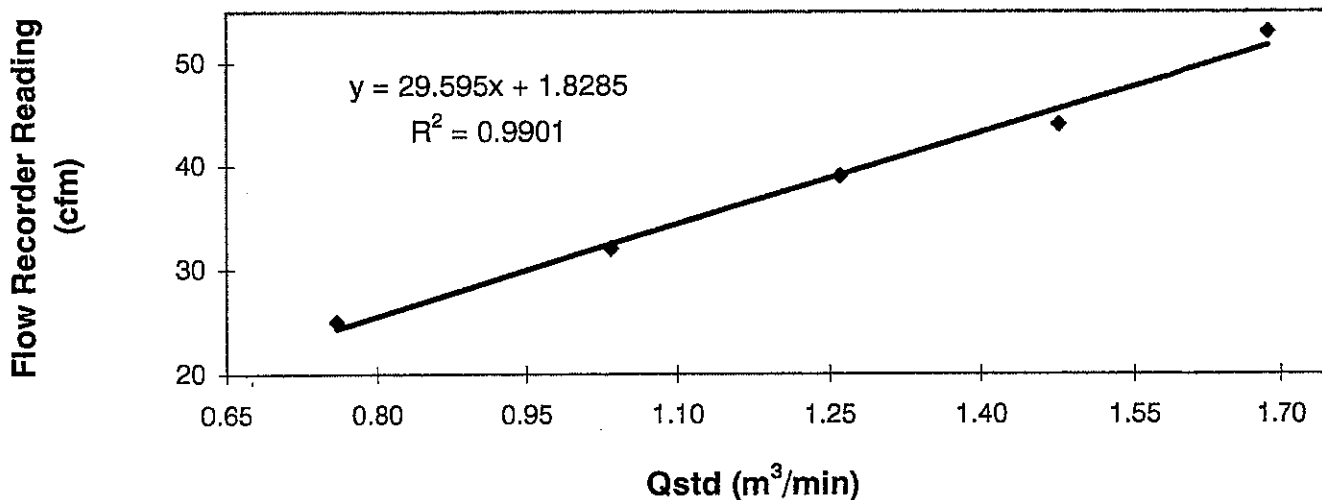
**Calibration Report  
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**Manufacturer** : Greasby GMW **Date of Calibration** : 16 September 2006  
**Serial No.** : 1178 (ET / EA / 003 / 01) **Calibration Due Date** : 15 November 2006  
**Method** : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

**Results** :


Flow recorder reading (cfm)	53	44	39	32	25
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.68	1.47	1.26	1.03	0.76
Pressure :	751.56 mm Hg		Temp. :	300 K	


**Sampler 1178 Calibration Curve  
Site: Pak Shek Kok (AM1) (24hr.)  
Date of Calibration: 16 September 2006**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Technician)

Approved by :   
LAW, Sau Yee  
(Environmental Officer)



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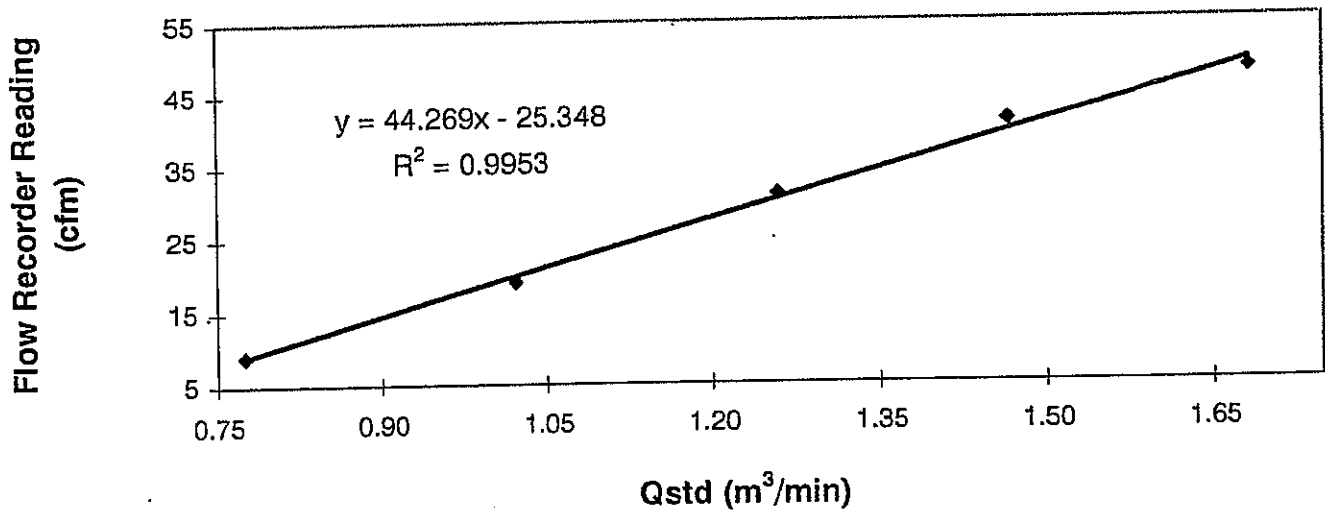
**TEST REPORT**

**Calibration Report  
of  
High Volume Air Sampler**

Manufacturer : Greasby GMW Date of Calibration : 15 July 2006  
Serial No. : 7179 ( ET / EA / 003 / 16 ) Calibration Due Date : 14 September 2006  
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results	Flow recorder reading (cfm)	48	41	31	19	9
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.68	1.47	1.26	1.02	0.78
	Pressure :	756.06 mm Hg		Temp. :	302 K	

**Sampler 7179 Calibration Curve  
Site: Pak Shek Kok (AM3A)  
Date of Calibration: 15 July 2006**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by : TIN, Yee Kwun  
(Technician)

Approved by : LAW, Sau Yee  
(Environmental Officer)



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**TEST REPORT**

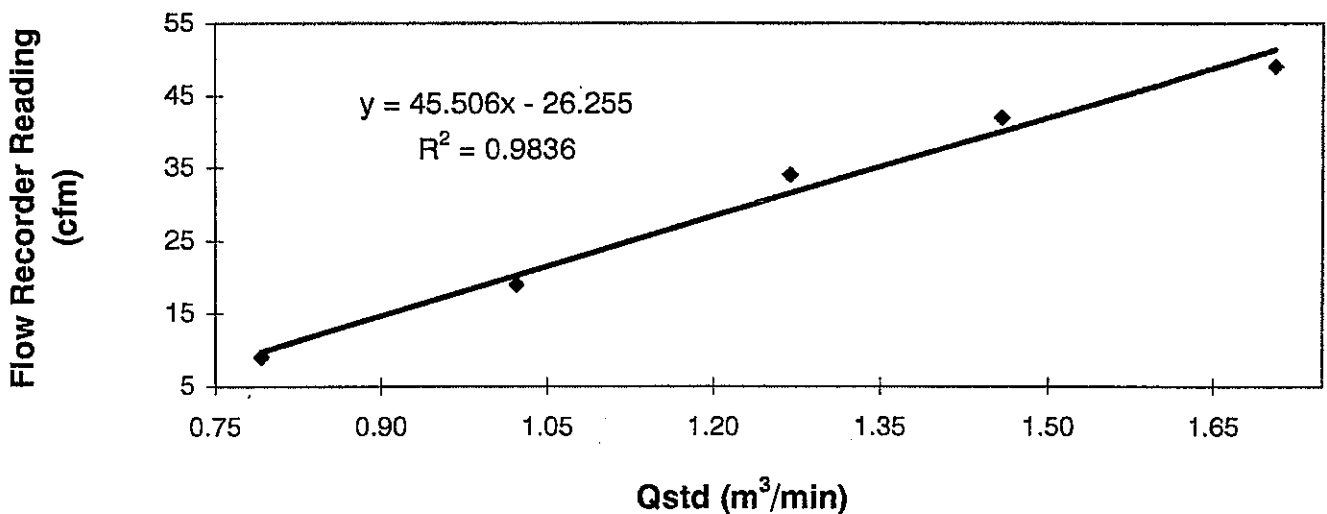
**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Greasby GMW **Date of Calibration** : 16 September 2006  
**Serial No.** : 7179 ( ET / EA / 003 / 16 ) **Calibration Due Date** : 15 November 2006  
**Method** : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

**Results** :

Flow recorder reading (cfm)	49	42	34	19	9
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.71	1.46	1.27	1.02	0.79
Pressure :	751.56 mm Hg			Temp. :	300 K

**Sampler 7179 Calibration Curve  
Site: Pak Shek Kok (AM3A)  
Date of Calibration: 16 September 2006**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Technician)

Approved by :   
LAW, Sau Yee  
(Environmental Officer)



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**TEST REPORT**

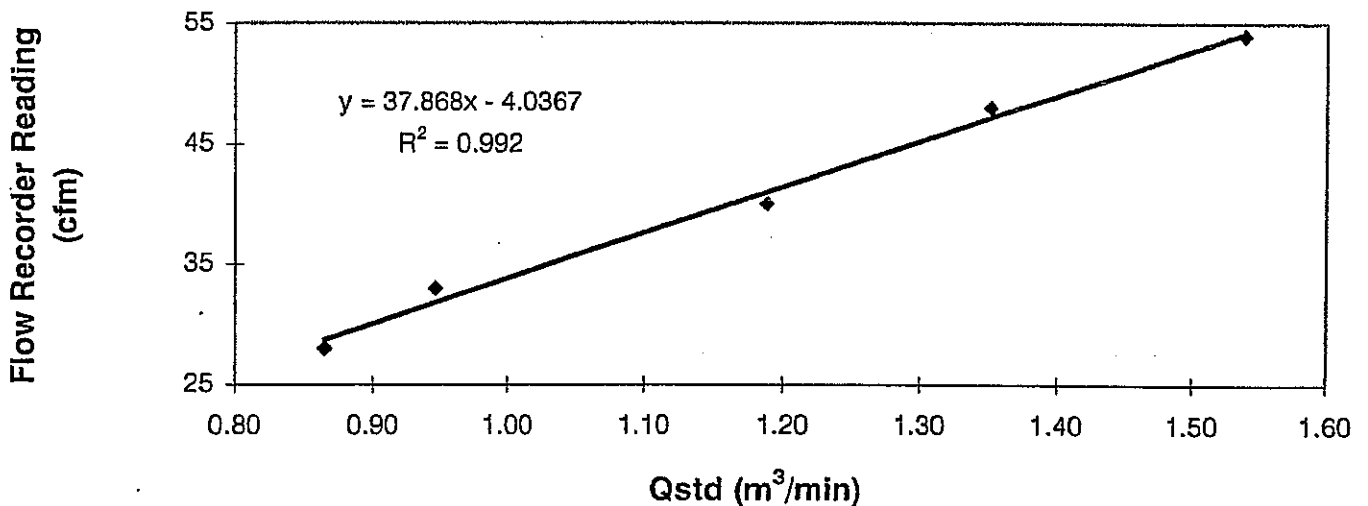
Calibration Report  
of  
High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 15 July 2006  
Serial No. : 1172 ( ET / EA / 003 / 11 ) Calibration Due Date : 14 September 2006  
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :

Flow recorder reading (cfm)	54	48	40	33	28
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.54	1.35	1.19	0.95	0.87
Pressure :	756.06 mm Hg			Temp. :	302 K

**Sampler 1172 Calibration Curve**  
**Site: Pak Shek Kok (AM5)**  
**Date of Calibration: 15 July 2006**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by : Jn  
TIN, Yee Kwun  
(Technician)

Approved by : Lada Lam  
LAW, Sau Yee  
(Environmental Officer)



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Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

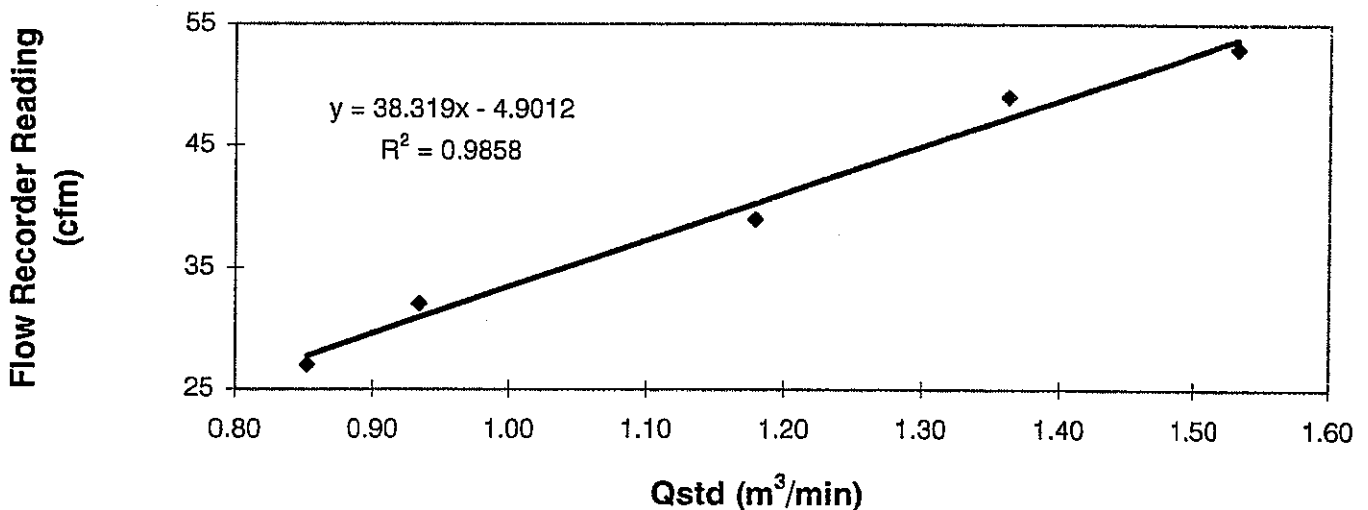
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Greasby GMW                      **Date of Calibration** : 16 September 2006  
**Serial No.** : 1172 ( ET / EA / 003 / 11 )                      **Calibration Due Date** : 15 November 2006  
**Method** : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

**Results** :


Flow recorder reading (cfm)	53	49	39	32	27
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.53	1.36	1.18	0.93	0.85
Pressure :	751.56 mm Hg			Temp. :	300 K


**Sampler 1172 Calibration Curve**  
**Site: Pak Shek Kok (AM5)**  
**Date of Calibration: 16 September 2006**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Technician)

Approved by :   
LAW, Sau Yee  
(Environmental Officer)



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

**Internal Calibration Report**  
of  
**Dust Trak Monitor**

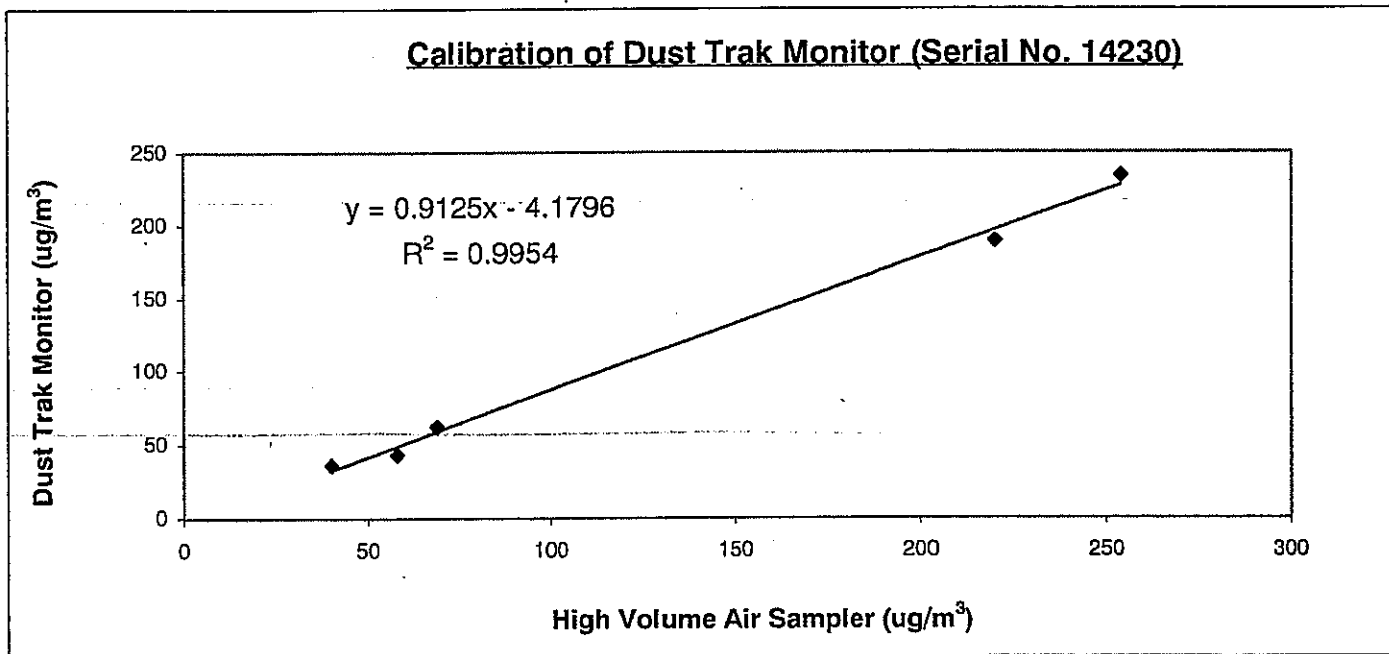
Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 21 July 2006

Serial No. : 14230 ( ET / EA / 001 / 04 ) Due Date : 20 January 2007

Method : Conduct parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition

Results :

Dust Trak Monitor (ug/m <sup>3</sup> )	40	58	69	220	254
High Volume Air Sampler (ug/m <sup>3</sup> )	36	43	62	189	234
High Volume Air Sampler Serial No.: 1178			Calibration Date: 14 / 09 / 2006		



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.

Calibrated by : MAK Kei Wai  
MAK Kei Wai  
(Technician)

Approved by : LAW Sau Yee  
LAW Sau Yee  
(Environmental Officer)



## **Appendix B2**

### **Air Quality Monitoring Results**

### Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1  
Location : HKIB Staff Accommodation

Start Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
06/09/06	17:30	07/09/06	17:44	10507.41	10531.65	24.24	0.96	0.96	0.96	2.8973	2.8740	55	Sunny
12/09/06	10:30	13/09/06	10:31	10531.70	10555.72	24.02	1.05	1.05	1.05	2.8612	2.9087	30	Cloudy
18/09/06	09:35	19/09/06	09:34	10555.72	10579.70	23.98	0.95	0.95	0.95	2.8645	2.9629	72	Cloudy
23/09/06	10:00	24/09/06	10:30	10579.70	10603.87	24.17	1.05	1.05	1.05	2.8979	2.9804	54	Sunny
29/09/06	09:00	30/09/06	09:18	10603.87	10328.17	24.30	1.05	1.05	1.05	2.8683	2.9566	58	Sunny

Monitoring Station : AM3A  
Location : Cheung Shue Tan (in front of Man Kee Store)

Start Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
06/09/06	18:00	07/09/06	19:28	15877.50	15902.96	25.46	1.30	1.30	1.30	2.9148	2.9799	33	Sunny
12/09/06	13:15	13/09/06	13:56	15902.96	15927.40	24.44	1.26	1.26	1.26	2.8554	2.9210	36	Cloudy
18/09/06	09:10	19/09/06	09:26	15927.40	15951.66	24.26	1.21	1.21	1.21	2.8793	2.9632	48	Cloudy
23/09/06	11:15	24/09/06	12:05	15951.66	15976.24	24.58	1.21	1.21	1.21	2.8712	2.9281	32	Sunny
29/09/06	09:50	30/09/06	10:28	15976.25	16000.64	24.39	1.21	1.21	1.21	2.8776	2.9418	36	Sunny

Monitoring Station : AM5  
Location : Near Wen Chin Tung at the CUHK

Start Date	Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
		Date	Time	Initial	Final		Initial	Final		Initial	Final		
06/09/06	17:45	07/09/06	17:54	5905.65	5929.80	24.15	0.98	0.98	0.98	2.9033	2.9533	35	Sunny
12/09/06	16:30	13/09/06	16:11	5929.80	5953.11	23.31	1.27	1.27	1.27	2.9103	2.9984	50	Cloudy
18/09/06	09:25	19/09/06	09:58	5953.11	5977.66	24.55	0.99	0.99	0.99	2.8512	2.9314	55	Cloudy
23/09/06	15:15	24/09/06	15:35	5959.66	5983.75	24.09	0.96	0.96	0.96	2.8959	2.9442	35	Sunny
29/09/06	09:15	30/09/06	09:44	5983.76	6007.99	24.23	0.99	0.99	0.99	2.8714	2.9488	54	Sunny



### Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1 (HKIB Staff Accommodation)

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/09/06	10:45	11:45	65	496	184	Sunny
05/09/06	11:00	12:00	60	453	182	Sunny
07/06/06	13:46	14:46	112	368	158	Cloudy
09/09/06	09:30	10:30	57	588	165	Cloudy
12/09/06	10:45	11:45	55	576	159	Cloudy
14/09/06	14:20	15:20	97	336	143	Rainy
16/09/06	10:00	11:00	86	282	136	Cloudy
19/09/06	13:02	14:02	82	275	148	Sunny
21/09/06	10:10	11:10	75	316	134	Sunny
23/09/06	09:05	10:05	79	325	137	Sunny
26/09/06	09:40	10:40	88	333	137	Sunny
28/09/06	13:00	14:00	64	487	168	Sunny
30/09/06	08:40	09:40	105	345	170	Cloudy

Monitoring Station : AM3 – Cheung Shue Tan Village (near the outer building, a temple)

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/09/06	13:15	14:15	56	357	149	Sunny
05/09/06	13:05	14:05	46	350	145	Sunny
07/06/06	15:06	16:06	96	322	127	Cloudy
09/09/06	14:48	15:48	38	296	111	Cloudy
12/09/06	13:02	14:02	40	299	116	Cloudy
14/09/06	08:50	09:50	84	310	117	Rainy
16/09/06	13:00	14:00	97	341	121	Cloudy
19/09/06	14:15	15:15	94	316	145	Sunny
21/09/06	14:20	15:20	84	330	140	Sunny
23/09/06	10:28	11:28	82	297	135	Sunny
26/09/06	11:00	12:00	64	284	117	Sunny
28/09/06	16:15	17:15	58	358	110	Sunny
30/09/06	10:30	11:30	80	288	156	Cloudy

**Summary of 1-hr TSP Monitoring Results**

Monitoring Station : AM5 – Near Wen Chih Tang at the CUHK

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/09/06	14:30	15:30	59	420	163	Sunny
05/09/06	14:15	15:15	52	397	153	Sunny
07/06/06	16:20	17:20	101	340	139	Cloudy
09/09/06	15:30	16:30	42	337	120	Cloudy
12/09/06	16:45	17:45	45	341	125	Cloudy
14/09/06	10:10	11:10	92	322	133	Rainy
16/09/06	14:15	15:15	92	325	148	Cloudy
19/09/06	13:38	14:38	101	346	160	Sunny
21/09/06	15:55	16:55	70	307	122	Sunny
23/09/06	14:01	15:01	75	312	121	Sunny
26/09/06	15:50	16:50	70	309	125	Sunny
28/09/06	08:30	09:30	55	429	136	Sunny
30/09/06	13:30	14:30	88	309	158	Cloudy

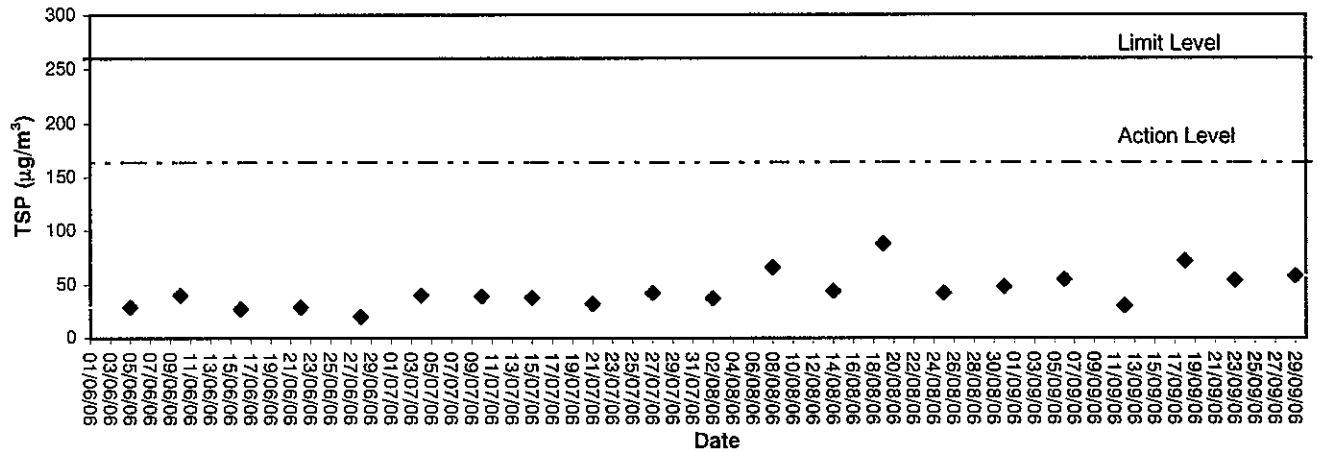


## **Appendix B3**

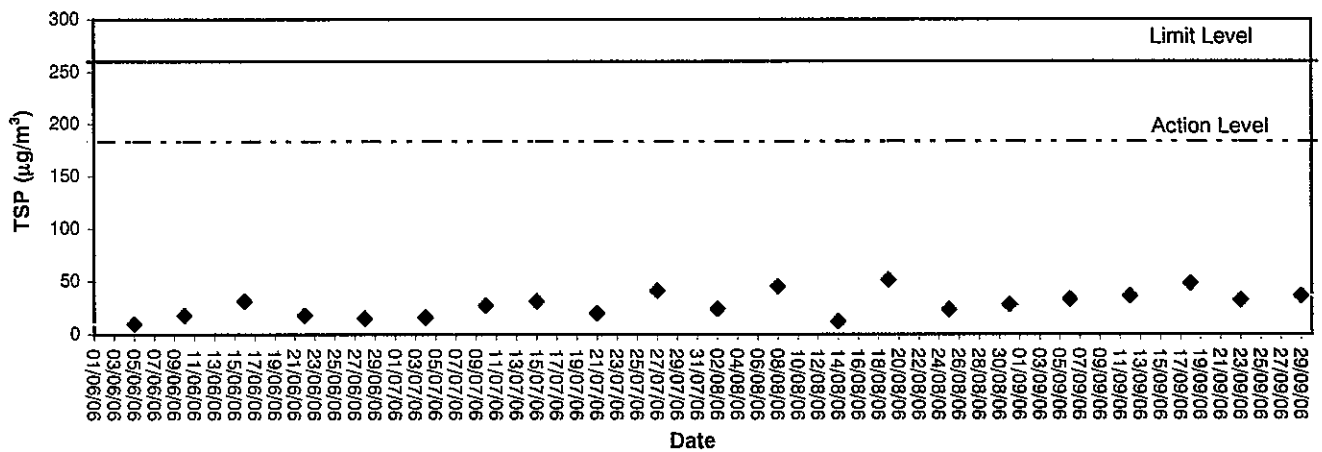
### **Graphical Plots of Air Quality Monitoring Data**



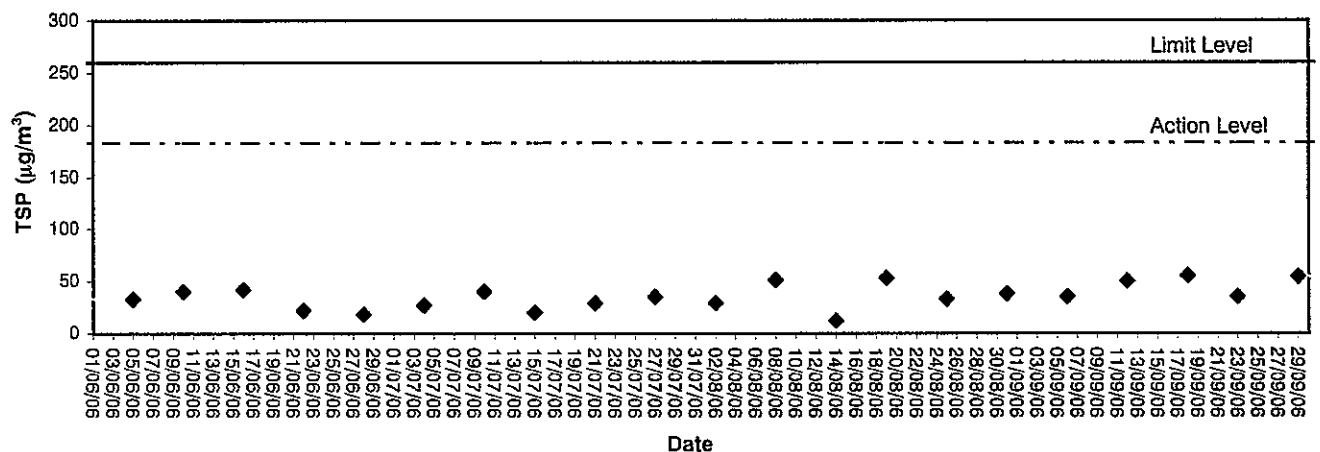
24-hour TSP level at AM1 (HKIB Staff Accommodation)



24-hour TSP level at AM3A (Cheung Shue Tan in front of Man Kee Store)

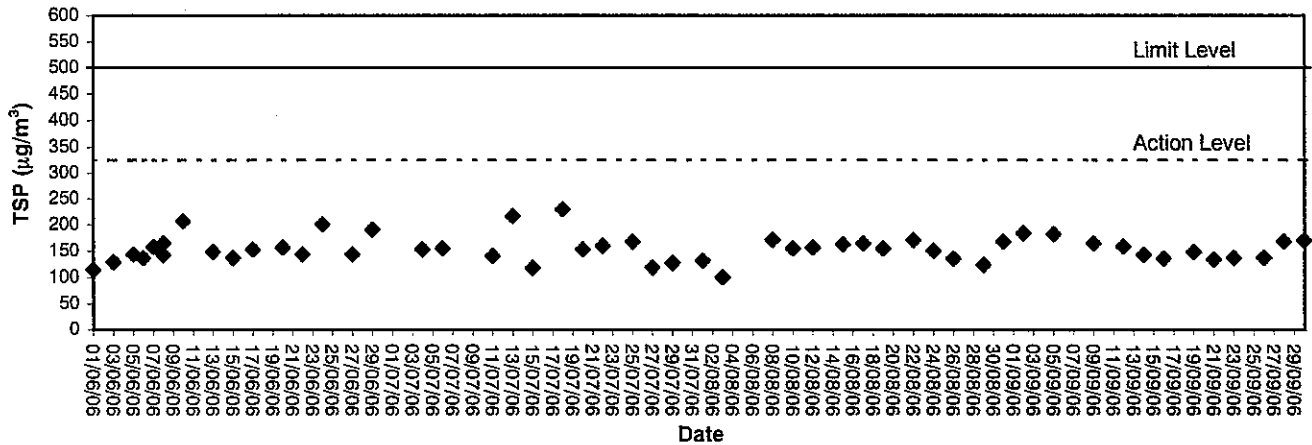


24-hour TSP level at AM5 (Wen Chih Tang at the CUHK)

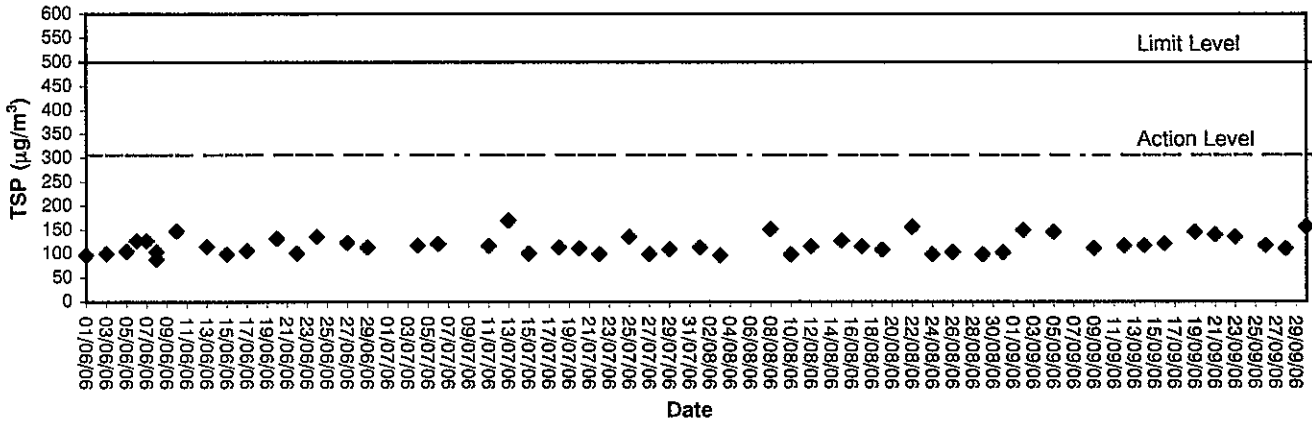




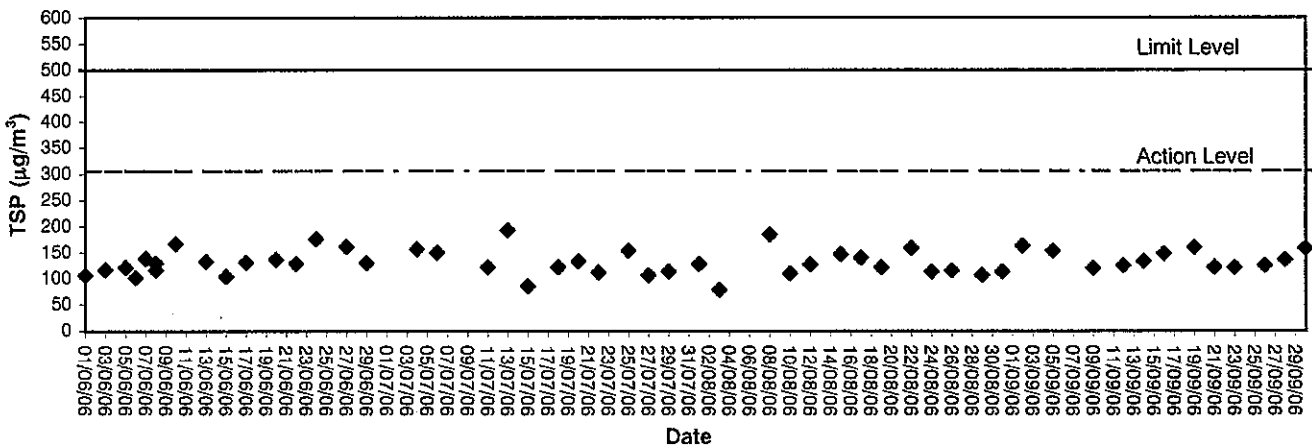
1-hour TSP level at AM1, HKIB Staff Accommodation



1-hour TSP level at AM3, Cheung Shue Tan Village  
(near the outer building, a temple)



1-hour TSP level at AM5 Wen Chih Tang at the CUHK





## **Appendix C1**

### **Calibration Certificates for Noise Monitoring Equipments**



# Calibration Certificate

Certificate No. **61398**

Page 1 of 3 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q60555

**Date of receipt :** 29-Mar-06

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00110024

## Test Conditions

**Date of Test :** 4-Apr-06

**Supply Voltage :** -

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : Z01.

## Test Results

All results were within the IEC 651 Type 1 and IEC 804 Type 1 specification.

The results are shown in the attached page(s).

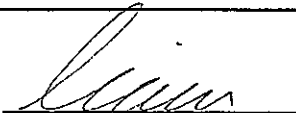
Test equipment used:

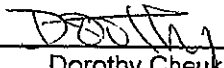
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Function Generator	C051022	21-Mar-07	HKGSCL
S024	Calibrator	S41431	22-May-06	PRC-NIM

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

**Calibrated by :**   
P.F.Wong

**Approved by :**   
Dorothy Cheuk

**Date:** 4-Apr-06



# Calibration Certificate

Certificate No. 61398

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.0	93.8
		Slow		93.8
	L <sub>C</sub>	Fast		93.8
		L <sub>p</sub>		Fast
30 - 120	L <sub>A</sub>	Fast	94.0	93.8
		Slow		93.7
	L <sub>C</sub>	Fast		93.8
		L <sub>p</sub>		Fast
30 - 120	L <sub>A</sub>	Fast	113.9	113.8
		Slow		113.7
	L <sub>C</sub>	Fast		113.8
		L <sub>p</sub>		Fast

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.2$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.01$  dB





# Calibration Certificate

Certificate No. 61398

Page 3 of 3 Pages

### 3. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.5	- 39.4 dB, $\pm 1.5$ dB
63 Hz	- 26.2	- 26.2 dB, $\pm 1.5$ dB
125 Hz	- 16.2	- 16.1 dB, $\pm 1$ dB
250 Hz	- 8.8	- 8.6 dB, $\pm 1$ dB
500 Hz	- 3.3	- 3.2 dB, $\pm 1$ dB
1 kHz	0.0 (Ref.)	0 dB, $\pm 1$ dB
2 kHz	+ 1.2	+ 1.2 dB, $\pm 1$ dB
4 kHz	+ 1.1	+ 1.0 dB, $\pm 1$ dB
8 kHz	- 1.2	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.7	- 6.6 dB, + 3 dB ~ $\infty$

Uncertainty :  $\pm 0.1$  dB

### 4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.8	$\pm 0.5$ dB
1/10 <sup>2</sup>	40.0	40.0	
1/10 <sup>3</sup>	40.0	40.0	$\pm 1.0$ dB
1/10 <sup>4</sup>	40.0	40.0	

Uncertainty :  $\pm 0.1$  dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 000 hPa.

----- END -----



# Calibration Certificate

Certificate No. **61399**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q60555

**Date of receipt :** 29-Mar-06

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10644871

## Test Conditions

**Date of Test :** 4-Apr-06

**Supply Voltage :** -

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

## Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	53024	7-Jul-06	PRC-NIM
S024	Calibrator	S41431	22-May-06	PRC-NIM
S041	Universal Counter	53972	26-Aug-06	HKGSCS

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).  
The test results apply to the above Unit-Under-Test only

**Calibrated by :** 

P.F.Wong

**Approved by :** 

Dorothy Cheuk

**Date:** 4-Apr-06

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8601 Fax: 2425 8646

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# Calibration Certificate

Certificate No. 61399

Page 2 of 2 Pages

Results :

## 1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value		Mfr's Spec.
	Before Adjust.	After Adjust.	
94 dB	94.7	94.2	$\pm 1$ dB

Uncertainty :  $\pm 0.2$  dB

## 2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.984 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

## 3. Level Stability : 0.0 dB

Uncertainty :  $\pm 0.01$  dB

## 4. Total Harmonic Distortion : $< 0.3$ %

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. The above measured values are the mean of 3 measurement.

4. Atmospheric Pressure : 1 000 hPa

----- END -----



## **Appendix C2**

### **Noise Monitoring Results**

## Day-time Noise Monitoring

### Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
05/09/06	11:02	61.9	65.4	59.9	1.6	Sunny
12/09/06	10:50	61.8	64.6	58.8	1.2	Cloudy
19/09/06	13:08	61.4	64.1	58.3	1.0	Sunny
26/09/06	09:35	52.5	55.6	49.4	1.5	Sunny

### Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
05/09/06	08:15	59.1	62.9	55.2	1.2	Sunny
12/09/06	11:08	59.2	62.1	56.3	1.0	Cloudy
19/09/06	18:45	59.8	62.8	57.0	0.6	Sunny
26/09/06	13:10	53.4	56.5	51.6	1.3	Sunny

### Mon Monitoring Location: NM3 (Cheung Shue Tan Village)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
05/09/06	13:16	55.1	59.5	51.3	1.0	Sunny
12/09/06	13:10	56.7	59.9	54.0	0.9	Cloudy
19/09/06	14:20	58.3	61.6	55.8	1.1	Sunny
26/09/06	11:10	54.9	59.3	52.5	1.1	Sunny

### Monitoring Location: NM8 (Near Wen Chih Tang at the CUHK)

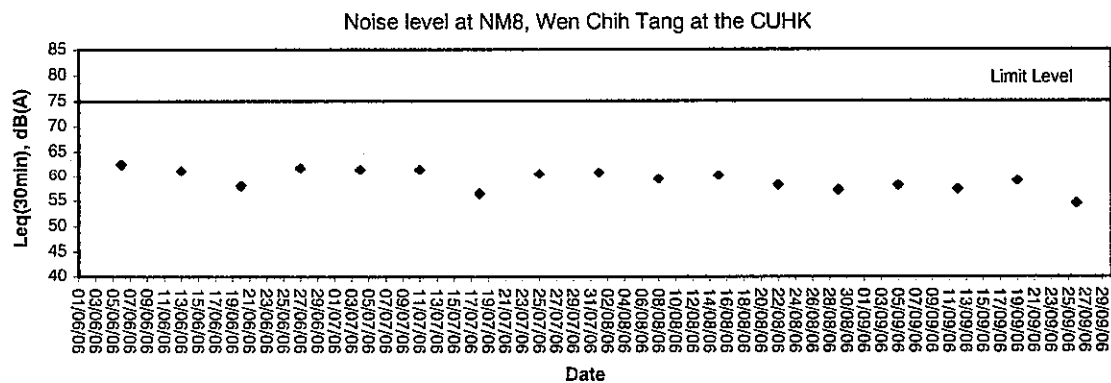
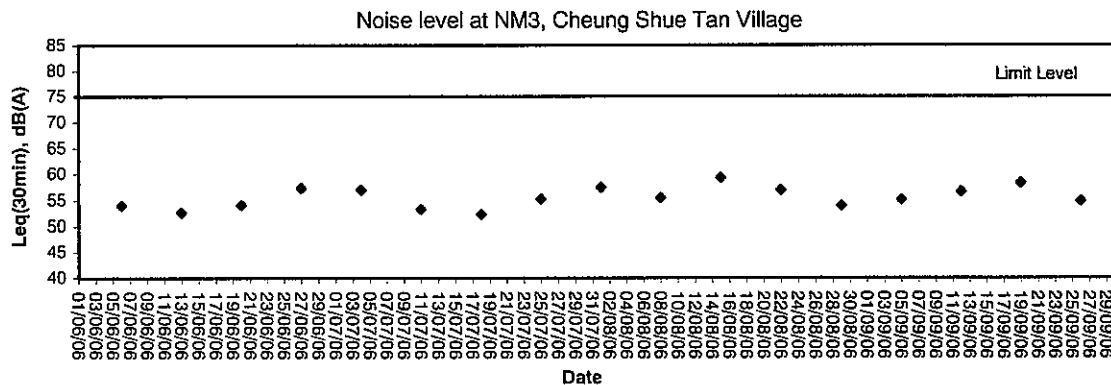
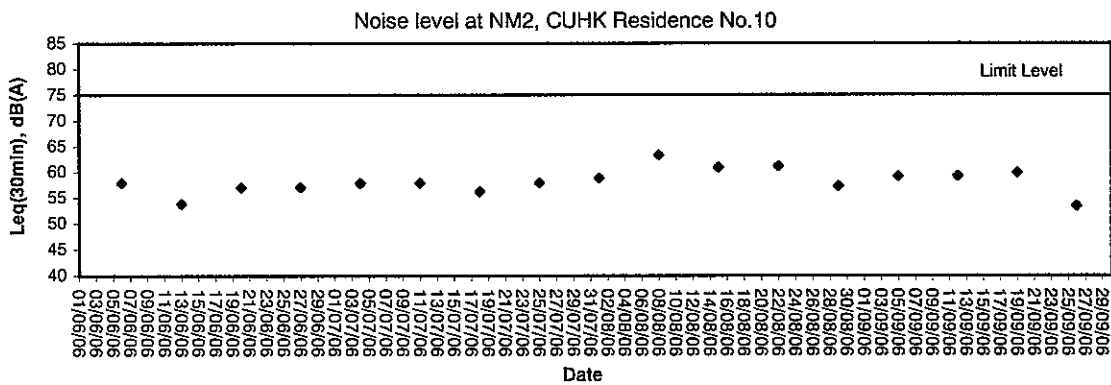
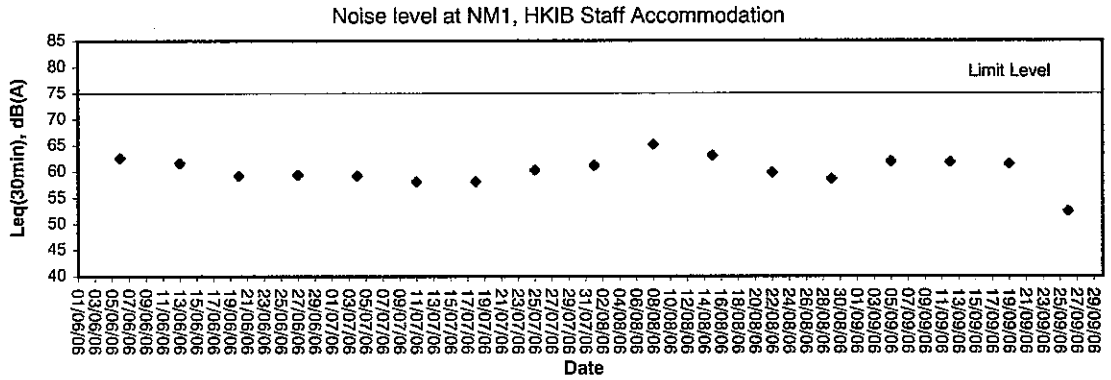
Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq(30min)</sub>	L10	L90		
05/09/06	14:20	58.0	60.1	54.3	1.5	Sunny
12/09/06	16:50	57.2	60.1	54.9	1.1	Cloudy
19/09/06	13:42	59.0	62.2	56.0	0.7	Sunny
26/09/06	15:55	54.4	57.3	52.8	1.3	Sunny



## **Appendix C3**

### **Graphical Plots of Noise Monitoring Data**

## Noise Monitoring (Day-time)





## **Appendix D**

### **Weather Condition**





## Weather Condition

Date	Rainfall (mm)	Max. Temp (°C)	Min. Temp. (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (m/s)
01/09/06	-	32.8	27.8	76	W	<5
02/09/06	Trace	32.5	28.7	78	W	<5
03/09/06	Trace	30.3	28.3	81	W	<5
04/09/06	0.6	30.4	26.6	80	SW	<5
05/09/06	3.2	31.0	26.8	78	SW	<5
06/09/06	4.9	30.3	25.6	81	SW	<5
07/09/06	35.1	27.7	04.7	87	W	<5
08/09/06	11.8	29.3	25.9	85	W	<5
09/09/06	92.4	28.2	23.1	90	N	<5
10/09/06	3.5	26.6	21.9	82	N	<5
11/09/06	Trace	26.2	22.5	74	N	<5
12/09/06	5.0	23.5	20.7	88	N	<5
13/09/06	248.3	25.4	22.2	98	E	<5
14/09/06	12.9	27.8	24.6	96	E	<5
15/09/06	1.0	29.3	24.9	84	N	<5
16/09/06	Trace	28.0	25.1	76	N	<5
17/09/06	-	30.1	24.1	64	N	<5
18/09/06	-	29.4	24.1	71	N	<5
19/09/06	-	29.3	24.3	75	E	<5
20/09/06	-	29.9	24.0	72	E	<5
21/09/06	-	29.6	24.4	70	E	<5
22/09/06	-	29.3	25.1	74	E	<5
23/09/06	-	30.4	25.0	68	E	<5
24/09/06	0.9	26.7	24.2	78	E	<5
25/09/06	Trace	29.5	26.3	76	E	<5
26/09/06	-	29.4	24.5	74	E	<5
27/09/06	-	29.0	24.8	75	E	<5
28/09/06	-	29.2	24.4	75	E	<5
29/09/06	-	31.8	24.7	73	E	<5
30/09/06	0.6	28.6	25.3	76	E	<5

Remark: Data of wind speed and wind direction were extracted from Hong Kong Observatory (Shatin Station).



## **Appendix E**

### **Event-Action Plans**



## Event / Action Plan for Air Quality

EVENT	ACTION			CNOTRACTOR
	ET Leader	IC(E)	ER	
<p>Action Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two or more consecutive samples</p>	<p>1. Identify source</p> <p>2. Inform IC(E) and ER</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>1. Identify source</p> <p>2. Inform IC(E) and ER</p> <p>3. Repeat measurement to confirm findings</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Discuss with IC(E) and Contractor on remedial actions required</p> <p>6. If exceedance continuous, arrange meeting with IC(E) and ER</p> <p>7. If exceedance stops, cease additional monitoring</p>	<p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>1. Checking monitoring data submitted by ET</p> <p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposed remedial measures</p> <p>5. Supervisor implementation of remedial measures</p>	<p>1. Notify Contractor</p> <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. Ensure remedial measures properly implemented</p>	<p>1. Rectify any unacceptable practice</p> <p>2. Amend working methods if possible</p> <p>1. Submit proposals for remedial action to IC(E) within 3 working days of notification</p> <p>2. Implement the agreed proposals</p> <p>3. Amend proposal if possible</p>
<p>Limit Level</p> <p>1. Exceedance of one sample</p> <p>2. Exceedance for two or more consecutive samples</p>	<p>1. Identify source</p> <p>2. Inform ER and EPD</p> <p>3. Repeat measurement to confirm finding</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</p> <p>1. Notify IC(E), ER, Contractor and EPD</p> <p>2. Identify source</p> <p>3. Repeat measurement to confirm findings</p> <p>4. Increase monitoring frequency to daily</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</p> <p>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken and ER to discuss the remedial action to</p> <p>8. If exceedance stops, cease additional monitoring</p>	<p>1. Check monitoring data submitted by ET</p> <p>2. Check Contractor's working method.</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise the ER on the effectiveness of the proposal remedial measures</p> <p>5. Supervisor implementation of remedial measures</p> <p>1. Discuss amongst ER, ET, and Contractor on potential remedial actions</p> <p>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</p> <p>3. Supervise the implementation of remedial measures</p>	<p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. Ensure remedial measures properly implemented</p> <p>1. Confirm receipt of notification of failure in writing</p> <p>2. Notify Contractor</p> <p>3. In consultation with the IC(E), agreed measures to be implemented</p> <p>4. Ensure remedial measures properly implemented</p> <p>5. If exceedance continues, consider what portion of this work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>1. Take immediate action to avoid further exceedance</p> <p>2. Submit proposal for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Amend proposal if appropriate</p> <p>1. Take immediate action to avoid further exceedance</p> <p>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</p> <p>3. Implement the agreed proposals</p> <p>4. Resubmit proposals if possible still not under control</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

## Event / Action Plan for Construction Noise

EVENT	ACTION			CNOTRACTOR
	ET Leader	IC(E)	ER	
Action Level	1. Notify IC(E) and Contractor 2. Carry out investigation 3. Report the results of investigation to the IC(E) and Contractor 4. Discuss with the Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the analyzed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposal to IC(E) 2. Implement noise mitigation proposals
Limit Level	1. Notify IC(E), ER, and Contractor 2. Identify source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IC(E), ER and EPD the causes & action taken for the exceedances 7. Assess effectiveness of Contractor's remedial action and keep IC(E), EPD and ER informed to the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) 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 ER until the exceedance is abated



## **Appendix F**

### **Construction Programme**

Item ID	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
PC0100	Contract Award	0	100	10JUN04 A	10JUN04 A										
PC0200	Project Commencement Date	0	100	20JUN04 A	20JUN04 A										
<b>Session Data</b>															
PD0100	Zone ZA1, ZA2 & ZU2	0	100	20JUN04 A	20JUN04 A										
PD0200	Zone ZC.ZD.ZI8.ZS1.ZU & ZU1	0	100	20JUN04 A	20JUN04 A										
PD0210	Part of Zone ZL1, ZM, ZJ, ZK, ZR, ZR1 & ZS	0	100	20JUN04 A	20JUN04 A										
PD0220	Remaining Zone ZJ	0	100	24SEP04 A	24SEP04 A										
PD0230	Remaining Zone ZR, ZR1 & ZS	0	100	27SEP04 A	27SEP04 A										
PD0240	Part of Zone ZL1	0	100	15MAR05 A	15MAR05 A										
PD0250	Remaining Zone ZL1	0	100	09SEP05 A	09SEP05 A										
PD0300	Zone ZG2 & ZJ2	0	100	18AUG04 A	18AUG04 A										
PD0310	Part of Zone ZY & ZK	0	100	18AUG04 A	18AUG04 A										
PD0320	Remaining Zone ZY	0	100	17SEP04 A	17SEP04 A										
PD0330	Remaining Zone ZK	0	100	08DEC04 A	08DEC04 A										
PD0400	Zone ZB & ZF	0	70	03SEP05 *	03SEP05 *										
PD0410	Part of Zone ZE	0	100	18JUN05 A	18JUN05 A										
PD0420	Remaining Zone ZE	0	280	03SEP05 *	03SEP05 *										
PD0600	Zone ZG & ZG3	0	820d	03SEP05 *	03SEP05 *										
PD0600	Part of Zone ZG1	0	100	20JAN05 A	20JAN05 A										
PD0610	Zone ZU3	0	100	04OCT04 A	04OCT04 A										
PD0620	Remaining Zone ZG1	0	100	02APR05 A	02APR05 A										
PD0700	Zone ZP	0	100	02NOV04 A	02NOV04 A										
PD0710	Part of Zone ZH	0	100	17SEP04 A	17SEP04 A										
PD0720	Part of Zone ZH	0	100	14MAR05 A	14MAR05 A										
PD0730	Part of Zone ZH	0	100	08MAR05 A	08MAR05 A										
PD0740	Remaining Zone ZH	0	820d	03SEP05 *	03SEP05 *										
PD0750	Part of Zone ZH	0	100	20JUN05 A	20JUN05 A										
PD0800	Zone ZJ1	0	100	14MAR05 A	14MAR05 A										
PD0810	Part of Zone ZH	0	100	14MAR05 A	14MAR05 A										
PD0820	Remaining Zone ZH	0	100	15MAR05 A	15MAR05 A										
PD0830	Zone ZJ5	0	100	15APR05 A	15APR05 A										
PD0800	Zone ZJ3 & ZJ4	0	100	09NOV04 A	09NOV04 A										
PD1000	Part of Zone ZL2	0	100	15MAR05 A	15MAR05 A										
PD1010	Remaining Zone ZL2	0	820d	03SEP05 *	03SEP05 *										
PD1100	Zone ZQ & ZQ1	0	100	26JUL04 A	26JUL04 A										
PD1200	Zone ZT	0	130d	01FEB00 *	01FEB00 *										
PD1210	Part of Zone ZT1	0	100	25JAN05 A	25JAN05 A										
PD1220	Remaining Zone ZT1	0	1420	01FEB00 *	01FEB00 *										
PD1230	Zone ZT3	0	100	20AUG05 A	20AUG05 A										
PD1300	Zone ZT2	0	100	25JAN05 A	25JAN05 A										
PD1400	Demolish Existing Drainage in Zone ZY	0	-4d	03SEP05 *	03SEP05 *										

**Legend**

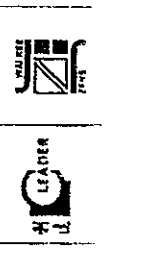
- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

**Legend Completion**

- 10JUN04
- 20OCT07
- 23SEP05
- 11OCT05
- 1A

Primavera Systems, Inc.  
 Leader - Wal Keo (C&T) Joint Venture  
 TP37/03 - Revised Works Programme - RP04

Contract Award  
 Project Commencement Date  
 Zone ZA1, ZA2 & ZU2  
 Zone ZC.ZD.ZI8.ZS1.ZU & ZU1  
 Part of Zone ZL1, ZM, ZJ, ZK, ZR, ZR1 & ZS  
 Remaining Zone ZJ  
 Remaining Zone ZR, ZR1 & ZS  
 Part of Zone ZL1  
 Remaining Zone ZL1  
 Zone ZG2 & ZJ2  
 Part of Zone ZY & ZK  
 Remaining Zone ZY  
 Remaining Zone ZK  
 Part of Zone ZG1  
 Remaining Zone ZG1  
 Zone ZU3  
 Zone ZP  
 Part of Zone ZH  
 Part of Zone ZH  
 Part of Zone ZH  
 Zone ZJ1  
 Part of Zone ZM  
 Remaining Zone ZM  
 Zone ZJ4  
 Part of Zone ZL2  
 Zone ZQ & ZQ1  
 Part of Zone ZT1  
 Zone ZT  
 Remaining Zone ZT1  
 Zone ZT3  
 Demolish Existing Drainage in Zone ZY









ID	Description	Start	Finish	Duration	% Complete
SUASMS1300	CEDO Approval of A.D.	28/12/04	31/03/05	31/03/05	100
SUASSJ0100	Submit & Approve Preliminary Design	18/AUG/04	28/SEP/04	10/AUG/04	28/SEP/04
SUASSJ0200	Submit Preliminary Design to ACABAS	30/SEP/04	04/OCT/04	04/OCT/04	04/OCT/04
SUASSJ0300	ACABAS Approval	19/OCT/04	19/OCT/04	19/OCT/04	19/OCT/04
SUASSJ0400	Aesthetic Review	12/JAN/05	20/OCT/04	20/OCT/04	12/JAN/05
SUASSJ0500	ACABAS Submission (Landscapes)	23/MAY/05	18/MAY/05	18/MAY/05	23/MAY/05
SUASSJ0600	Detail Design	27/MAY/05	27/MAY/05	27/MAY/05	27/MAY/05
SUASSJ0700	Submit Detail Design to the Engineer	28/MAY/05	28/MAY/05	28/MAY/05	28/MAY/05
SUASSJ0800	Engineer Approval	28/JUL/05	28/JUL/05	28/JUL/05	28/JUL/05
SUASSJ0900	CEDO Approval of A.D.	28/JUL/05	28/JUL/05	28/JUL/05	28/JUL/05
<b>Utilities</b>					
<b>Contractor's Site Accommodation</b>					
PRCS0100	Mobilization	10/JUL/04	10/JUL/04	10/JUL/04	10/JUL/04
PRCS0200	Erect Contractor Site Office	12/JUL/04	12/JUL/04	12/JUL/04	12/JUL/04
<b>Preliminary Works</b>					
PRPR0300	Arrange ULG Meeting	16/JUL/04	26/JUN/04	26/JUN/04	16/JUL/04
PRPR0400	Arrange TMIG Meeting	23/JUL/04	26/JUN/04	26/JUN/04	23/JUL/04
PRPR0500	Tree Survey	08/AUG/04	28/JUN/04	28/JUN/04	08/AUG/04
PRPR0600	Engineer Approval of Tree Survey	07/AUG/04	07/AUG/04	07/AUG/04	07/AUG/04
PRPR0700	Tree Transplant	31/AUG/04	31/AUG/04	31/AUG/04	31/AUG/04
PRPR1000	Tree Felling	30/AUG/04	30/AUG/04	30/AUG/04	30/AUG/04
PRPR1100	Procure Third Party Insurance	10/JUN/04	10/JUN/04	10/JUN/04	28/JUN/04
PRPR1300	Erect Project Sign Board	20/AUG/04	20/AUG/04	20/AUG/04	12/MAY/05
PRPR1400	1st Site Safety & Environmental Committee Meeting	20/JUN/04	20/JUN/04	20/JUN/04	20/JUL/04
PRPR1500	1st SSEM Meeting	27/JUL/04	26/JUN/04	26/JUN/04	27/JUL/04
PRPR1600	Propose Location of Temporary Landfill Facilities	23/JUL/04	10/JUN/04	10/JUN/04	23/JUL/04
PRPR1700	Engineer Approval of the Temp Landfill Location	17/AUG/04	27/JUL/04	27/JUL/04	17/AUG/04
PRPR1800	Provide Temp Landfill Facilities	18/AUG/04	18/AUG/04	18/AUG/04	18/AUG/04
PRPR1810	Engineer Review Drooping Plan to EPD	08/FEB/05	08/FEB/05	08/FEB/05	08/FEB/05
PRPR1900	Apply Dumping Permit	08/JUL/04	10/JUN/04	10/JUN/04	08/JUL/04
PRPR2000	Approval of Dumping Permit	06/JUL/04	19/MAR/05	06/JUL/04	19/MAR/05
PRPR2100	Propose Accurate Position Control at Disposal	28/OCT/04	28/OCT/04	28/OCT/04	28/OCT/04
PRPR2200	Engineer Approval of Proposal	28/DEC/04	28/DEC/04	28/DEC/04	28/DEC/04
PRPR2300	Provide Water Quality Monitoring Equipment	11/OCT/04	10/JUN/04	10/JUN/04	11/OCT/04
PRPR2400	Initial Sounding Plan	16/SEP/04	16/SEP/04	16/SEP/04	16/SEP/04
PRPR2500	Ordering of Precast Concrete Pipes	10/JUL/04	10/JUL/04	10/JUL/04	10/JUL/04
PRPR2600	Ordering of DI Pipes and Fittings	05/FEB/05	05/FEB/05	05/FEB/05	05/FEB/05
PRPR2700	Concrete Trial Mix	23/JUL/04	23/JUL/04	23/JUL/04	23/JUL/04
PRPR2800	Manufacture & Delivery of Sewall Blocks	15/DEC/05	15/DEC/05	15/DEC/05	15/DEC/05
<b>Utilities</b>					
MSS50100	Complete Laying of Utilities	0	0	00/JAN/06	31/JUL/05
<b>Section 7</b>					

Mobilization  
 Erect Contractor Site Office  
 Arrange ULG Meeting  
 Arrange TMIG Meeting  
 Tree Survey  
 Engineer Approval of Tree Survey  
 Tree Transplant  
 Tree Felling  
 Procure Third Party Insurance  
 Erect Project Sign Board  
 1st Site Safety & Environmental Committee Meeting  
 1st SSEM Meeting  
 Propose Location of Temporary Landfill Facilities  
 Engineer Approval of the Temp Landfill Location  
 Provide Temp Landfill Facilities  
 Engineer Review Drooping Plan to EPD  
 Apply Dumping Permit  
 Approval of Dumping Permit  
 Propose Accurate Position Control at Disposal  
 Engineer Approval of Proposal  
 Provide Water Quality Monitoring Equipment  
 Initial Sounding Plan  
 Ordering of Precast Concrete Pipes  
 Ordering of DI Pipes and Fittings  
 Concrete Trial Mix  
 Manufacture & Delivery of Sewall Blocks  
 Complete Laying of Utilities

CEDO Approval of A.D.  
 ACABAS Submission (Landscapes)  
 Detail Design  
 Submit Detail Design to the Engineer  
 Engineer Approval  
 CEDO Approval of A.D.

Submit & Approve Preliminary Design  
 Submit Preliminary Design to ACABAS  
 ACABAS Approval  
 Aesthetic Review  
 ACABAS Submission (Landscapes)  
 Detail Design  
 Submit Detail Design to the Engineer  
 Engineer Approval  
 CEDO Approval of A.D.

Mobilization  
 Erect Contractor Site Office  
 Arrange ULG Meeting  
 Arrange TMIG Meeting  
 Tree Survey  
 Engineer Approval of Tree Survey  
 Tree Transplant  
 Tree Felling  
 Procure Third Party Insurance  
 Erect Project Sign Board  
 1st Site Safety & Environmental Committee Meeting  
 1st SSEM Meeting  
 Propose Location of Temporary Landfill Facilities  
 Engineer Approval of the Temp Landfill Location  
 Provide Temp Landfill Facilities  
 Engineer Review Drooping Plan to EPD  
 Apply Dumping Permit  
 Approval of Dumping Permit  
 Propose Accurate Position Control at Disposal  
 Engineer Approval of Proposal  
 Provide Water Quality Monitoring Equipment  
 Initial Sounding Plan  
 Ordering of Precast Concrete Pipes  
 Ordering of DI Pipes and Fittings  
 Concrete Trial Mix  
 Manufacture & Delivery of Sewall Blocks  
 Complete Laying of Utilities

LEADER  
 PREPARE TO LEAD

TP37/03 - Revised Works Programme - RP04  
 Leader - Wai Kee (C&T) Joint Venture  
 Primavera Systems, Inc.

AS ID	Description	Order Div	Total Div	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
MSS70100	Complete Connection for ArchSD's Works	0	-173d	0	20JAN08			31JUL08*
MSS70200	Commence Toilet & Pavilion by ASD's Contractor	0		100	28DEC04 A			28DEC04 A
MSS70300	Complete Toilet & Pavilion by ASD's Contractor	0	3d	0		02NOV05		06NOV05*

Commence Toilet & Pavilion by ASD's Contractor  
 Complete Toilet & Pavilion by ASD's Contractor  
 Complete Connection for ArchSD's Works  
 Commence ASD's Works  
 Complete Connection of Utilities  
 Complete ASD's Works

**Issuance Order / Instruction**

AS ID	Description	Order Div	Total Div	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
MSS80100	Complete Connection of Utilities	0	-21d	0	11MAY08			20APR09*
MSS90200	Commence ASD's Works	0	-88d	0	28SEP05*			22JUL05
MSS90300	Complete ASD's Works	0	-67d	0	27SEP06			22JUL08*

AS ID	Description	Order Div	Total Div	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
V00010	Issue VO1047A (Section 5)	0	100	22MAR05 A				22MAR05 A
V00020	Issue VO1051 (Section 5)	0	100	12APR05 A				12APR05 A
V00030	Issue VO1068 (Section 7)	0	100	03JUN05 A				03JUN05 A
V00040	Issue VO1055A (Section 7 & 11)	0	100	07JUN05 A				07JUN05 A
V00050	Issue VO1065 (Section 8 & 12)	0	100	07JUN05 A				07JUN05 A
V00060	Issue VO1073 (Section 7)	0	100	23JUN05 A				23JUN05 A
V00070	Issue VO1057 (Section 7 & 8)	0	100	27JUN05 A				27JUN05 A
V00080	Issue VO1053B (Section 2)	0	100	27JUN05 A				27JUN05 A
V00090	Issue VO1070 (Section 7)	0	100	05JUL05 A				05JUL05 A
V00100	Issue VO1030E (Section 7)	0	100	11JUL05 A				11JUL05 A
V00110	Issue VO1058A (Section 7)	0	100	21JUL05 A				21JUL05 A
V00120	Issue VO1063A (Section 7)	0	100	28JUL05 A				28JUL05 A
V00130	Issue VO1068 (Section 7 & 8)	0	100	28JUL05 A				28JUL05 A
V00140	Issue VO1063 (Section 7)	0	100	28AUG05 A				28AUG05 A
V00150	Issue VO1064 (Section 5)	0	100	30AUG05 A				30AUG05 A
V00160	Issue VO1063 - Supplement Ref. 2506 (Section 7)	0	100	06SEP05 A				06SEP05 A
V00170	Issue VO1069 (Section 6)	0	100	13SEP05 A				13SEP05 A

**Section 1**  
Watermain Area

AS ID	Description	Order Div	Total Div	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A1AMW0100	Remove Ext. Surcharge Mound	22	34d	0	24OCT06			17NOV06
A1AMW0200	Decide Exact Location of Manholes & Catchpits	1	56d	0	06SEP06			30SEP06
A1AMW0300	S606 - Existing Box Culvert	43	66d	0	12OCT06			30NOV06
A1AMW0400	S670 - Existing Box Culvert	43	56d	0	01DEC06			21JAN07
A1AMW0500	S678 - Existing Box Culvert	38	34d	0	28DEC06			09FEB07
A1AMW0600	3000C at Planting Area (South Section)	33	34d	0	18NOV06			28DEC06
A1AMW0700	3000C at Planting Area (North Section)	30	72d	0	18MAR06			22APR06
A1AMW0800	3750C at Planting Area (South Section)	24	67d	0	03MAR06			28APR06
A1AMW0900	3750C at Landing Steps Area	27	56d	0	20FEB06			22MAR06
A1AMW1000	3750C at Landing Steps Area	45	62d	0	23JAN06			17MAR06
A1AMW1100	3750C at Landing Steps Area	24	34d	0	07MAR06			02APR06
A1AMW1200	Watermain - WP6-1 to M9 (South Section)	15	87d	0	18MAR06			05APR06
A1AMW1300	Watermain - WP7-3 to M7 (North Section)	15	76d	0	03MAR06			16APR06
A1AMW1400	Install Public Lighting Post	6	84d	0	18MAR06			27MAR06

**Public Lighting Post**

AS ID	Description	Order Div	Total Div	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
A1AMW1500	Watermain - WP6-1 to M9 (South Section)	15	87d	0	18MAR06			05APR06
A1AMW1600	Watermain - WP7-3 to M7 (North Section)	15	76d	0	03MAR06			16APR06
A1AMW1700	Install Public Lighting Post	6	84d	0	18MAR06			27MAR06

Watermain - WP6-1 to M9 (South Section)  
 Watermain - WP7-3 to M7 (North Section)  
 Install Public Lighting Post

Remove Ext. Surcharge Mound  
 Decide Exact Location of Manholes & Catchpits  
 S606 - Existing Box Culvert  
 S670 - Existing Box Culvert  
 S678 - Existing Box Culvert  
 3000C at Planting Area (South Section)  
 3000C at Planting Area (North Section)  
 3750C at Planting Area (South Section)  
 3750C at Landing Steps Area  
 3750C at Landing Steps Area (North Section)

JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC  
 JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC  
 JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Job ID: A1AMPK0100  
 Discipline: Construct Dwarf Wall (South Section)  
 Status: Early Start  
 Quantity: 23  
 Units: 726  
 Total: 726  
 Start: 02/28/06  
 Finish: 17/03/06  
 End: 13/06/06

Job ID	Discipline	Status	Quantity	Units	Total	Start	Finish	End
A1AMPK0100	Construct Dwarf Wall (South Section)	Early Start	23	726	726	02/28/06	17/03/06	13/06/06
A1AMPK0200	Construct Dwarf Wall (North Section)	Early Start	21	670	670	07/03/06	30/03/06	20/06/06
A1AMPK0300	Construct Edging Beam (South Section)	Early Start	22	580	580	03/01/06	18/02/06	28/03/06
A1AMPK0400	Construct Edging Beam (North Section)	Early Start	18	340	340	01/02/06	08/03/06	15/04/06
A1AMPK0500	Lighting Drawpit & Cable Duct (South Section)	Early Start	10	750	750	02/28/06	02/03/06	01/06/06
A1AMPK0600	Lighting Drawpit & Cable Duct (North Section)	Early Start	10	480	480	07/03/06	17/03/06	15/05/06
A1AMPQ0100	Paving Block (South Section)	Early Start	40	590	590	03/03/06	10/03/06	10/06/06
A1AMPQ0200	Paving Block (North Section)	Early Start	54	340	340	05/04/06	08/06/06	18/07/06

**Remove Ext Surcharge Mound**

A1CTEA0100  
 16 76  
 0 30SEP05  
 22OCT05  
 10OCT05  
 31OCT05

**Decide Exact Location of Manholes & Catchpits**

A1CTDN0100  
 1 170  
 0 30SEP05  
 30SEP05  
 22OCT05  
 22OCT05

**CLP - 11KV Cable (South Section)**

A1CTUT0100  
 28 110  
 0 02MAY06  
 10MAY06  
 11JUL06  
 18JUL06

**Watermain - 250 & 300 Dia (South Section)**

A1CTUT100  
 35 70  
 0 12DEC06  
 23JAN06  
 20DEC06  
 02FEB06

**Watermain - 250 Dia (North Section)**

A1CTUT200  
 20 50  
 0 24JAN06  
 17FEB06  
 01FEB06  
 23FEB06

**Watermain - Testing and Connection of 300 Dia**

A1CTUT300  
 10 580  
 0 24JAN06  
 13FEB06  
 08APR06  
 24APR06

**Watermain - Testing and Connection of 250 Dia**

A1CTUT400  
 10 350  
 0 18FEB06  
 08MAR06  
 31MAR06  
 18APR06

**Install Public Lighting Post**

A1CTUT1500  
 6 580  
 0 02MAY06  
 10MAY06  
 11JUL06  
 18JUL06

**Construct Dwarf Wall (South Section)**

A1AMPK0100  
 23  
 726  
 0 20FEB06  
 17MAY06  
 17MAY06  
 13JUN06

**Construct Dwarf Wall (North Section)**

A1AMPK0200  
 21  
 670  
 0 07MAR06  
 30MAR06  
 28MAY06  
 20JUN06

**Construct Edging Beam (South Section)**

A1AMPK0300  
 22  
 580  
 0 23JAN06  
 18FEB06  
 03APR06  
 28APR06

**Construct Edging Beam (North Section)**

A1AMPK0400  
 18  
 340  
 0 14FEB06  
 08MAR06  
 25MAR06  
 15APR06

**Lighting Drawpit & Cable Duct (South Section)**

A1AMPK0500  
 10  
 750  
 0 02FEB06  
 02MAR06  
 20MAY06  
 01JUN06

**Lighting Drawpit & Cable Duct (North Section)**

A1AMPK0600  
 10  
 480  
 0 07MAR06  
 17MAR06  
 04MAY06  
 15MAY06

**Paving Block (South Section)**

A1AMPQ0100  
 40  
 590  
 0 23MAR06  
 10MAY06  
 02JUN06  
 10JUL06

**Paving Block (North Section)**

A1AMPQ0200  
 54  
 340  
 0 05APR06  
 08JUN06  
 18MAY06  
 18JUL06

Construct Dwarf Wall (South Section)  
 Construct Dwarf Wall (North Section)  
 Construct Edging Beam (South Section)  
 Construct Edging Beam (North Section)  
 Lighting Drawpit & Cable Duct (South Section)  
 Lighting Drawpit & Cable Duct (North Section)  
 Paving Block (South Section)  
 Paving Block (North Section)

Remove Ext Surcharge Mound  
 Decide Exact Location of Manholes & Catchpits  
 S688 - Existing Box Culvert  
 S981 - Existing Box Culvert  
 S680 - Existing Box Culvert  
 S982 - S986

CLP - 11KV Cable (South Section)  
 CLP - 11KV Cable (North Section)  
 CATV - 2 ways Cable TV Duct (South Section)  
 CATV - 2 ways Cable TV Duct (North Section)  
 CATV - Cable Connection  
 Watermain - 250 & 300 Dia (South Section)  
 Watermain - 250 Dia (North Section)  
 Watermain - Testing and Connection of 300 Dia  
 Watermain - Testing and Connection of 250 Dia  
 Install Public Lighting Post

Construct Dwarf Wall (South Section)  
 Construct Dwarf Wall (North Section)  
 Lay Kerb (South Section)  
 Lay Kerb (North Section)  
 Lighting Drawpit & Cable Duct (South Section)  
 Lighting Drawpit & Cable Duct (North Section)  
 Trim Formation & Lay Subbase (South Section)  
 Trim Formation & Lay Subbase (North Section)  
 Lay Cycle Track Pavement (South Section)  
 Lay Cycle Track Pavement (North Section)  
 Apply Road Marking  
 Erect Signage  
 Install Railing, Fencing & etc

Leader - Wal Keo (C&T) Joint Venture  
 TP37/03 - Revised Works Programme - RP04



ID	Location	Start	Finish	Days	Start	Finish	Days
A2ITMS0100	TTA No. 01 - Sul Cheung St. (S/B Slow Lane)	07MAR06	07MAR06	1	15d	0	13FEB06
A2ITMS0200	TTA No. 02 - Sul Cheung St. (S/B Fast Lane)	17MAY06	17MAY06	1	18d	0	24APR06
A2ITMS0300	TTA No. 03 - Existing Ma Liu Shui Bridge	22JUL06	22JUL06	1	46d	0	27MAY06
A2ITMS0400	TTA No. 04 - Cycle Track	05JUN06	05JUN06	1	5d	0	29MAY06
A2ITMS0500	TTA No. 05 - Sul Cheung St. Roundabout	25SEP06	25SEP06	1	101d	0	27MAY06
A2ITMS0600	TTA No. 06 - Sul Cheung St. Roundabout	20OCT06	20OCT06	1	101d	0	22JUN06
A2ITMS0700	TTA No. 07 - Sul Cheung St. Roundabout	10NOV06	10NOV06	1	101d	0	13JUL06
A2ITMS0800	TTA No. 08 - Sul Cheung St. & EML SB	28AUG06	28AUG06	1	5d	0	21AUG06
A2ITMS0900	TTA No. 09 - Road D1 & Sul Cheung St. R/A	04DEC06	04DEC06	1	1d	0	02DEC06
A2ITMS1000	Implement Permanent Traffic Scheme	20DEC06	20DEC06	1	1d	0	25DEC06

**Quality Management in Sul Cheung Street**

ID	Description	Start	Finish	Days	Start	Finish	Days
A2MRBU0100	Trail Pile	18AUG04	06SEP04	12	100	18AUG04	06SEP04
A2MRBU0200	Liaison with CLP & WSD for Diversion Works	23AUG04	17SEP04	30	100	23AUG04	17SEP04
A2MRBU0300	Submit TTA for Approval	16SEP04	23SEP04	24	100	16SEP04	23SEP04
A2MRBU0400	Implement TTA	09NOV04	09NOV04	1	100	09NOV04	09NOV04
A2MRBU0500	CLP 11KV Cable Diversion	18JAN05	18JAN05	21	100	10JAN05	18JAN05
A2MRBU0610	CLP 132KV Cable Ducts Diversion	28DEC04	08JAN05	11	100	28DEC04	08JAN05
A2MRBU0600	Watermain Diversion & Advance Notice to WSD	11JAN05	11JAN05	30	100	09NOV04	11JAN05
A2MRBU0610	Watermain Connection by WSD	22JAN05	22JAN05	18	100	22JAN05	22JAN05
A2MRBU0700	Diversion of Ext. Drainage at VA (NOV03B)	23DEC05	23DEC05	24	13d	0	06DEC05

**Existing Structure Survey**

ID	Description	Start	Finish	Days	Start	Finish	Days
A2MRBU08100	Existing Bridge & Road Survey	20JUL04	20JUL04	12	100	07JUL04	20JUL04
A2MRBU08200	Submit Monitoring Proposal	23AUG04	16AUG04	12	100	16AUG04	23AUG04
A2MRBU08300	Engineer Approval of Monitoring Proposal	30AUG04	24AUG04	12	100	24AUG04	30AUG04

**Pre-drilling Works**

ID	Description	Start	Finish	Days	Start	Finish	Days
A2MRBR0100	Submit the Coordinates of Culvert	28AUG04	28AUG04	1	100	28AUG04	28AUG04
A2MRBR0200	Pre-drilling (Voided Abutment)	11NOV04	25SEP04	48	100	25SEP04	11NOV04
A2MRBR0300	Pre-drilling (Pier)	23OCT04	23OCT04	30	100	25SEP04	23OCT04
A2MRBR0400	Pre-drilling (North Abutment)	27AUG04	24SEP04	24	100	27AUG04	24SEP04
A2MRBR0500	Submit Proposed Founding Level (Voided Abut.)	20APR05	01APR05	12	100	01APR05	20APR05
A2MRBR0600	Engineer Approval Founding Level (Voided Abut.)	20APR05	20APR05	12	100	21APR05	20APR05
A2MRBR1100	Submit Proposed Founding Level (Pier)	01APR05	01APR05	6	100	01APR05	01APR05
A2MRBR1200	Engineer Approval of Founding Level (Pier)	21APR05	21APR05	12	100	21APR05	21APR05
A2MRBR1300	Submit Proposed Founding Level (N-Abutment)	01APR05	01APR05	6	100	01APR05	01APR05
A2MRBR1400	Engineer Approval of Founding Level (N-Abutment)	20APR05	20APR05	12	100	21APR05	20APR05
A2MRBR1500	Proceeding at North Abutment & Up Ramp	15OCT05	27JUN05	100	46d	87	27JUN05

**Piling Works**

ID	Description	Start	Finish	Days	Start	Finish	Days
A2MRPW01100	Mobilization of Piling Plants	22AUG05	22AUG05	6	100	08AUG05	22AUG05
A2MRPW02000	Construct Pile AV1-AV17	07DEC05	23AUG05	68	1d	12	23AUG05
A2MRPW13000	Construct Pier Pile P1-P12	10NOV05	28OCT05	36	24d	0	28OCT05
A2MRPW15000	Construct N-Abutment Pile AN1-AN6	08DEC05	08DEC05	24	24d	0	11NOV05
A2MRPW15110	Load Test at Voided Abutment & Pier (Optional)	08DEC05	08DEC05	24	1d	0	08DEC05
A2MRPW15200	Load Test at North Abutment (Optional)	07JAN06	07FEB06	24	24d	0	09DEC05

**Voided Abutment**

ID	Description	Start	Finish	Days	Start	Finish	Days
A2MRVA01100	Construct Ground Beams (Stage 1)	23JAN06	23JAN06	12	13d	0	07JAN06
A2MRVA02000	Construct Ground Beams (Stage 2)	06FEB06	06FEB06	12	13d	0	21JAN06

**ITTAs**  
 ITTA No. 02 - Sul Cheung St. (S/B Fast Lane)  
 ITTA No. 03 - Existing Ma Liu Shui Bridge  
 ITTA No. 04 - Cycle Track  
 ITTA No. 05 - Sul Cheung St. Roundabout  
 ITTA No. 06 - Sul Cheung St. Roundabout  
 ITTA No. 07 - Sul Cheung St. Roundabout  
 ITTA No. 08 - Sul Cheung St. & EML SB  
 ITTA No. 09 - Road D1 & Sul Cheung St. R/A

**Diversion of Ext. Drainage at VA (NOV03B)**

**Existing Bridge & Road Survey**

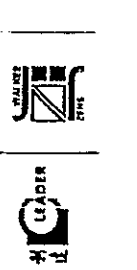
- Submit the Coordinates of Culvert
- Pre-drilling (Voided Abutment)
- Pre-drilling (Pier)
- Pre-drilling (North Abutment)

**Preparation of Founding Levels**

- Submit Proposed Founding Level (Voided Abut.)
- Engineer Approval Founding Level (Voided Abut.)
- Submit Proposed Founding Level (Pier)
- Engineer Approval of Founding Level (Pier)
- Submit Proposed Founding Level (N-Abutment)
- Engineer Approval of Founding Level (N-Abutment)

**Proceeding at North Abutment & Up Ramp**

- Mobilization of Piling Plants
- Construct Pile AV1-AV17
- Construct Pier Pile P1-P12
- Construct N-Abutment Pile AN1-AN6
- Load Test at Voided Abutment & Pier (Optional)
- Load Test at North Abutment (Optional)
- Construct Ground Beams (Stage 1)
- Construct Ground Beams (Stage 2)



Start date 10/JUN/04  
 Finish date 20/OCT/07  
 WBS date 28/SEP/05  
 WBS date 17/OCT/05  
 Job number 7A

Entry bar  
 Progress bar  
 Critical bar  
 Summary bar  
 Start milestone point  
 Finish milestone point

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ID	Description	Unit	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
			01	02	03	04	05	06	07	08	09	10
A2MBVA0000	Construct Ground Beams (Stage 3)	12	1d		07	JAN	06	20	JAN	06	06	JAN
A2MBVA0001	Construct Ground Beams (Stage 4)	12	1d		07	JAN	06	20	JAN	06	07	FEB
A2MBVA0002	Construct Ground Beams (Stage 5)	12	21d		07	FEB	06	20	FEB	06	03	MAR
A2MBVA0003	Construct Wall (Stage 1)	18	13d		07	FEB	06	27	FEB	06	22	FEB
A2MBVA0004	Construct Wall (Stage 2)	18	13d		07	FEB	06	20	MAR	06	15	MAR
A2MBVA0005	Construct Wall (Stage 3)	18	1d		07	FEB	06	24	FEB	06	25	FEB
A2MBVA0006	Construct Wall (Stage 4)	18	1d		07	FEB	06	15	MAR	06	10	MAR
A2MBVA0007	Construct Wall (Stage 5)	18	1d		07	MAR	06	03	APR	06	05	APR
A2MBVA1000	Construct Slab	36	67d		05	APR	06	17	MAY	06	24	JUN
A2MBPA0100	Construct Pile Cap	12	40d		07	JAN	06	20	JAN	06	25	FEB
A2MBPA0200	Construct Columns	21	40d		07	JAN	06	16	FEB	06	11	MAR

ID	Description	Unit	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2MBNA0100	Construct RE Wall to Formation of Abutment	18	24d		06	JAN	06	26	JAN	06	06	FEB
A2MBNA0200	Construct RE Wall to Formation of RC Wall Type A	36	33d		01	FEB	06	14	MAR	06	11	MAR
A2MBNA0300	Fix RE Wall to Face of Abutment & RC Wall	36	27d		13	APR	06	28	MAY	06	16	MAY
A2MBNA1100	Construct Pile Cap	18	24d		01	FEB	06	21	FEB	06	01	MAR
A2MBNA1200	Construct Abutment Walls	24	24d		02	FEB	06	21	MAR	06	19	APR
A2MBNA1300	Construct RC Wall Type A	36	27d		02	MAR	06	04	MAY	06	05	JUN
A2MBNA1400	Construct RC Wall Type B	36	33d		01	FEB	06	14	MAR	06	11	MAR
A2MBNA1500	Construct RC Wall Type C	18	33d		01	MAR	06	06	APR	06	24	APR

ID	Description	Unit	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2MBDA0100	Erect Scaffolding	18	1d		05	APR	06	25	APR	06	06	APR
A2MBDA0200	Erect Formwork (Bottom Slab)	12	1d		26	APR	06	10	MAY	06	27	APR
A2MBDA0300	Steel Fixing	8	13d		11	MAY	06	16	MAY	06	05	JUN
A2MBDA0400	Erect Formwork (Kicker)	8	13d		20	MAY	06	26	MAY	06	14	JUN
A2MBDA0500	Concreting	1	13d		30	MAY	06	15	JUN	06	15	JUN
A2MBDA0600	Erect Formwork (Diaphragm & Top Slab)	10	13d		01	JUN	06	12	JUN	06	27	JUN
A2MBDA0700	Steel Fixing	8	13d		13	JUN	06	21	JUN	06	07	JUL
A2MBDA0800	Concreting	1	13d		22	JUN	06	22	JUN	06	08	JUL
A2MBDA0900	Install, Stress Tendons & Grouting	24	1d		06	JUL	06	04	AUG	06	10	JUL
A2MBDA1000	Remove Formwork & Scaffolding	8	45d		01	AUG	06	21	AUG	06	04	OCT
A2MBDA1100	Construct Parapet	70	1d		05	AUG	06	28	OCT	06	07	AUG
A2MBDA1200	Construct Cable Barrier	38	1d		21	SEP	06	03	NOV	06	22	SEP

ID	Description	Unit	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2MBDC0100	Erect Scaffolding	18	24d		22	MAR	06	12	APR	06	20	APR
A2MBDC0200	Erect Formwork (Bottom Slab)	12	1d		11	MAY	06	24	MAY	06	12	MAY
A2MBDC0300	Steel Fixing	8	1d		25	MAY	06	03	JUN	06	28	MAY
A2MBDC0400	Erect Formwork (Kicker)	8	1d		05	JUN	06	13	JUN	06	06	JUN
A2MBDC0500	Concreting	1	1d		14	JUN	06	14	JUN	06	15	JUN
A2MBDC0600	Erect Formwork (Diaphragm & Top Slab)	10	1d		15	JUN	06	20	JUN	06	15	JUN
A2MBDC0700	Steel Fixing	8	1d		27	JUN	06	08	JUL	06	27	JUN
A2MBDC0800	Concreting	1	1d		07	JUL	06	07	JUL	06	08	JUL
A2MBDC0900	Install, Stress Tendons & Grouting	24	1d		06	JUL	06	04	AUG	06	10	JUL
A2MBDC1000	Remove Formwork & Scaffolding	8	30d		19	AUG	06	28	AUG	06	04	OCT
A2MBDC1100	Construct Parapet	70	1d		05	AUG	06	20	OCT	06	07	AUG

**Legend**

- 100% Complete
- 90% Complete
- 80% Complete
- 70% Complete
- 60% Complete
- 50% Complete
- 40% Complete
- 30% Complete
- 20% Complete
- 10% Complete
- 0% Complete

**Legend**

- Empty bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

Page number: BA

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Leader - Wal Kee (C&T) Joint Venture  
TP37/03 - Revised Works Programme - RP04

Activity ID	Description	QTY	Total Dur	Percent Complete	Early Start	Early Finish	LEAD Start	LEAD Finish
A2MBD0100	Construct Centre Barrier	38	1d	0	21SEP08	30NOV08	22SEP08	04NOV08
A2MBD0200	Install Drainage System	18	7d	0	05OCT08	26OCT08	14OCT08	04NOV08
A2MBD0300	Install Aluminium Rail	18	7d	0	05OCT08	26OCT08	14OCT08	04NOV08
A2MBD0400	Install Public Lighting Post	12	13d	0	27OCT08	10NOV08	18NOV08	25NOV08
A2MBD0500	Soth Lighting	8	45d	0	05AUG08	11AUG08	27SEP08	03OCT08
A2MBE0100	North Abutment - Backfill to Formation	40	98d	0	06APR08	23MAY08	03AUG08	18SEP08
A2MBE0200	North Abutment - Lay Subbase	8	96d	0	30JUN08	10JUL08	26OCT08	04NOV08
A2MBE0300	Road Pavement	18	1d	0	04NOV08	24NOV08	08NOV08	25NOV08
A2MBE0400	Apply Road Marking	8	1d	0	25NOV08	01DEC08	27NOV08	02DEC08
A2MBE0500	Erect Signage	12	1d	0	11NOV08	24NOV08	13NOV08	28NOV08
A2MBE0600	Remove Ext Surcharge Mound	22	45d	0	24OCT08	17NOV08	15DEC08	11JAN09
A2REWA0100	Bay 1	16	45d	0	18NOV08	06DEC08	12JAN09	01FEB09
A2REWA0200	Bay 2	14	45d	0	07DEC08	22DEC08	02FEB09	17FEB09
A2REWA0300	Bay 3	14	45d	0	23DEC08	10JAN09	18FEB09	08MAR09
A2REWA0400	Bay 4	14	45d	0	11JAN09	26JAN09	07MAR09	22MAR09
A2REWA0500	Bay 5	14	47d	0	18NOV08	03DEC08	14JAN09	01FEB09
A2REWA0600	Bay 6	14	47d	0	05DEC08	20DEC08	02FEB09	17FEB09
A2REWA0700	Bay 7	14	47d	0	21DEC08	07JAN09	18FEB09	08MAR09
A2REWA0800	Bay 8	14	47d	0	05JAN09	24JAN09	07MAR09	22MAR09
A2REWA0900	Bay 9	14	20d	0	28DEC08	12JAN09	02FEB09	17FEB09
A2REWA1000	Bay 10	14	20d	0	13JAN09	28JAN09	18FEB09	08MAR09
A2REWA1100	Bay 11	14	20d	0	01FEB09	16FEB09	07MAR09	22MAR09
A2REWA1200	Filling to Road Formation Levels	20	28d	0	06FEB08	26FEB08	11MAR08	03APR08
A2RDD0100	Decide Exact Location of Manholes & Catchpits	1	123d	0	30SEP08	30SEP08	28FEB08	28FEB08
A2RDD0200	S818 - S705	38	5d	0	13FEB08	25MAR08	18FEB08	31MAR08
A2RDD0300	S828 - S828	31	99d	0	24MAY08	28JUN08	19SEP08	25OCT08
A2RDD0400	S816 - S829	24	85d	0	01MAR08	28MAR08	12JUN08	10JUL08
A2RDD0500	S868 - 8710	27	58d	0	21DEC08	23JAN09	01MAR08	31MAR08
A2RDD0600	S810A - S810 (TTA No. 01)	28	18d	0	14FEB08	08MAR08	08MAR08	30MAR08
A2RDD0700	S810 - S710 (TTA No. 04)	22	28d	0	30MAY08	24JUN08	30JUN08	26JUL08
A2RDD0800	Replace 600 Pipe by 800 Pipe (TTA No. 04)	20	20d	0	30MAY08	22JUN08	23JUN08	17JUL08
A2RDD0900	Reconnect Ext MH w 1800 Chamber (TTA No. 08)	22	31d	0	22AUG08	15SEP08	27SEP08	23OCT08
A2RDD1000	Contract Gullies to Existing Pipe (TTA No. 06)	18	5d	0	12SEP08	02OCT08	18SEP08	09OCT08
A2RDT0100	NWT & HGC - Laying Cable Duct	17	5d	0	27MAR08	15APR08	01APR08	21APR08
A2RDT0200	NWT & HGC Cable Connection	27	13d	0	17APR08	18MAY08	03MAY08	03JUN08
A2RDT0300	WT&T - Laying Cable Duct	17	5d	0	17APR08	08MAY08	22APR08	12MAY08
A2RDT0400	WT&T - Cable Connection	28	170d	0	08MAY08	07JUN08	27NOV08	20DEC08
A2RDT0500	PCCW - Laying Cable Duct	40	5d	0	17APR08	03JUN08	22APR08	08JUN08
A2RDT0600	PCCW - Cable Connection	20	147d	0	05JUN08	05JUL08	27NOV08	28DEC08

Remove Ext Surcharge Mound

- Bay 1
- Bay 2
- Bay 3
- Bay 4
- Bay 5
- Bay 6
- Bay 7
- Bay 8
- Bay 9
- Bay 10
- Bay 11

Filling to Road Formation Levels

Decide Exact Location of Manholes & Catchpits

- S818 - S705
- S828 - S828
- S816 - S829
- S810A - S810 (TTA No. 01)
- S810 - S710 (TTA No. 04)
- Replace 600 Pipe by 800 Pipe (TTA No. 04)
- Reconnect Ext MH w 1800 Chamber (TTA No. 08)
- Contract Gullies to Existing Pipe (TTA No. 06)

**Utility Works**

- NWT & HGC - Laying Cable Duct
- NWT & HGC Cable Connection
- WT&T - Laying Cable Duct
- WT&T - Cable Connection
- PCCW - Laying Cable Duct
- PCCW - Cable Connection

**LEADERS**

LEADERS

**LEADERS**

LEADERS

**LEADERS**

LEADERS

**LEADERS**

LEADERS

**LEADERS**

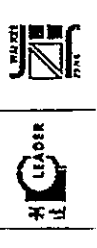
LEADERS

ID	Description	Start	Finish	Duration
A2RDRP0001	Watermain - Laying FW Main Crossing	01APR06	15APR06	14
A2RDRP0002	Watermain - Laying FW Main Crossing (TTA No. 04)	03JUL06	28JUL06	25
A2RDRP0003	Watermain - Replaces Fresh Main (TTA No. 01)	28MAR06	21APR06	18
A2RDRP0004	Watermain - Replaces Fresh Main (TTA No. 06)	11SEP06	10SEP06	18
A2RDRP0005	Install Public Lighting Post (TTA No. 04)	28JUL06	25AUG06	28
A2RDRP0006	Install Public Lighting Post (TTA No. 08)	26OCT06	30NOV06	35
A2RDRP0007	Lighting Drawnpt & Cable Duct	02JUL06	11AUG06	10
A2RDRP0008	Lighting Drawnpt & Cable Duct (TTA No. 04)	09JUL06	09AUG06	10
A2RDRP0009	Lighting Drawnpt & Cable Duct (TTA No. 08)	10OCT06	16OCT06	6
A2RDRP0010	Trim Formation & Lay Subbase	18JUL06	18AUG06	10
A2RDRP0011	Trim Formation & Lay Subbase (TTA No. 01)	11APR06	01MAY06	21
A2RDRP0012	Trim Formation & Lay Subbase (TTA No. 02)	25APR06	23AUG06	19
A2RDRP0013	Trim Formation & Lay Subbase (TTA No. 04)	13JUL06	05AUG06	23
A2RDRP0014	Trim Formation & Lay Subbase (TTA No. 08)	18OCT06	24OCT06	6
A2RDRP0015	Road Pavement - W/C	20JUL06	19AUG06	30
A2RDRP0016	Road Pavement - W/C (TTA No. 01)	12APR06	05MAY06	24
A2RDRP0017	Road Pavement - W/C (TTA No. 02)	03MAY06	21AUG06	18
A2RDRP0018	Road Pavement - W/C (TTA No. 04)	20JUL06	12AUG06	23
A2RDRP0019	Road Pavement - W/C (TTA No. 08)	02NOV06	08NOV06	6
A2RDRP0020	Road Pavement - W/C (TTA No. 09)	18DEC06	18DEC06	1
A2RDRP0021	Construct Footpath between CT & D1	03AUG06	19SEP06	16
A2RDRM0001	Apply Road Marking (TTA No. 04)	02AUG06	22AUG06	20
A2RDRM0002	Apply Road Marking (TTA No. 08)	28NOV06	01DEC06	4
A2RDRM0003	Erect Signage	20JUL06	17AUG06	28
A2RDRM0004	Erect Signage (TTA No. 06)	02NOV06	24NOV06	22
A2RDRM0005	Install Railing, Fencing & etc	20JUL06	17AUG06	28
A2RDRM0006	Install Railing, Fencing & etc (TTA No. 08)	02NOV06	24NOV06	22
A2RDRM0007	Construct Footpath between CT & D1	03AUG06	19SEP06	16
A2RDRM0008	Remove Exc Surcharge Mound	24OCT06	17NOV06	24
A2RDRM0009	Excavate to +4.5 mPO	18NOV06	30NOV06	12
A2RDRM0010	Fill to Road Formation	02DEC06	14DEC06	12
A2RDRM0011	Decide Exact Location of Manholes & Catchpits	30SEP06	12JAN06	1
A2RDRM0012	Existing Box Culvert	02JAN06	13JAN06	11
A2RDRM0013	Existing Box Culvert	14FEB06	28FEB06	14
A2RDRM0014	F301 - F302	20MAR06	31MAR06	11
A2RDRM0015	S633 - S639	01MAY06	05APR06	30

ID	Description	Start	Finish	Duration
A2RDRM0016	Remove Exc Surcharge Mound	24OCT06	17NOV06	24
A2RDRM0017	Excavate to +4.5 mPO	18NOV06	30NOV06	12
A2RDRM0018	Fill to Road Formation	02DEC06	14DEC06	12
A2RDRM0019	Decide Exact Location of Manholes & Catchpits	30SEP06	12JAN06	1
A2RDRM0020	S647 - Existing Box Culvert	02JAN06	06FEB06	5
A2RDRM0021	S633 - Existing Box Culvert	14FEB06	18MAR06	34
A2RDRM0022	F301 - F302	20MAR06	31MAR06	11
A2RDRM0023	S633 - S639	01MAY06	05APR06	30

**Legend**

- Green bar: Early bar
- Yellow bar: Progress bar
- Red bar: Critical bar
- Blue bar: Summary bar
- Black diamond: Start milestone point
- White diamond: Finish milestone point



Decide Exact Location of Manholes & Catchpits

- S647 - Existing Box Culvert
- S633 - Existing Box Culvert
- F301 - F302
- S633 - S639

Remove Exc Surcharge Mound

- Excavate to +4.5 mPO
- Fill to Road Formation

Apply Road Marking (TTA No. 04)

- Erect Signage
- Install Railing, Fencing & etc
- Install Railing

Road Pavement - W/C (TTA No. 01)

- Road Pavement - W/C (TTA No. 02)
- Road Pavement - W/C (TTA No. 04)
- Road Pavement - W/C (TTA No. 08)
- Construct Footpath between CT & D1

Trim Formation & Lay Subbase

- Trim Formation & Lay Subbase (TTA No. 01)
- Trim Formation & Lay Subbase (TTA No. 02)
- Trim Formation & Lay Subbase (TTA No. 04)
- Trim Formation

Lighting Drawnpt & Cable Duct

- Lighting Drawnpt & Cable Duct (TTA No. 04)
- Lighting Drawnpt & Cable Duct (TTA No. 08)

Watermain - Replaces Fresh Main (TTA No. 01)

- Watermain - Replaces Fresh Main
- Install Public Lighting Post (TTA No. 04)
- Install Public Lighting Post (TTA No. 08)

Lay Kerb (TTA No. 04)

- Lay Kerb (TTA No. 04)
- Construct Central Divider

Watermain - Laying FW Main Crossing

- Watermain - Laying FW Main Crossing (TTA No. 04)
- Watermain - Replaces Fresh Main (TTA No. 01)
- Watermain - Replaces Fresh Main (TTA No. 06)

ID	Activity Name	Start	Complete	Float	Dir	Finish	State	Finish
A2RSUT0200	NWT & HGC - Laying Cable Duct	01MAR06	01MAR06	30d	0	01MAR06	22APR06	17MAY06
A2RSUT0210	NWT & HGC - Cable Connection	01MAR06	01MAR06	30d	0	01MAR06	06APR06	26APR06
A2RSUT0300	WT&T - Laying Cable Duct	17APR06	17APR06	44d	0	17APR06	06JUN06	11JUL06
A2RSUT0310	WT&T - Cable Connection	22MAR06	22MAR06	30d	0	22MAR06	27APR06	18MAY06
A2RSUT0400	PCCW - Laying Cable Duct	08MAY06	07JUN06	28d	0	08MAY06	10JUN06	11JUL06
A2RSUT0410	PCCW - Cable Connection	22MAR06	04MAY06	30d	0	22MAR06	27APR06	06JUN06
A2RSUT0500	Install Public Lighting Post	05JUL06	05JUL06	5d	0	05JUL06	10JUN06	11JUL06
A2RSRK0100	Construct Dwarf Wall	21JUL06	28JUL06	20d	0	21JUL06	14AUG06	22AUG06
A2RSRK0200	Lay Kerb	08MAY06	15JUN06	10d	0	08MAY06	18MAY06	27JUN06
A2RSRK0300	Lighting Drawpit & Cable Duct	11JUL06	20JUL06	10d	0	11JUL06	22JUL06	01AUG06
A2RSRP0100	Trim Formation & Lay Subbase	18JUN06	07JUL06	21d	0	18JUN06	12JUL06	01AUG06
A2RSRP0200	Road Pavement	21JUL06	10AUG06	10d	0	21JUL06	02AUG06	22AUG06
A2RSRP0300	Construct Footpath between CT and RW No. 1	08JUL06	02AUG06	8d	0	08JUL06	12JUL06	08AUG06
A2RSRM0100	Apply Road Marking	17AUG06	19AUG06	3d	0	17AUG06	23AUG06	23AUG06
A2RSRM0200	Erect Signage	03AUG06	16AUG06	12d	0	03AUG06	09AUG06	22AUG06
A2RSRM0300	Install Railing, Fencing & etc	03AUG06	16AUG06	12d	0	03AUG06	09AUG06	22AUG06
A2SCDW0000	Decide Exact Location of Manholes & Catchpits	01SEP05	30SEP05	185d	0	01SEP05	13MAY06	13MAY06
A2SCDW0200	S&S4 - S&S7 (TTA No. 04)	08MAY06	27JUN06	42d	0	08MAY06	15MAY06	04JUL06
A2SCDW0300	Construct Gutters (TTA No. 08)	22AUG06	25AUG06	4d	0	22AUG06	08OCT06	08OCT06
A2SCUT0000	Watermain - Replaces SWM (TTA No. 04)	14JUN06	12JUL06	24d	0	14JUN06	20JUN06	18JUL06
A2SCUT0100	Watermain - Lay FWH Crossing (TTA No. 04)	21JUN06	12JUL06	18d	0	21JUN06	27JUN06	18JUL06
A2SCUT0200	Watermain - Lay FWH Crossing (TTA No. 08)	28AUG06	23SEP06	24d	0	28AUG06	06OCT06	08NOV06
A2SCUT0300	Install Public Lighting Post (TTA No. 04)	01AUG06	09AUG06	6d	14d	01AUG06	17AUG06	25AUG06
A2SCUT0400	Install Public Lighting Post (TTA No. 08)	09OCT06	17OCT06	6d	0	09OCT06	21NOV06	28NOV06
A2SCPR0100	Lay Kerb (TTA No. 04)	22JUL06	31JUL06	8d	0	22JUL06	28JUL06	05AUG06
A2SCPR0200	Lay Kerb (TTA No. 08)	30SEP06	06OCT06	6d	0	30SEP06	14NOV06	20NOV06
A2SCPK0300	Lighting Drawpit & Cable Duct (TTA No. 04)	13JUL06	21JUL06	6d	0	13JUL06	19JUL06	27JUL06
A2SCPR0400	Lighting Drawpit & Cable Duct (TTA No. 08)	23SEP06	29SEP06	6d	0	23SEP06	07NOV06	13NOV06
A2SCRP0100	Trim Formation & Lay Subbase (TTA No. 04)	22JUL06	04AUG06	12d	0	22JUL06	28JUL06	10AUG06
A2SCRP0200	Road Pavement (TTA No. 04)	05AUG06	19AUG06	12d	0	05AUG06	11AUG06	24AUG06
A2SCRP0300	Road Pavement (TTA No. 08)	09OCT06	17OCT06	8d	0	09OCT06	21NOV06	29NOV06
A2SCRP0400	Remove Existing Traffic Island (TTA No. 02)	25APR06	02MAY06	6d	16d	25APR06	18MAY06	24MAY06
A2SCRP0500	Road Pavement (TTA No. 02)	03MAY06	11MAY06	8d	0	03MAY06	25MAY06	03JUN06
A2SCRM0050	Apply Road Marking (TTA No. 04)	19AUG06	19AUG06	1d	0	19AUG06	25AUG06	25AUG06
A2SCRM0100	Apply Road Marking (TTA No. 08)	18OCT06	20OCT06	3d	0	18OCT06	30NOV06	02DEC06
A2SCRM0200	Erect Signage	18AUG06	01SEP06	12d	74d	18AUG06	18NOV06	20NOV06
A2SCRM0300	Install Railing, Fencing & etc	18AUG06	01SEP06	12d	74d	18AUG06	18NOV06	20NOV06

**Activity Name**

- NWT & HGC - Laying Cable Duct
- NWT & HGC - Cable Connection
- WT&T - Laying Cable Duct
- WT&T - Cable Connection
- PCCW - Laying Cable Duct
- PCCW - Cable Connection
- Install Public Lighting Post
- Construct Dwarf Wall
- Lay Kerb
- Lighting Drawpit & Cable Duct
- Trim Formation & Lay Subbase
- Road Pavement
- Construct Footpath between CT and RW No. 1
- Apply Road Marking
- Erect Signage
- Install Railing, Fencing & etc
- Decide Exact Location of Manholes & Catchpits
- S&S4 - S&S7 (TTA No. 04)
- Construct Gutters (TTA No. 08)
- Watermain - Replaces SWM (TTA No. 04)
- Watermain - Lay FWH Crossing (TTA No. 04)
- Watermain - Lay FWH Crossing (TTA No. 08)
- Install Public Lighting Post (TTA No. 04)
- Install Public Lighting Post (TTA No. 08)
- Lay Kerb (TTA No. 04)
- Lay Kerb (TTA No. 08)
- Lighting Drawpit & Cable Duct (TTA No. 04)
- Lighting Drawpit & Cable Duct (TTA No. 08)
- Trim Formation & Lay Subbase
- Road Pavement (TTA No. 04)
- Road Pavement (TTA No. 08)
- Remove Existing Traffic Island (TTA No. 02)
- Road Pavement (TTA No. 02)
- Apply Road Marking (TTA No. 04)
- Apply Road Marking (TTA No. 08)
- Erect Signage
- Install Railing, Fencing & etc

**Legend**

- Early bar
- Progress bar
- Critical bar
- Summary bar
- ◆ Start milestone point
- ◆ Finish milestone point

**Leader - Wal Koo (C&T) Joint Venture**

**TP37/03 - Revised Works Programme - RP04**



Asst ID	Description	Orig Est	Total Cost	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASRRP0100	Laying Lighting Cross Road Duct (TTA No. 05)	4	101d	0	06JUN06	12JUN06	05OCT06	10OCT06
ASRRP0200	Laying Lighting Cross Road Duct (TTA No. 06)	4	101d	0	26JUN06	28JUN06	24OCT06	27OCT06
ASRRP0300	Demolish Existing Island (TTA No. 05)	8	101d	0	28MAY06	07JUN06	20SEP06	04OCT06
ASRRP0400	Construct Proposed Island (TTA No. 05)	8	101d	0	13JUN06	21JUN06	11OCT06	18OCT06
ASRRP0500	Demolish Existing Kerb (TTA No. 06)	2	101d	0	23JUN06	24JUN06	21OCT06	23OCT06
ASRRP0600	Lay Kerb (TTA No. 06)	8	101d	0	30JUN06	10JUL06	28OCT06	07NOV06
ASRRP0700	Demolish Existing Roundabout (TTA No. 07)	8	101d	0	14JUL06	22JUL06	11NOV06	20NOV06
ASRRP0800	Reconstruct Roundabout (TTA No. 07)	8	101d	0	24JUL06	01AUG06	21NOV06	28NOV06
ASRRP0900	Reinstates Road Pavement (TTA No. 08)	2	101d	0	11JUL06	12JUL06	08NOV06	09NOV06
ASRRP1000	Resurfacing Wearing Course	8	101d	0	02AUG06	10AUG06	30NOV06	08DEC06
ASRRP1100	Construct Proposed Island (TTA No. 09)	12	7d	0	04DEC06	10DEC06	12DEC06	25DEC06
ASRRM0100	Apply Road Marking	2	101d	0	25AUG06	28AUG06	23DEC06	25DEC06
ASRRM0200	Erect Signage	12	101d	0	11AUG06	24AUG06	08DEC06	22DEC06
ASRRM0300	Install Railing, Fencing & etc	12	101d	0	11AUG06	24AUG06	08DEC06	22DEC06
ASRRM0400	Install Public Lighting Post	6	81d	0	03OCT06	12OCT06	16DEC06	23DEC06
ASBRP0100	Lay Kerb (TTA No. 03)	8	46d	0	13JUN06	21JUN06	07AUG06	15AUG06
ASBRP0200	Cable Duct Laying on Island (TTA No. 06)	6	75d	0	20AUG06	01SEP06	24NOV06	30NOV06
ASBRP0300	Cable Duct Laying on Reserve (TTA No. 06)	6	87d	0	05SEP06	11SEP06	19NOV06	18NOV06
ASBRP0400	Demolish Existing Pavement (TTA No. 03)	12	144d	0	28MAY06	12JUN06	12OCT06	25OCT06
ASBRP0500	Demolish Island & Paved Area (TTA No. 03)	12	46d	0	29MAY06	12JUN06	24JUL06	05AUG06
ASBRP0600	Road Pavement (TTA No. 03)	8	46d	0	22JUN06	30JUN06	16AUG06	21AUG06
ASBRP0700	Construct Roundabout on V-Abutment (TTA No. 08)	8	114d	0	13JUN06	21JUN06	26OCT06	04NOV06
ASBRP0800	Remove Pavement at Proposed Island (TTA No. 04)	4	75d	0	22AUG06	25AUG06	20NOV06	23NOV06
ASBRP0900	Construct Traffic Island (TTA No. 04)	6	75d	0	02SEP06	11SEP06	01DEC06	00DEC06
ASBRP1000	Construct Remaining Roundabout (TTA No. 08)	12	81d	0	22AUG06	04SEP06	27NOV06	09DEC06
ASBRP1100	Demolish Existing Central Reserve (TTA No. 06)	12	87d	0	22AUG06	04SEP06	26OCT06	11NOV06
ASBRP1200	Construct New Central Reserve (TTA No. 06)	16	57d	0	12SEP06	02OCT06	20NOV06	09DEC06
ASBRM0100	Apply Road Marking (TTA No. 03)	1	46d	0	03JUL06	03JUL06	25AUG06	25AUG06
ASBRM0200	Apply Road Marking (TTA No. 08)	1	57d	0	18OCT06	18OCT06	25DEC06	25DEC06
ASBRM0300	Erect Signage	12	57d	0	03OCT06	17OCT06	11DEC06	23DEC06
ASBRM0400	Install Railing, Fencing & etc	12	57d	0	03OCT06	17OCT06	11DEC06	23DEC06
ASCPDW1000	S682 - Existing Culvert	21	86d	0	08MAY06	30MAY06	19AUG06	12SEP06
ASCPDW1000	CP932 - S684	16	66d	0	01JUN06	19JUN06	13SEP06	30SEP06
ASCPDW1000	Install Public Lighting Post	4	100d	0	14AUG06	22AUG06	16DEC06	26DEC06
ASCPDW1000	Construct Diver Wall	23	80d	0	20JUN06	17JUL06	02OCT06	20OCT06
ASCPDW1000	Lay Kerb	6	86d	0	04AUG06	12AUG06	17NOV06	25NOV06

**Legend:**

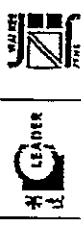
- █ Early bar
- █ Progress bar
- █ Critical bar
- █ Summary bar
- ◆ Start milestone point
- ◆ Finish milestone point

WALSH  
**LEADER**  
CONSTRUCTION

Leader - Wai Koo (C&T) Joint Venture  
TP37/03 - Revised Works Programme - RP04

Item ID	Description	Orig. Dur.	Est. Dur.	Percent Complete	Start	Finish	Start	Finish	Lat	Long
AZCPK0020	Public Lighting Controller	10	118d	0	18JUL06	28JUL06	06DEC06	18DEC06		
AZCPK0400	Lighting Drawpit & Cable Duct	15	88d	0	18JUL06	08AUG06	31OCT06	18NOV06		
AZCPK0100	Trim Formation & Lay Subbase	8	86d	0	14AUG06	22AUG06	06DEC06	14DEC06		
AZCPK0200	Road Pavement	8	86d	0	23AUG06	31AUG06	15DEC06	23DEC06		
AZCPK0300	Construct Footpath	18	88d	0	14AUG06	02SEP06	27NOV06	18DEC06		
AZCPK0200	Apply Road Marking	2	88d	0	11SEP06	12SEP06	25DEC06	26DEC06		
AZCPK0300	Erect Signage	6	88d	0	04SEP06	06SEP06	16DEC06	23DEC06		
AZCPK0300	Install Railing, Fencing & etc	6	88d	0	04SEP06	06SEP06	18DEC06	23DEC06		
<b>Area 3</b>										
AZAMV0100	Construct U-Channels	18	118d	0	18JUL06	07AUG06	06DEC06	29DEC06		
AZAMV0100	Water Point WP1-3 to Water Meter No.1	18	81d	0	08SEP06	26SEP06	22NOV06	12DEC06		
AZAMV0200	Water Point WP2-3 to Water Meter No.2	17	106d	0	28JUN06	18JUL06	07DEC06	28DEC06		
AZAMV0300	Water Point WP3-6 to Water Meter No.3	26	107d	0	22JUL06	21AUG06	27NOV06	28DEC06		
AZAMV0400	Water Point WP6-2 to Water Meter No.6	12	81d	0	30SEP06	14OCT06	13DEC06	20DEC06		
<b>Section 3</b>										
<b>Area 4</b>										
AZMSR0100	Remove Surcharge Mound	18	5d	0	30SEP06	22OCT06	07OCT06	28OCT06		
AZMSR0100	Construct Base Slab	8	5d	0	07NOV06	15NOV06	12NOV06	21NOV06		
AZMSR0200	Construct Wall upto Barrel Base Slab	8	5d	0	16NOV06	24NOV06	22NOV06	30NOV06		
AZMSR0300	Construct Wall up to Top Slab	12	5d	0	08DEC06	20DEC06	15DEC06	30DEC06		
AZMSR0400	Construct Top Slab	12	9d	0	09JAN06	21JAN06	19JAN06	03FEB06		
AZMSR0500	Install Hoisting Beam	6	5d	0	02JAN06	07JAN06	07JAN06	13JAN06		
<b>Subway Area Construction</b>										
AZMSSE0100	Excavation	24	5d	0	24OCT06	18NOV06	29OCT06	29NOV06		
AZMSSE0200	Construct Subway #1 Base Slab	8	30d	0	21NOV06	30NOV06	28DEC06	06JAN06		
AZMSSE0300	Construct Subway #2 Base Slab	8	17d	0	17NOV06	28NOV06	07DEC06	16DEC06		
AZMSSE0400	Construct Subway #3 Base Slab	8	10d	0	07NOV06	18NOV06	16NOV06	29NOV06		
AZMSSE0500	Construct Subway #4 Base Slab	12	5d	0	28NOV06	08DEC06	01DEC06	14DEC06		
AZMSSE0600	Construct Subway #1 Wall + Top Slab	18	10d	0	24DEC06	13JAN06	07JAN06	25JAN06		
AZMSSE0700	Construct Subway #2 Wall + Top Slab	18	10d	0	08DEC06	28DEC06	17DEC06	08JAN06		
AZMSSE0800	Construct Subway #3 Wall + Top Slab	18	10d	0	17NOV06	05DEC06	28NOV06	18DEC06		
AZMSSE0900	Construct Subway #4 Wall + Top Slab	18	5d	0	09JAN06	20JAN06	14JAN06	03FEB06		
AZMSSE1000	Backfilling	18	5d	0	20JAN06	11FEB06	20JAN06	17FEB06		
<b>Subway Area Construction</b>										
AZMSSE0100	Excavation (East Ramp)	24	5d	0	31OCT06	28NOV06	08NOV06	02DEC06		
AZMSSE0200	Construct E1 Ramp Base Slab	8	11d	0	12DEC06	17DEC06	24DEC06	02JAN06		
AZMSSE0300	Construct E2 Ramp Base Slab	8	11d	0	05DEC06	10DEC06	17DEC06	24DEC06		
AZMSSE0400	Construct E3 Ramp Base Slab	8	9d	0	20NOV06	03DEC06	09DEC06	14DEC06		
AZMSSE0500	Construct E4 Ramp Base Slab	8	8d	0	18NOV06	28NOV06	29NOV06	07DEC06		
AZMSSE0600	Construct E5 Ramp Base Slab	8	11d	0	02DEC06	10DEC06	15DEC06	23DEC06		
AZMSSE0700	Construct E6 Ramp Base Slab	8	9d	0	23NOV06	01DEC06	03DEC06	12DEC06		
AZMSSE1000	Construct E7 Ramp Base Slab	12	5d	0	08NOV06	22NOV06	18NOV06	28NOV06		

Leader - Wal Kee (C&T) Joint Venture  
TP37/03 - Revised Works Programme - RP04



WGL date	10JUN04	Entry bar
WGL date	20OCT06	Progress bar
WGL date	28SEP06	Critical bar
WGL date	17OCT06	Summary bar
WGL number	13A	Start milestone point
		Finish milestone point

C. Primavera Systems, Inc.



ID	Description	Start	End	Start	End	Start	End	Start	End
A3MSFW0030	Fishing Works at East Ramp	24	20d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	31OCT06
A3MSFW0030	Fishing Works at West Ramp	24	20d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	31OCT06
<b>Electrical Works</b>									
A3ASEIH0100	Electrical Installation at Barrel & Pump House	24	86d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28NOV06
A3ASEIH0200	Electrical Installation at East Ramp	24	44d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28NOV06
A3ASEIH0300	Electrical Installation at West Ramp	24	20d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28NOV06
<b>Testing and Commissioning</b>									
A3ASTCO100	Pumping System & Electrical Installation	24	20d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28NOV06
<b>Landscaping and Unwinding Area</b>									
<b>Drainage Works</b>									
A3LUDW0100	Decide Location of Manholes & Catchpits	1	172d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	27APR06
A3LUDW0200	F302 - F306	26	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	01AUG06
A3LUDW0300	Final Plan for F306 - F306A (Deleted)	10	100	28JAN05	28JAN05	28JAN05	28JAN05	28JAN05	28JAN05
A3LUDW0400	F306 - F306A	11	318d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	01NOV06
A3LUDW0500	F306 - F306A (TTA No. 08)	11	81d	02AUG06	02SEP06	02NOV06	02NOV06	08DEC06	08DEC06
A3LUDW0600	F306A - Existing Sewer Manhole	21	318d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	25NOV06
A3LUDW0700	S712 - S822	21	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	06JUN06
A3LUDW0800	S712 - S818	11	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	30JUN06
A3LUDW0900	S718 - S824	21	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	27SEP06
A3LUDW1000	S718 - S823 (TTA No. 04)	28	46d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	25AUG06
A3LUDW1100	S713 - S834	21	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	25AUG06
<b>Utility Works</b>									
A3LUUT0100	CLP - Laying LV Cable	5	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	04OCT06
A3LUUT0200	CLP - Construct Pillar Box	5	147d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28SEP06
A3LUUT0300	Install Public Lighting Post	8	87d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	20DEC06
<b>Public Lighting - Bus and Road</b>									
A3LUPK0100	Construct Dwarf Wall	50	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28SEP06
A3LUPK0200	Construct Dwarf Wall (TTA No. 04)	6	46d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	04OCT06
A3LUPK0300	Lay Kerb (TTA No. 04)	12	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	10NOV06
A3LUPK0400	Lay Kerb (TTA No. 06)	6	86d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	08DEC06
A3LUPK0500	Lighting Drawpit & Cable Duct (TTA No. 04)	18	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28OCT06
A3LUPK0600	Lighting Drawpit & Cable Duct (TTA No. 06)	6	87d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	10DEC06
<b>Roads and Driveways</b>									
A3LURP0100	Trim Formation & Lay Subbase (TTA No. 06)	6	43d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	13DEC06
A3LURP0200	Road Pavement (TTA No. 06)	6	43d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	22DEC06
A3LURP0300	Construct Footpaths (TTA No. 04)	24	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	08DEC06
A3LURP0400	Construct Footpaths (TTA No. 06)	6	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	15DEC06
<b>Road Marking / Traffic Signposting</b>									
A3LURM0100	Apply Road Marking	2	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	20DEC06
A3LURM0200	Erect Signage	6	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	22DEC06
A3LURM0300	Install Railing, Fencing & etc	6	23d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	22DEC06
<b>Amenity Area</b>									
A3AMUT0100	Construct U-Channel	30	61d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	20DEC06
A3AMUT0200	Water Point WPS-2 to Water Meter No.3	16	51d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	28NOV06
A3AMUT0300	Water Point WPS-2 to Water Meter No.5	10	51d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	09DEC06
A3AMUT0400	Water Point WPS-2 to Water Meter No.6	14	51d	01AUG06	07SEP06	05OCT06	03OCT06	30SEP06	20DEC06

Leader - Wai Koo (C&T) Joint Venture  
 TP37/03 - Revised Works Programme - RP04

Code	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	
<b>Foundation Construction</b>									
A4PTFC0100	Excavation to Formation Level	6	36d	0	28SEP05	06OCT05	12NOV05	18NOV05	Excavation to Formation Level
A4PTFC0200	Subsoil Inspection by Structural Engineer	1	36d	0	07OCT05	07OCT05	18NOV05	18NOV05	Subsoil Inspection by Structural Engineer
A4PTFC0300	Blinding	1	36d	0	09OCT05	09OCT05	21NOV05	21NOV05	Blinding
A4PTFC0400	Steel Fixing for Footing	6	36d	0	10OCT05	17OCT05	22NOV05	28NOV05	Steel Fixing for Footing
A4PTFC0500	Formwork	4	36d	0	18OCT05	21OCT05	28NOV05	02DEC05	Formwork
A4PTFC0600	Concreting	1	36d	0	22OCT05	22OCT05	03DEC05	03DEC05	Concreting
A4PTFC0700	Steel Fixing for Walls & Columns	3	36d	0	24OCT05	28OCT05	05DEC05	07DEC05	Steel Fixing for Walls & Columns
A4PTFC0800	Formwork	4	36d	0	27OCT05	31OCT05	08DEC05	12DEC05	Formwork
A4PTFC0900	Concreting	1	36d	0	01NOV05	01NOV05	13DEC05	13DEC05	Concreting
A4PTFC1000	Remove Formwork	6	36d	0	02NOV05	08NOV05	14DEC05	20DEC05	Remove Formwork
A4PTFC1100	Backfilling	12	36d	0	09NOV05	22NOV05	21DEC05	05JAN06	Backfilling
<b>Ground Floor Slab Construction</b>									
A4PTGF0100	Erect Propping & Formwork	6	36d	0	23NOV05	28NOV05	03JAN06	12JAN06	Erect Propping & Formwork
A4PTGF0200	Ground Slab Steel Fixing	3	36d	0	30NOV05	02DEC05	13JAN06	19JAN06	Ground Slab Steel Fixing
A4PTGF0300	Formwork	2	36d	0	03DEC05	05DEC05	17JAN06	18JAN06	Formwork
A4PTGF0400	Concreting	1	36d	0	08DEC05	08DEC05	18JAN06	19JAN06	Concreting
A4PTGF0500	Erect Scaffolding	3	36d	0	07DEC05	08DEC05	20JAN06	23JAN06	Erect Scaffolding
A4PTGF0600	Walls & Columns Formwork	3	36d	0	10DEC05	13DEC05	24JAN06	26JAN06	Walls & Columns Formwork
A4PTGF0700	Steel Fixing for Walls & Columns	3	36d	0	14DEC05	16DEC05	27JAN06	01FEB06	Steel Fixing for Walls & Columns
A4PTGF0800	Formwork	3	36d	0	17DEC05	20DEC05	02FEB06	04FEB06	Formwork
A4PTGF0900	Concreting	1	36d	0	21DEC05	21DEC05	04FEB06	06FEB06	Concreting
A4PTGF1000	Remove Formwork & Propping	12	36d	0	02JAN06	14JAN06	15FEB06	28FEB06	Remove Formwork & Propping
<b>Mezzanine Floor Slab Construction</b>									
A4PTMF0100	Erect Propping & Formwork	6	36d	0	18JAN06	21JAN06	01MAR06	07MAR06	Erect Propping & Formwork
A4PTMF0200	Mezzanine Slab Steel Fixing	3	36d	0	23JAN06	25JAN06	06MAR06	10MAR06	Mezzanine Slab Steel Fixing
A4PTMF0300	Formwork	2	36d	0	28JAN06	27JAN06	11MAR06	13MAR06	Formwork
A4PTMF0400	Concreting	1	36d	0	28JAN06	28JAN06	14MAR06	14MAR06	Concreting
A4PTMF0500	Walls & Columns Formwork	3	36d	0	01FEB06	03FEB06	15MAR06	17MAR06	Walls & Columns Formwork
A4PTMF0600	Steel Fixing for Walls & Columns	3	36d	0	04FEB06	07FEB06	18MAR06	21MAR06	Steel Fixing for Walls & Columns
A4PTMF0700	Formwork	3	36d	0	08FEB06	10FEB06	22MAR06	24MAR06	Formwork
A4PTMF0800	Concreting	1	36d	0	11FEB06	11FEB06	25MAR06	25MAR06	Concreting
A4PTMF0900	Remove Formwork & Propping	12	36d	0	21FEB06	06MAR06	05APR06	18APR06	Remove Formwork & Propping
<b>Upper Mezzanine Floor Slab Construction</b>									
A4PTUF0100	Erect Propping & Formwork	6	36d	0	07MAR06	13MAR06	19APR06	25APR06	Erect Propping & Formwork
A4PTUF0200	Upper Mezzanine Slab Steel Fixing	3	36d	0	14MAR06	16MAR06	26APR06	28APR06	Upper Mezzanine Slab Steel Fixing
A4PTUF0300	Formwork	2	36d	0	17MAR06	18MAR06	29APR06	02MAY06	Formwork
A4PTUF0400	Concreting	1	36d	0	20MAR06	20MAR06	03MAY06	03MAY06	Concreting
A4PTUF0500	Remove Formwork & Propping	12	36d	0	28MAR06	12APR06	13MAY06	25MAY06	Remove Formwork & Propping
<b>Structural Steelwork</b>									
A4PTSS0100	Prepare & Submit Shop Drawings	30	33d	60	01SEP05 A	30SEP05	01SEP05 A	10NOV05	Prepare & Submit Shop Drawings
A4PTSS0200	Engineer Approval of Shop Drawings	12	33d	0	03OCT05	17OCT05	11NOV05	24NOV05	Engineer Approval of Shop Drawings
A4PTSS0300	Procurement of Structural Steel	120	33d	0	18OCT05	10MAR06	26NOV05	10APR06	Procurement of Structural Steel
A4PTSS0400	Delivery of Structural Steel Materials	12	33d	0	11MAR06	24MAR06	20APR06	03MAY06	Delivery of Structural Steel Materials
A4PTSS0500	Inspection & Testing	10	33d	0	25MAR06	15APR06	05MAY06	25MAY06	Inspection & Testing

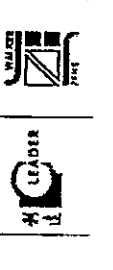
Excavation to Formation Level  
 Subsoil Inspection by Structural Engineer  
 Blinding  
 Steel Fixing for Footing  
 Formwork  
 Concreting  
 Steel Fixing for Walls & Columns  
 Formwork  
 Concreting  
 Remove Formwork  
 Backfilling

Erect Propping & Formwork  
 Ground Slab Steel Fixing  
 Formwork  
 Concreting  
 Erect Scaffolding  
 Walls & Columns Formwork  
 Steel Fixing for Walls & Columns  
 Formwork  
 Concreting  
 Remove Formwork & Propping

Erect Propping & Formwork  
 Mezzanine Slab Steel Fixing  
 Formwork  
 Concreting  
 Walls & Columns Formwork  
 Steel Fixing for Walls & Columns  
 Formwork  
 Concreting  
 Remove Formwork & Propping

Erect Propping & Formwork  
 Upper Mezzanine Slab Steel Fixing  
 Formwork  
 Concreting  
 Remove Formwork & Propping

Prepare & Submit Shop Drawings  
 Engineer Approval of Shop Drawings  
 Procurement of Structural Steel  
 Delivery of Structural Steel Materials  
 Inspection & Testing



Legend:  
 - Early bar  
 - Progress bar  
 - Critical bar  
 - Summary bar  
 - Start milestone point  
 - Finish milestone point

Item	Code	Qty	Unit	Start	Finish	Start	Finish	Start	Finish	Notes
AFPTSS0001	Fabrication & Packing of Steelworks	48	33d	017APR06	13JUN06	26MAY06	22JUL06			Delivery of Prefabricated Steelworks
AFPTSS0002	Delivery of Prefabricated Steelworks	12	33d	014JUN06	27JUN06	24JUL06	05AUG06			Erection of Steelworks
AFPTSS0003	Erection of Steelworks	36	33d	028JUN06	08AUG06	07AUG06	16SEP06			Touch Up Painting
AFPTSS0004	Touch Up Painting	12	33d	010AUG06	23AUG06	16SEP06	30SEP06			
<b>Architectural Buildings Works and Finishes</b>										
AFPTAB0100	Solid Concrete Block Work Wall	36	36d	013APR06	25MAY06	28MAY06	06JUL06			Internal Wall Tie
AFPTAB0200	Internal Wall Tie	24	36d	028MAY06	23JUN06	10JUL06	05AUG06			External Wall Tie
AFPTAB0300	External Wall Tie	24	33d	021SEP06	19OCT06	01NOV06	28NOV06			Toilet Accessories Installation
AFPTAB0400	Toilet Accessories Installation	24	36d	024JUN06	22JUL06	07AUG06	02SEP06			Floor Tile
AFPTAB0500	Floor Tile	24	36d	024JUL06	18AUG06	04SEP06	30SEP06			Roof Cladding
AFPTAB0600	Roof Cladding	24	33d	024AUG06	20SEP06	02OCT06	31OCT06			Metal Works & Ironmongery Installation
AFPTAB0700	Metal Works & Ironmongery Installation	24	33d	020OCT06	17NOV06	28NOV06	28DEC06			
<b>Plumbing Works</b>										
AFPTPL0100	Plumbing Works	24	36d	021AUG06	16SEP06	02OCT06	31OCT06			
<b>E &amp; M Works</b>										
AFPTEM0100	Electrical & Mechanical Installations	48	36d	018SEP06	14NOV06	01NOV06	29DEC06			

Code	Description	Start	Finish	Notes
ASRLDW1000	Decide Exact Location of Manholes & Catchpits	26JUL04 A	26JUL04 A	
ASRLDW1010	Hand Over 2x2500 Pipe Upstream for Connection	20APR05 A	20APR05 A	
ASRLDW1100	S413 - S407 (2x2500)	10SEP04 A	10JUL05 A	
ASRLDW1200	F424 to F427 (in Zone ZC)	10SEP04 A	12JAN05 A	
ASRLDW1300	Outlet - S413 (2x2500)	22NOV04 A	25MAY05 A	
ASRLDW2100	S407 - S407A (2x2500)	03JAN05 A	18JUL05 A	
ASRLDW2200	Connection Point to F431 to F428 (in Zone ZC)	18DEC04 A	18JUL05 A	
ASRLDW2300	SL4-018a - S413 & gullies	10JAN05 A	28APR05 A	
ASRLDW2400	SL4-0026a - S412a	17MAR05 A	17MAR05 A	
ASRLDW2500	CP410 - S412a	21FEB05 A	14APR05 A	
ASRLDW2600	SL4-023a - S412a	01MAR05 A	06APR05 A	
ASRLDW3100	S408 - S407 (1800)	09MAR05 A	03MAY05 A	
ASRLDW3200	Penol Interceptor - S407a & S412	05MAR05 A	15JUL05 A	
ASRLDW3300	Connection Point - SL4-020a - S413	31JAN05 A	19MAR05 A	
ASRLDW4100	S407A - Upstream	05MAY05 A	15JUL05 A	
ASRLDW4200	SL4-023a - SL4-023a & gullies	07MAR05 A	17MAY05 A	
ASRLDW4300	Connection Point to F435	18DEC04 A	08APR05 A	
ASRLDW4400	SL4-022a - SL4-020a & gullies	08MAR05 A	28APR05 A	
ASRLDW4500	F427 - F428	10SEP04 A	10SEP04 A	
ASRLDW4600	F414a - F414	01APR05 A	18AUG05 A	
ASRLDW5100	Connection Point - S404 - S408	01APR05 A	03JUN05 A	
ASRLDW5110	CP41 & CP43 - SL4-003a	02JUL05 A	24AUG05 A	
ASRLDW5200	F424 - F422	100JUL05 A	28JUL05 A	
ASRLDW5300	SL4-0010 - S407 & gullies	00APR05 A	28JUL05 A	
ASRLDW5400	CP47 & CP48 - S408	27JUL05 A	18JUN05 A	
ASRLDW5500	S409 - SL4-003a	14JUN05 A	13JUN05 A	

**Section 5**  
Road 14

Legend:  
 ■ Early bar  
 ■ Progress bar  
 ■ Check bar  
 ◆ Summary bar  
 ◆ Start milestone point  
 ◆ Finish milestone point

Program bar  
 Check bar  
 Summary bar  
 Start milestone point  
 Finish milestone point

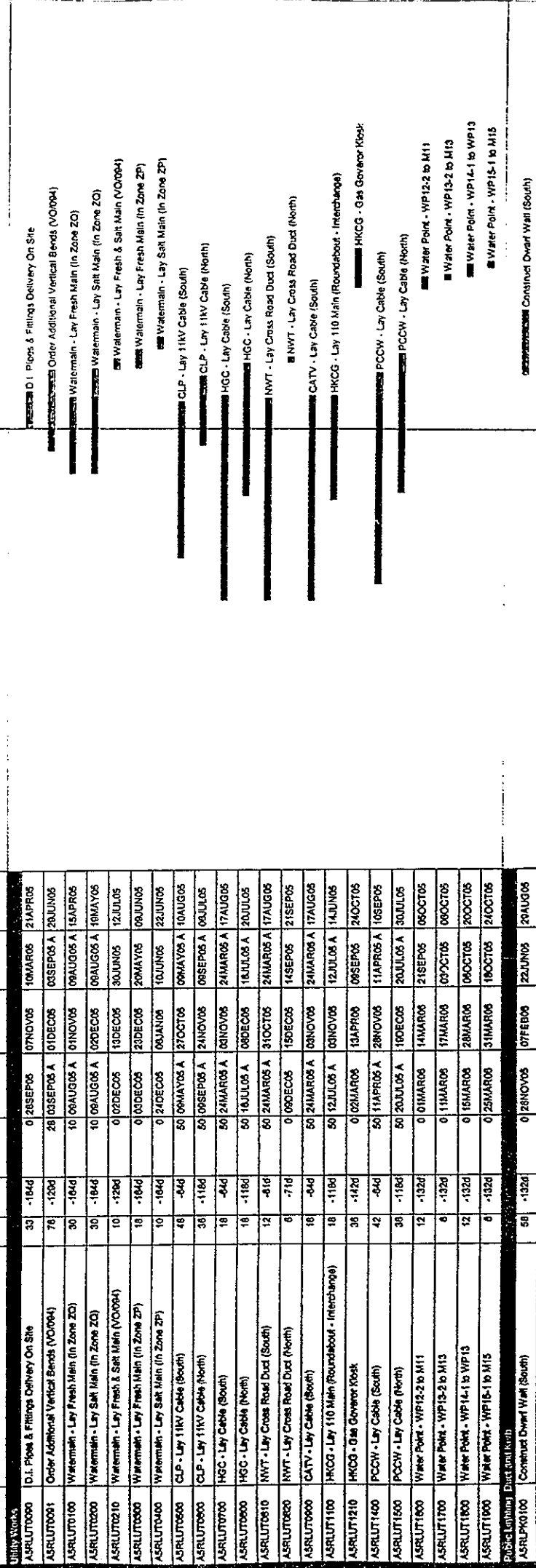
10 JUN 04  
 20 OCT 07  
 28 SEP 05  
 17 OCT 05  
 17A

Elwy bar  
 Progress bar  
 Check bar  
 Summary bar  
 Start milestone point  
 Finish milestone point

Leader - Wal Koo (C&T) Joint Venture  
 TP37/03 - Revised Works Programme - RP04

LEADER  
 WALTER  
 1991

ID	Description	Out-Dur.	Total Dur.	Percent Complete	Start	Finish	Sign.
ASRLDW4500	F428 - Downstream	15		100	18AUG05 A	27AUG05 A	18AUG05 A
ASRLDW4500	Connection Point - S410 - S407 (1800)	18		100	08APR05 A	28MAY05 A	08APR05 A
ASRLDW4610	SL4-010a - S408 & gullies	18	-1186	0	28SEP05	20OCT05	08MAY05
ASRLDW4620	SL4-011a - S410 & gullies	18	-826	40	31AUG05 A	10OCT05	31AUG05 A
ASRLDW4630	CPA11 - SL4-011b	10	-216	0	12OCT05	22OCT05	26SEP05
ASRLDW4640	CPA1 - SL4-015a	10		100	14SEP05 A	21SEP05 A	14SEP05 A
ASRLDW4650	SL4-007c - S408 & gullies	18	-860	0	12OCT05	01NOV05	14JUN05
ASRLDW4660	SL4-017a - SL4-028a & gullies	18		100	21JUL05 A	15AUG05 A	21JUL05 A
ASRLDW4670	SL4-015b - SL4-015a & gullies	10	-1106	0	14SEP05 A	28SEP05 A	14SEP05 A
ASRLDW4680	SL4-028a - SL4-028a	10	-358	0	28SEP05	10OCT05	19MAY05
ASRLDW4700	UC - CPA1 & CPA2	22	-276	0	28SEP05	25OCT05	29AUG05
ASRLDW4720	UC - CPA3	10	-358	0	28SEP05	10OCT05	17AUG05
ASRLDW4730	UC - CPA4	10	-358	0	28SEP05	10OCT05	17AUG05
ASRLDW4740	UC - CPA5, CPA6, CPA7 & CPA8	25	-144	0	12OCT05	09NOV05	23SEP05
ASRLDW4750	UC - CPA9	10	16	0	12OCT05	22OCT05	19OCT05
ASRLDW4760	UC - CPA11	10	-216	0	24OCT05	03NOV05	27SEP05
ASRLDW4770	Additional Sub-soil Drain (South) (VO047A)	12	-1326	0	02NOV05	15NOV05	28MAY05
ASRLDW4780	Additional UC at Footpath (South) (VO047A)	18	-1310	0	08FEB06	28FEB06	31AUG05
ASRLDW4790	Additional UC at Cycle Track (North) (VO051)	18	-826	0	20DEC05	11JAN06	31AUG05
ASRLDW4800	Demolish Existing 825, 825 & 1050 Drainpipe	30	-86	10	10SEP05 A	31OCT05	10SEP05 A
ASRLUT0090	D.I. Piles & Fittings Delivery On Site	33	-1846	0	28SEP05	07NOV05	10MAR05
ASRLUT0091	Order Additional Vertical Bends (VO094)	78	-1206	28	03SEP05 A	01DEC05	03SEP05 A
ASRLUT0100	Watermain - Lay Fresh Main (In Zone 2D)	30	-1846	10	08AUG05 A	01NOV05	08AUG05 A
ASRLUT0200	Watermain - Lay Salt Main (In Zone 2C)	30	-1846	10	08AUG05 A	02DEC05	08AUG05 A
ASRLUT0210	Watermain - Lay Fresh & Salt Main (VO094)	10	-1266	0	02DEC05	10DEC05	30JUN05
ASRLUT0300	Watermain - Lay Fresh Main (In Zone 2F)	18	-1846	0	03DEC05	23DEC05	20MAY05
ASRLUT0400	Watermain - Lay Salt Main (In Zone 2F)	10	-1846	0	24DEC05	08JAN06	10JUN05
ASRLUT0500	CLP - Lay 11kV Cable (South)	48	-846	50	09MAY05 A	27OCT05	09MAY05 A
ASRLUT0600	CLP - Lay 11kV Cable (North)	36	-1186	50	09SEP05 A	21NOV05	09SEP05 A
ASRLUT0700	HGC - Lay Cable (South)	18	-846	50	24MAR05 A	01NOV05	24MAR05 A
ASRLUT0800	HGC - Lay Cable (North)	18	-1186	50	18JUL05 A	08DEC05	18JUL05 A
ASRLUT0910	NWT - Lay Cross Road Duct (South)	12	-816	60	24MAR05 A	31OCT05	24MAR05 A
ASRLUT0920	NWT - Lay Cross Road Duct (North)	6	-716	0	09DEC05	15DEC05	14SEP05
ASRLUT0990	CATV - Lay Cable (South)	18	-846	50	24MAR05 A	03NOV05	24MAR05 A
ASRLUT1100	HKCG - Lay 110 Main (Roundabout - Interchange)	18	-1186	50	12JUL05 A	03NOV05	12JUL05 A
ASRLUT1210	HKCG - Gas Governor Kiosk	36	-1426	0	02MAR06	13APR06	09SEP05
ASRLUT1400	PCCW - Lay Cable (South)	42	-846	50	11APR05 A	28NOV05	11APR05 A
ASRLUT1600	PCCW - Lay Cable (North)	36	-1186	50	20JUL05 A	18DEC05	20JUL05 A
ASRLUT1700	Water Point - WP12-2 to M11	12	-1326	0	01MAR06	14MAR06	21SEP05
ASRLUT1800	Water Point - WP13-2 to M13	6	-1326	0	11MAR06	17MAR06	09OCT05
ASRLUT1900	Water Point - WP14-1 to WP13	12	-1326	0	15MAR06	28MAR06	08OCT05
ASRLUT2000	Water Point - WP15-1 to M15	6	-1326	0	25MAR06	31MAR06	24OCT05
ASRLPK0100	Construct Dwarf Wall (South)	58	-1326	0	28NOV05	07FEB06	22JUN05



**Utility Works**

Legend:

- Entry bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

ASRLUT0100 10JUN06  
ASRLUT0200 20OCT07  
ASRLUT0300 28SEP05  
ASRLUT0400 17OCT05  
ASRLUT0500 16A

**TP37103 - Revised Works Programme - RP04**

Leader - Wai Koo (C&T) Joint Venture

WALKER  
LEADER  
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2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

ACT ID	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASRLP0020	Construct Dearth Wall (North)	12	-120d	0	18JAN05	03FEB06	16AUG05	20AUG05
ASRLP0030	Lay Kerb (South)	10	-102d	0	16NOV05	26NOV05	06JUN06	21JUN06
ASRLP0040	Lay Kerb (North)	22	-184d	0	07JAN06	03FEB06	23JUN06	18JUL06
ASRLP0050	Lay Kerb (Parking Area)	20	-35d	0	12OCT05	03NOV05	29AUG05	21SEP05
ASRLP0060	Drainpit & Duct (South)	22	-71d	0	16NOV05	10DEC05	22AUG05	15SEP05
ASRLP0070	Drainpit & Duct (North)	22	-128d	0	21JAN06	17FEB06	22AUG05	15SEP05
ASRLP0080	Drainpit & Duct (CT)	20	-32d	0	18OCT05	16NOV05	07SEP05	08OCT05

ACT ID	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASLEP0100	Road Pavement, Cycle Track & Footpath	68	-184d	0	04FEB06	22APR06	23JUL05	06OCT05
ASLRP0200	Construct Temporary Cycle Track (Phase 1)	9	-	100	16APR05	20APR05	16APR05	20APR05
ASLRP0300	Complete Outstanding Drainage & Road Pavement	6	-58d	0	24DEC05	02JAN06	18OCT05	24OCT05
ASLRP0400	Removal of Temporary Cycle Track	3	-58d	0	21DEC05	29DEC05	14OCT05	17OCT05
ASLRP0500	Possess Additional Works Area	0	-	100	21APR05		21APR05	
ASLRP0600	Construct Temporary Cycle Track (Phase 2)	10	-	100	22APR05	11MAY06	22APR05	11MAY06

**Legend**

■ ERM Works

■ Roadworks

■ Drainage Works

■ Cycle Track

■ Other Works

1. Decide Exact Location of Manholes & Catchpits

2. S774 - Existing Box Culvert (In ZJ)

3. S775 - S774 (In ZJ)

4. S780 - Culvert (In ZJ)

5. S786 - S788 (In ZG1)

6. S785 - S789 (In Remaining ZG1)

7. F410 - F414 (In ZG1)

8. F408 - F410 (In Remaining ZG1)

9. F409 - TM02

10. D.I. Pipes & Fittings Delivery On Site

11. Watermain - Lay Fresh & Salt Main (In ZJ, South)

12. Watermain - Lay Fresh & Salt Main (In ZJ, North)

13. Watermain - Lay Fresh & Salt Main (In ZG1)

14. CLP - Lay 132kV Cable (In ZJ, North)

15. CLP - Lay 132kV Cable (In ZG1)

16. CLP - Lay 132kV Cable (In Remaining ZG1)

17. CLP - Lay 11kV Cable (In ZJ, North)

18. CLP - Lay 11kV Cable (In ZG1)

19. CLP - 11kV Cable (In Remaining ZG1)

Start date 10JUN04

Finish date 20OCT07

Start date 26SEP05

Finish date 31OCT05

Start date 18A

Finish date

Legend

■ ERM Works

■ Roadworks

■ Drainage Works

■ Cycle Track

■ Other Works

Legend

■ ERM Works

■ Roadworks

■ Drainage Works

■ Cycle Track

■ Other Works

Legend

■ ERM Works

■ Roadworks

■ Drainage Works

■ Cycle Track

■ Other Works



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ACTIVITY	Description	Orig. Dur	Total Dur	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	
AECTU0720	CLP - 11kV Cable Connection (in ZG 1)	12	-12d	100	04NOV05	17NOV05	10JUN05	24JUN05	
AECTU0700	CLP - Lay LV Cable (in ZJ, South)	17	-12d	100	28FEB05 A	14MAR05 A	28FEB05 A	14MAR05 A	
AECTU0710	CLP - Lay LV Cable (in ZJ, North)	11	-12d	0	28OCT05	07NOV05	02JUN05	15JUN05	
AECTU1000	CLP - Lay LV Cable (in ZG 1)	11	-12d	0	21OCT05	02NOV05	28MAY05	06JUN05	
AECTU1010	CLP - Lay LV Cable (in Remaining ZG 1)	11	-12d	0	28SEP05	12OCT05	28MAY05	06JUN05	
AECTU1020	CLP - LV Cable Connection (in ZG 1)	12	-12d	0	06NOV05	18NOV05	16JUN05	24JUN05	
AECTU1400	HKCG - Lay 250 Gas Main (in ZJ) (Deleted)	35		100	06JAN05 A	06JAN05 A	06JAN05 A	06JAN05 A	
AECTU1600	HKCG - Lay 250 Gas Main (in ZG 1) (Deleted)	14		100	06JAN05 A	06JAN05 A	06JAN05 A	06JAN05 A	
<b>Public Lighting, Duct and Drawoffs</b>									
AECTPK0100	Lay Kerb (in ZJ, South)	15	-11d	0	04OCT05	21OCT05	23MAY05	08JUN05	
AECTPK0110	Lay Kerb (in ZJ, North)	10	-12d	0	08NOV05	18NOV05	18JUN05	27JUN05	
AECTPK0200	Lay Kerb (in ZG 1)	12	-13d	0	18NOV05	29NOV05	10JUN05	24JUN05	
AECTPK0300	Lighting Ducts and Drawoffs	24	-13d	0	18NOV05	13DEC05	10JUN05	08JUL05	
AECTPK0400	Lighting Posts	12	-13d	0	14DEC05	29DEC05	11JUL05	23JUL05	
<b>Roads and Pavement</b>									
AECTRP0100	Lay Cycle Track Pavement (in ZJ, South)	28	-10d	0	22OCT05	23NOV05	18JUN05	18JUL05	
AECTRP0110	Lay Cycle Track Pavement (in ZJ, North)	18	-12d	0	18NOV05	09DEC05	28JUN05	19JUL05	
AECTRP0200	Lay Cycle Track Pavement (in ZG 1)	15	-12d	0	28NOV05	13DEC05	02JUL05	19JUL05	
<b>Road Marking, Traffic Signs and Signals</b>									
AECTRM0100	Apply Road Marking	4	-12d	0	14DEC05	17DEC05	20JUL05	23JUL05	
AECTRM0200	Erect Signage	12	-11d	0	28NOV05	09DEC05	11JUL05	23JUL05	
AECTRM0300	Construct Fence	21	-11d	0	18NOV05	13DEC05	28JUN05	23JUL05	
<b>Landscaping Handworks</b>									
AECTHL0100	Construct Planter Wall (in ZJ, South)	48	-11d	0	12OCT05	03DEC05	30MAY05	23JUL05	
AECTHL0110	Construct Planter Wall (in ZJ, North)	18	-11d	0	18NOV05	09DEC05	04JUL05	23JUL05	
AECTHL0200	Construct Planter Wall (in ZG 1)	18	-12d	0	30NOV05	20DEC05	04JUL05	23JUL05	
<b>SECTION 7</b>									
<b>Temporary Traffic Management Scheme</b>									
<b>TTA Implementation</b>									
ATTMS0500	Apply & Issue XP for TTA Nos. 10 - 12	1		100	08SEP04 A	21FEB05 A	19SEP04 A	21FEB05 A	
ATTMS0100	Implement TTA No. 10	1		100	24FEB05 A	24FEB05 A	24FEB05 A	24FEB05 A	
ATTMS0200	Implement TTA No. 11	1		100	11MAY05 A	11MAY05 A	11MAY05 A	11MAY05 A	
ATTMS0300	Implement TTA No. 12	1		100	21MAR05 A	21MAR05 A	21MAR05 A	21MAR05 A	
ATTMS0400	Apply & Issue XP for TTA Nos. 48 - 51	71	-14d	98	07JUL05 A	28SEP05	07JUL05 A	07APR05	
ATTMS0500	Implement TTA No. 48 (VO0300E, 063A & 073)	1	-14d	0	07OCT05	07OCT05	15APR05	15APR05	
ATTMS0600	Implement TTA No. 49 (VO0300E, 063A & 073)	1	-14d	0	31OCT05	31OCT05	09MAY05	09MAY05	
ATTMS0700	Implement TTA No. 50 (VO0300E, 063A & 073)	1	-14d	0	29NOV05	29NOV05	08JUN05	08JUN05	
ATTMS0800	Implement TTA No. 51 (VO0300E)	1	-14d	0	21DEC05	21DEC05	02JUL05	02JUL05	
<b>Leadsheet Work No. 3</b>									
<b>Lead Sheet Work Structure</b>									
ATLCHS0100	Drilling (Two Drillholes)	16		100	23SEP04 A	30SEP04 A	23SEP04 A	30SEP04 A	
ATLCHS0200	Taking Up of Existing Armour to +2.5	3		100	25OCT04 A	27OCT04 A	25OCT04 A	27OCT04 A	
ATLCHS0220	Taking Up of Existing Underlayer to +2.5	2		100	30OCT04 A	01NOV04 A	30OCT04 A	01NOV04 A	
ATLCHS0240	Taking Up of Existing Rubble to +2.5	14		100	08NOV04 A	19NOV04 A	08NOV04 A	19NOV04 A	
ATLCHS0300	Demolish Existing Outfall Units	6		100	21NOV04 A	28NOV04 A	21NOV04 A	28NOV04 A	
ATLCHS0400	Taking Up Existing 3200 Dia. Concrete Pipe	8	-15d	0	07NOV05	14NOV05	02JUN05	08JUN05	
ATLCHS0420	Taking Up of Existing Armour, Below +2.5	5	-15d	0	02NOV05	09NOV05	28MAY05	01JUN05	

■ CLP - Lay LV Cable (in ZJ, South)  
 ■ HKCG - Lay 250 Gas Main (in ZJ) (Deleted)  
 ■ HKCG - Lay 250 Gas Main (in ZG 1) (Deleted)

■ Lay Kerb (in ZJ, South)  
 ■ Lay Kerb (in ZJ, North)  
 ■ Lay Kerb (in ZG 1)  
 ■ Lighting Ducts and Drawoffs  
 ■ Lighting Posts

■ Lay Cycle Track Pavement (in ZJ, South)  
 ■ Lay Cycle Track Pavement (in ZJ, North)  
 ■ Lay Cycle Track Pavement (in ZG 1)  
 ■ Apply Road Marking  
 ■ Erect Signage  
 ■ Construct Fence  
 ■ Construct Planter Wall (in ZJ, South)  
 ■ Construct Planter Wall (in ZJ, North)  
 ■ Construct Planter Wall (in ZG 1)

■ Apply & Issue XP for TTA Nos. 48 - 51  
 ■ Implement TTA No. 48 (VO0300E, 063A & 073)  
 ■ Implement TTA No. 49 (VO0300E, 063A & 073)  
 ■ Implement TTA No. 50 (VO0300E, 063A & 073)  
 ■ Implement TTA No. 51 (VO0300E)

■ Drilling (Two Drillholes)  
 ■ Taking Up of Existing Armour to +2.5  
 ■ Taking Up of Existing Underlayer to +2.5  
 ■ Taking Up of Existing Rubble to +2.5  
 ■ Demolish Existing Outfall Units

■ Taking Up Existing 3200 Dia. Concrete Pipe  
 ■ Taking Up of Existing Armour, Below +2.5

■ Apply & Issue XP for TTA Nos. 10 - 12  
 ■ Implement TTA No. 10  
 ■ Implement TTA No. 11  
 ■ Implement TTA No. 12

**Leader - Wai Koo (C&T) Joint Venture**  
**TP3703 - Revised Works Programme - RP04**

Start date	10.0.2004	Empty bar
Finish date	20.03.07	Progress bar
0% date	28SEP05	Critical bar
50% date	17OCT05	Summary bar
20% date	20A	Start milestone point
		Finish milestone point

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ACT ID	Description	Ulg Dur	Total Dur	Percent Complete	Start	End	Finish	Lat	Long	File No.	Date	Status	Remarks
ATLONS040	Taking Up of Existing Underlayer, Below +2.5	2	-152d	0	07NOV05	08NOV05	08JUN05						Taking Up of Existing Underlayer, Below +2.5
ATLONS050	Taking Up of Existing Rubble, Below +2.5	18	-156d	0	15NOV05	02DEC05	10JUN05						Placing Leveling Stone
ATLONS030	Block Wall Construction	23	-158d	0	02DEC05	28DEC05	28JUN05						Backfill Rubble Behind
ATLONS000	Reinstate 3200 Dia. Concrete Pipe	31	-158d	0	20DEC05	25JAN06	21JUL05						Reinstate 3200 Dia. Concrete Pipe
ATLNS10700	Fabrication of Box Culvert Outfalls	10	-159d	0	21JAN06	08FEB06	30AUG05						Fabrication of Box Culvert Outfalls
ATLNS1000	Install Box Culvert Outfalls	14	-158d	0	09FEB06	22FEB06	13SEP05						Install Box Culvert Outfalls
ATLNS1100	Install Remaining Blocks for Both Side Outfall	70	-104d	0	11DEC05	22FEB06	29AUG05						Install Remaining Blocks for Both Side Outfall
ATLNS1200	Reinstate Armour & Underlayer	12	-104d	0	23FEB06	08MAR06	07NOV05						Reinstate Armour & Underlayer
ATLNS1100	Install Remaining Blocks for Both Side Outfall	4	-104d	0	07MAR06	10MAR06	18NOV05						Install Remaining Blocks for Both Side Outfall
ATLNS1200	Reinstate Armour & Underlayer	10	-104d	0	11MAR06	20MAR06	23NOV05						Reinstate Armour & Underlayer

ACT ID	Description	Ulg Dur	Total Dur	Percent Complete	Start	End	Finish	Lat	Long	File No.	Date	Status	Remarks
ATWPP0100	Construct Irrigation Pump House	48	-13d	0	22NOV05	18JAN06	07NOV05						Construct Irrigation Pump House
ATWPDW100	Decide Exact Location of Manholes & Catchpits	1		100	28JUL04	28JUL04	28JUL04						Decide Exact Location of Manholes & Catchpits
ATWPDW020	S708 - S714	50	-88d	80	13OCT04	01OCT05	18OCT04						S708 - S714
ATWPDW030	S701 - S708	46		100	13OCT04	14DEC04	14DEC04						S701 - S708
ATWPDW040	S714 - Existing Box Culvert	30	-123d	0	03FEB05	08MAR06	05SEP05						S714 - Existing Box Culvert
ATWPDW050	F901 - F902 (TTA No. 10) Partially Aborted	18		100	25FEB05	24JUN05	25FEB05						F901 - F902 (TTA No. 10) Partially Aborted
ATWPDW060	F902 - F903 (TTA No. 11) Aborted	34		100	10MAY05	24JUN05	10MAY05						F902 - F903 (TTA No. 11) Aborted
ATWPDW070	F903 - F904 (TTA No. 12)	16		100	08APR05	08MAY05	08APR05						F903 - F904 (TTA No. 12)
ATWPDW0720	F901 - F902 (TTA No. 48) (VO030E)	6	-144d	0	08OCT05	15OCT05	16APR05						F901 - F902 (TTA No. 48) (VO030E)
ATWPDW0740	F901 - F902 (TTA No. 49) (VO030E)	12	-144d	0	01NOV05	14NOV05	10MAY05						F901 - F902 (TTA No. 49) (VO030E)
ATWPDW0760	F901 - F902 (TTA No. 50) (VO030E)	18	-144d	0	30NOV05	20DEC05	08JUN05						F901 - F902 (TTA No. 50) (VO030E)
ATWPDW0780	F902 - F903 (TTA No. 51) (VO030E)	24	-144d	0	22DEC05	20JAN06	04JUL05						F902 - F903 (TTA No. 51) (VO030E)
ATWPDW0800	F904 - Existing Manhole	28		100	04APR05	18JUN05	04APR05						F904 - Existing Manhole
ATWPDW0900	S770 - S773 - S771 (VO073)	25	-13d	0	28SEP05	28OCT05	12SEP05						S770 - S773 - S771 (VO073)
ATWPDW0920	S773 - Ext. Manhole (TTA No. 48) (VO073)	18	-144d	0	08OCT05	28OCT05	19APR05						S773 - Ext. Manhole (TTA No. 48) (VO073)
ATWPDW0940	S773 - Ext. Manhole (TTA No. 49) (VO073)	18	-138d	0	01NOV05	21NOV05	18MAY05						S773 - Ext. Manhole (TTA No. 49) (VO073)
ATWPDW0960	S773 - Ext. Manhole (TTA No. 50) (VO073)	24	-125d	0	30NOV05	20DEC05	04JUL05						S773 - Ext. Manhole (TTA No. 50) (VO073)
ATWPDW1000	CP 102 - CP 104 (In ZU)	20	-13d	0	28OCT05	21NOV05	14OCT05						CP 102 - CP 104 (In ZU)
ATWPDW1050	Ext MH - MH-3d - F901 (VO058A)	20	-78d	0	08DEC05	03JAN06	08SEP05						Ext MH - MH-3d - F901 (VO058A)
ATWPDW1100	S718 - Existing Box Culvert	22	-132d	0	23FEB06	20MAR06	14SEP05						S718 - Existing Box Culvert
ATWPDW1200	225 Dia. Perforated Drain (In ZS 8, End - 200m)	26	-82d	0	08NOV05	02DEC05	27JUL05						225 Dia. Perforated Drain (In ZS 8, End - 200m)
ATWPDW1280	225 Dia. Perforated Drain (In ZS 200m - 400m)	26	-88d	0	22NOV05	21DEC05	27JUL05						225 Dia. Perforated Drain (In ZS 200m - 400m)
ATWPDW1300	225HR & Catchpit with 2000.L along Parapet Wall	12	-132d	0	14APR06	27APR06	18NOV05						225 Dia. Perforated Drain (In ZS 400m - N. End)
ATWPDW1500	225UC (In ZU)	50	-83d	0	04MAR06	03MAY06	11NOV05						225HR & Catchpit with 2000.L along Parapet Wall
ATWPDW1600	300UC (In ZU)	24	-47d	0	28NOV05	22DEC05	28OCT05						225UC (In ZU)
ATWPDW1700	225Dia. Perforated Drain (In ZU)	25	-47d	0	23DEC05	23JAN06	29OCT05						300UC (In ZU)
ATWPDW1800	300 CUC (In ZUS)	21	-48d	0	22NOV05	15DEC05	27SEP05						225Dia. Perforated Drain (In ZU)
ATWPDW1900	225 Dia. Perforated Drain (In ZUS)	18	35d	0	29OCT05	18NOV05	06DEC05						300 CUC (In ZUS)
ATWPDW2000	D.I. Pipes & Filings Delivery On Site	18	-78d	0	04JAN06	24JAN06	30SEP05						225 Dia. Perforated Drain (In ZUS)

ACT ID	Description	Ulg Dur	Total Dur	Percent Complete	Start	End	Finish	Lat	Long	File No.	Date	Status	Remarks
ATWPPU0100	Watermain - Lay Salt Main (TTA No. 10) Aborted	10		100	16APR05	24JUN05	16APR05						Watermain - Lay Salt Main (TTA No. 10) Aborted
ATWPPU0200	D.I. Pipes & Filings Delivery On Site	30	-85d	46	27APR05	16OCT05	27APR05						D.I. Pipes & Filings Delivery On Site
ATWPPU0300	Order Additional Valve & Bend (VO093)	76	-120d	22	08SEP05	07DEC05	08SEP05						Order Additional Valve & Bend (VO093)

Start date 10JUN04  
 Finish date 20OCT07  
 Data date 28SEP05  
 Run date 17OCT05  
 Page number 2/4

Legend:  
 ■ E my bar  
 ■ Progress bar  
 ■ Critical bar  
 ■ Summary bar  
 ◆ Start milestone point  
 ◆ Finish milestone point

C Primavera Systems, Inc.

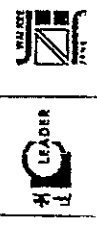
Leader - Wai Keo (C&T) Joint Venture  
 TP37103 - Revised Works Programme - RP04

ID	Activity	Start	Finish	Duration	Notes
ATWPH0200	Watermain - Lay SW Main (TTA No. 11) Aborted	10MAY05 A	24JUN05 A	10MAY05 A	24JUN05 A
ATWPH0200	Watermain - Lay SW Main (TTA No. 48) (VO063A)	17OCT05	23APR06	07MAY06	
ATWPH0200	Watermain - Lay SW Main (TTA No. 48) (VO063A)	15NOV05	25MAY05	07JUN05	
ATWPH0400	Watermain - Lay SW Main (TTA No. 50) (VO063A)	30NOV05	28DEC05	04JUL05	30JUL05
ATWPH0500	CLP - Lay LV Cable	08AUG05 A	28SEP05	08AUG05 A	30JUL05
ATWPH0600	PCCW - Lay Cable	23NOV05	26JAN06	31AUG05	05NOV05
ATWPH0700	PCCW - Lay Cable (Landscape Node P3)	14APR06	27APR06	06JAN06	21JAN06
ATWPH0700	Watermain (In ZU)	11JUL05	11JUL05	30JUL05	
ATWPH0800	Issue Allocation Warrant to WSD (VO068)	28SEP05	27OCT05	27JUN05	25JUL05
ATWPH0900	Relocation of Fire Hydrant in ZU by WSD (VO068)	28OCT05	24NOV05	23JUL05	22AUG05
ATWPH1000	HKCG - 315AMP Diversion at SP Road (Additional)	11JUL05 A	27JUL05 A	11JUL05 A	27JUL05 A
ATWPH1100	CLP - 132KV Diversion at SP Road (Additional)	08AUG05 A	08AUG05 A	08AUG05 A	18AUG05 A
ATWPH1200	Public Lighting (In ZU)	09DEC05	21FEB06	21OCT05	31DEC05
ATWPH1300	Public Lighting (In Zs)	15FEB06	28APR06	31OCT05	10JAN06
ATWPH1400	Lay Paving Block (In ZU)	22FEB06	28MAR06	02JAN06	07FEB06
ATWPH1500	Lay Paving Block (In Zs)	28MAR06	08JUN06	05DEC05	16FEB06
ATWPH1600	Finishing Works (In ZU)	07FEB06	18MAR06	18JAN06	21FEB06
ATWPH1700	Finishing Works (In Zs)	27FEB06	03MAY06	19DEC05	21FEB06
ATWPH1800	Impaction System (In ZU)	08APR06	15MAY06	04JAN06	08FEB06
ATWPH1900	Impaction System (In Zs)	22APR06	30MAY06	02JAN06	05FEB06
ATWPH2000	E&M Works	10APR06	18MAY06	04JAN06	06FEB06
ATWPH2100	Testing and Commissioning	08MAY06	12JUN06	16JAN06	21FEB06
ATWPH2200	Erect Signage	04MAY06	08JUN06	16JAN06	21FEB06
ATWPH2300	Apply Road Marking	30MAY06	13JUN06	06FEB06	21FEB06
ATWPH2400	Planter Wall (In ZS, South End - 100m)	10OCT05	02NOV05	04JUL05	26JUL05
ATWPH2500	Planter Wall (In ZS, 100 - 200m)	18APR05 A	08OCT05	18APR05 A	02JUL05
ATWPH2600	Planter Wall (In ZS, 200 - 300m)	20OCT05	21NOV05	04JUL05	26JUL05
ATWPH2700	Planter Wall (In ZS, 300 - 400m)	05OCT05	28OCT05	08JUN05	02JUL05
ATWPH2800	Planter Wall (In ZS, 400 - North End)	02MAR06	13APR06	13OCT05	04NOV05
ATWPH2900	Planter Wall (In ZU)	21MAY05 A	08DEC05	21MAY05 A	09SEP05
ATWPH3000	Fill Rock to Parapet Wall Formation (VO066)	10JUN05 A	08OCT05	16JUN05 A	18JUN05
ATWPH3100	Parapet Wall along Seawall (500m)	10OCT05	03MAR06	26JUN05	10NOV05
ATWPH3200	Parapet Wall along Landscape Node P3 (100m)	02MAR06	18APR06	03DEC05	02JAN06
ATWPH3300	Construct Curve Trellis (In ZU)	28SEP05	08DEC05	07SEP05	18NOV05
ATWPH3400	Construct Perpetis (In ZU)	09DEC05	06FEB06	18NOV05	14JAN06
ATWPH3500	Construct Perpetis (In ZS)	27JAN06	25FEB06	07NOV05	03DEC05
ATWPH3600	Water Point WP26-1 to 26-3 (In ZU)	03MAR06	07APR06	28NOV05	03JAN06
ATWPH3700	Water Point WP27-1 to 27-4 (In ZS)	02DEC05	10JAN06	26AUG05	123SEP05
ATWPH3800	Water Point WP28-1 to 28-2 (In ZS)	11JAN06	27JAN06	19OCT05	01NOV05
ATWPH3900	Water Point WP28-1 to 28-4 (In ZS)	28APR06	18MAY06	18NOV05	09DEC05

Legend:  
 ■ Early bar  
 ■ Progress bar  
 ■ Critical bar  
 --- Summary bar  
 ◆ Start milestone point  
 ◆ Finish milestone point

City of Irvine, California  
 Project: TP37103 - Revolved Works Programme - RP04  
 Leader - Wal Kee (C&T) Joint Venture  
 c Primavera Systems, Inc.

Item No.	Activity	Start	Finish	Duration	Early Start	Early Finish	Slack	Predecessors
1	Drilling (Two Driftholes)	01/09/2023	01/09/2023	1	01/09/2023	01/09/2023	0	
2	Taking Up of Existing Armour to +2.5	02/09/2023	02/09/2023	1	02/09/2023	02/09/2023	0	1
3	Taking Up of Existing Underlayer to +2.5	03/09/2023	03/09/2023	1	03/09/2023	03/09/2023	0	2
4	Taking Up of Existing Rubble to +2.5	04/09/2023	04/09/2023	1	04/09/2023	04/09/2023	0	3
5	Demolish Existing Outfall Units	05/09/2023	05/09/2023	1	05/09/2023	05/09/2023	0	4
6	DSD Approval of Removal of 5 Cells Culvert	06/09/2023	06/09/2023	1	06/09/2023	06/09/2023	0	5
7	Taking Up Existing 5 Cells Box Culvert Units	07/09/2023	07/09/2023	1	07/09/2023	07/09/2023	0	6
8	Taking Up of Existing Armour Below +2.5	08/09/2023	08/09/2023	1	08/09/2023	08/09/2023	0	7
9	Taking Up of Existing Underlayer Below +2.5	09/09/2023	09/09/2023	1	09/09/2023	09/09/2023	0	8
10	Taking Up of Existing Rubble Below +2.5	10/09/2023	10/09/2023	1	10/09/2023	10/09/2023	0	9
11	Placing Leveling Stone	11/09/2023	11/09/2023	1	11/09/2023	11/09/2023	0	10
12	Block Wall Construction	12/09/2023	12/09/2023	1	12/09/2023	12/09/2023	0	11
13	Backfill Rubble Behind	13/09/2023	13/09/2023	1	13/09/2023	13/09/2023	0	12
14	Reinstate 5 Cells Box Culvert Units	14/09/2023	14/09/2023	1	14/09/2023	14/09/2023	0	13
15	Fabrication of 5 Cells Outfall Units	15/09/2023	15/09/2023	1	15/09/2023	15/09/2023	0	14
16	Install 5 Cells Outfall Units	16/09/2023	16/09/2023	1	16/09/2023	16/09/2023	0	15
17	Install Remaining Blocks for Both Side Outfall	17/09/2023	17/09/2023	1	17/09/2023	17/09/2023	0	16
18	Reinstate Armour & Underlayer	18/09/2023	18/09/2023	1	18/09/2023	18/09/2023	0	17
19	Drilling (Two Driftholes)	19/09/2023	19/09/2023	1	19/09/2023	19/09/2023	0	18
20	Taking Up of Existing Armour to +2.5	20/09/2023	20/09/2023	1	20/09/2023	20/09/2023	0	19
21	Taking Up of Existing Underlayer to +2.5	21/09/2023	21/09/2023	1	21/09/2023	21/09/2023	0	20
22	Taking Up of Existing Rubble to +2.5	22/09/2023	22/09/2023	1	22/09/2023	22/09/2023	0	21
23	Demolish Existing Outfall Units	23/09/2023	23/09/2023	1	23/09/2023	23/09/2023	0	22
24	Taking Up Existing 2500 Dia. Concrete Pipe	24/09/2023	24/09/2023	1	24/09/2023	24/09/2023	0	23
25	Taking Up of Existing Armour Below +2.5	25/09/2023	25/09/2023	1	25/09/2023	25/09/2023	0	24
26	Taking Up of Existing Underlayer Below +2.5	26/09/2023	26/09/2023	1	26/09/2023	26/09/2023	0	25
27	Taking Up of Existing Rubble Below +2.5	27/09/2023	27/09/2023	1	27/09/2023	27/09/2023	0	26
28	Placing Leveling Stone	28/09/2023	28/09/2023	1	28/09/2023	28/09/2023	0	27
29	Block Wall Construction (Stage 1)	29/09/2023	29/09/2023	1	29/09/2023	29/09/2023	0	28
30	Block Wall Construction (Stage 2)	30/09/2023	30/09/2023	1	30/09/2023	30/09/2023	0	29
31	Backfill Rubble Behind (Stage 1)	31/09/2023	31/09/2023	1	31/09/2023	31/09/2023	0	30
32	Backfill Rubble Behind (Stage 2)	01/10/2023	01/10/2023	1	01/10/2023	01/10/2023	0	31
33	Reinstate 2500 Dia. Pipe Culvert	02/10/2023	02/10/2023	1	02/10/2023	02/10/2023	0	32
34	Fabrication of Box Culvert Outfall	03/10/2023	03/10/2023	1	03/10/2023	03/10/2023	0	33
35	Install Box Culvert Outfall	04/10/2023	04/10/2023	1	04/10/2023	04/10/2023	0	34
36	Install Remaining Blocks for Both Side Outfall	05/10/2023	05/10/2023	1	05/10/2023	05/10/2023	0	35
37	Reinstate Armour & Underlayer	06/10/2023	06/10/2023	1	06/10/2023	06/10/2023	0	36
38	Diversion of Ext. Cycle Track (Phase 2)	07/10/2023	07/10/2023	1	07/10/2023	07/10/2023	0	37
39	Removal of Ext. Cycle Track Pavement (Phase 2)	08/10/2023	08/10/2023	1	08/10/2023	08/10/2023	0	38
40	Take Up / Divert Ext. Utility Services (Phase 2)	09/10/2023	09/10/2023	1	09/10/2023	09/10/2023	0	39



Leader - Wai Kee (C&T) Joint Venture  
 TP37103 - Revised Works Programme - RP04

Legend:  
 ■ Early bar  
 ■ Progress bar  
 ■ Critical bar  
 ■ Summary bar  
 ● Start milestones point  
 ◆ Finish milestones point

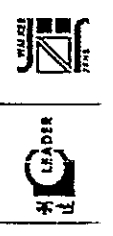


S	ART ID	Description	GID Dnr	Total Fiol	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	2004											
										JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	ASWPDW1000	225 Perforated Drain (in ZR)	19	184	0	03MAR06	30MAR06	30MAR06	21APR06											225 Perforated Drain (in ZR)	
	ASWPDW2000	225 Perforated Drain (in ZK)	18	284	0	14MAR06	03APR06	17APR06	08MAY06											225 Perforated Drain (in ZK)	
	ASWPDW3100	225 Perforated Drain (in ZJ)	9	374	0	08FEB06	18FEB06	24MAR06	03APR06											225 Perforated Drain (in ZJ)	
	ASWPDW2200	225 Perforated Drain (in ZJ5)	5	463	0	03FEB06	08FEB06	28MAR06	03APR06											225 Perforated Drain (in ZJ5)	
	ASWPDW2300	225 Perforated Drain (ZJ - Node P1 South)	24	184	0	08FEB06	07MAR06	01MAY06	28MAR06											225 Perforated Drain (ZJ - Node P1 South)	
	ASWPDW2350	225 Perforated Drain (ZJ, ZK, ZL1)	18	184	0	23DEC05	14JAN06	13JAN06	04FEB06											225 Perforated Drain (ZJ, ZK, ZL1)	
	ASWPDW2400	Remove Existing 3200 Drains	30		100	28APR06 A	08JUN06 A	28APR06 A	08JUN06 A											Remove Existing 3200 Drains	
	<b>Utility Works</b>																				
	ASWPUT0000	D.I. Pipes & Fittings Delivery On Site	30	264	0	01OCT05	30OCT05	06SEP05	04OCT05											D.I. Pipes & Fittings Delivery On Site	
	ASWPUT0100	Watermain - Lay S&T Main	18	684	0	18NOV05	08DEC05	06SEP05	27SEP05											Watermain - Lay S&T Main	
	ASWPUT0700	PCCW - Lay Cable (in ZR)	48	174	0	27JAN06	23MAR06	07JAN06	06MAR06											PCCW - Lay Cable (in ZR)	
	ASWPUT0800	PCCW - Lay Cable (in ZK)	22	174	0	15APR06	11MAY06	23MAR06	20APR06											PCCW - Lay Cable (in ZK)	
	ASWPUT0900	PCCW - Lay Cable (in ZJ)	10	174	0	03APR06	14APR06	14MAR06	24MAR06											PCCW - Lay Cable (in ZJ)	
	ASWPUT1000	PCCW - Lay Cable (in ZJ5)	6	174	0	27MAR06	01APR06	07MAR06	13MAR06											PCCW - Lay Cable (in ZJ5)	
	ASWPUT1100	PCCW - Lay Cable (in ZJ, ZK, ZL1)	44	324	0	23DEC05	18FEB06	03FEB06	25MAR06											PCCW - Lay Cable (in ZJ, ZK, ZL1)	
	ASWPUT1200	HKCG - 32GRP Riser	3	284	0	08JAN06	11JAN06	13FEB06	15FEB06											HKCG - 32GRP Riser	
	ASWPUT1300	HKCG - 90 GRP Riser	5	284	0	12JAN06	17JAN06	16FEB06	21FEB06											HKCG - 90 GRP Riser	
	ASWPUT1400	HKCG - 83 GRP Riser	3	284	0	18JAN06	20JAN06	22FEB06	24FEB06											HKCG - 83 GRP Riser	
	<b>Public Lighting / Drains</b>																				
	ASWPPR0000	Public Lighting Ducts & Drains Along Promenade	60	864	0	14MAR06	24MAY06	28JUN06	04SEP06											Public Lighting Ducts & Drains Along Promenade	
	ASWPPR0400	Install Public Lighting	24	864	0	23MAY06	22JUN06	05SEP06	02OCT06											Install Public Lighting	
	<b>Paving Works</b>																				
	ASWPPR0100	Lay Paving Block (in ZR)	48	254	0	08JUL06	02SEP06	07AUG06	02OCT06											Lay Paving Block (in ZR)	
	ASWPPR0200	Lay Paving Block (in ZK)	24	254	0	18JUN06	14JUL06	17JUL06	12AUG06											Lay Paving Block (in ZK)	
	ASWPPR0300	Lay Paving Block (in ZJ)	12	274	0	30MAY06	13JUN06	03JUL06	15JUL06											Lay Paving Block (in ZJ)	
	ASWPPR0400	Lay Paving Block (in ZJ5)	12	274	0	18MAY06	28MAY06	17JUN06	30JUN06											Lay Paving Block (in ZJ5)	
	ASWPPR0600	Lay Paving Block (in ZJ, ZK, ZL1)	60	324	0	03FEB06	09MAY06	13MAR06	18JUN06											Lay Paving Block (in ZJ, ZK, ZL1)	
	<b>Finishing Works</b>																				
	ASWPPR0700	Finishing Works	60	684	0	08JUN06	18AUG06	29AUG06	09NOV06												Finishing Works
	<b>E &amp; M Works</b>																				
	ASWPEM0000	Irrigation System	50	1174	0	22APR06	21JUN06	06SEP06	08NOV06												Irrigation System
	ASWPEM1000	E & M Works	30	864	0	23JUN06	28JUL06	03OCT06	06NOV06												E & M Works
	<b>Road Marking / Signage</b>																				
	ASWPPR0500	Apply Road Marking	30	254	0	04SEP06	09OCT06	03OCT06	08NOV06												Apply Road Marking
	ASWPPR0600	Ered Signage	21	254	0	14SEP06	09OCT06	14OCT06	08NOV06												Ered Signage
	<b>Planter Wall / Retention</b>																				
	ASWPHL0100	Planter Wall (in ZR)	60	0	20	22AUG06 A	09MAR06	22AUG06 A	08MAR06												Planter Wall (in ZR)
	ASWPHL0200	Planter Wall (in ZK)	28	284	0	06FEB06	13MAR06	14MAR06	15APR06												Planter Wall (in ZK)
	ASWPHL0300	Planter Wall (in ZJ)	13	284	0	23JAN06	08FEB06	27FEB06	13MAR06												Planter Wall (in ZJ)
	ASWPHL0400	Planter Wall (in ZJ5)	8	274	0	23JAN06	07FEB06	28FEB06	09MAR06												Planter Wall (in ZJ5)
	ASWPHL0500	Planter Wall (ZJ - Landscape Node 1 South)	40	164	0	18DEC05	07FEB06	11JAN06	28FEB06												Planter Wall (ZJ - Landscape Node 1 South)
	ASWPHL0600	Planter Wall (ZM, ZL1, ZL2)	80	164	20	02JUL06 A	22DEC06	02JUL06 A	12JAN06												Planter Wall (ZM, ZL1, ZL2)
	ASWPHL0650	Fill Rock to Parapet Wall Formation (VD0606)	60	254	20	10AUG06 A	24NOV06	10AUG06 A	23DEC06												Fill Rock to Parapet Wall Formation (VD0606)
	ASWPHL0700	Parapet Wall along Sewer (in ZR)	47	254	0	03MAR06	17APR06	01APR06	27MAY06												Parapet Wall along Sewer (in ZR)
	ASWPHL0800	Parapet Wall along Sewer (in ZK)	22	254	0	23MAY06	22JUN06	22JUN06	15JUL06												Parapet Wall along Sewer (in ZK)
	ASWPHL0900	Parapet Wall along Sewer (in ZJ)	12	254	0	09MAY06	22MAY06	08JUN06	21JUN06												Parapet Wall along Sewer (in ZJ)
	ASWPHL1000	Parapet Wall along Sewer (in ZJ5)	6	254	0	28APR06	09MAY06	29MAY06	07JUN06												Parapet Wall along Sewer (in ZJ5)

Start date	10/06/04	Early bar
Finish date	20/07/07	Progress bar
Bar style	25SEP05	Critical bar
Bar style	17OCT05	Summary bar
Bar style	25A	Start/intermediate point
Bar style		Finish milestone point

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Lender - Wal Koo (C&T) Joint Venture  
 TP37103 - Revised Works Programme - RP04



AS ID	Orig. Description	Total Bur.	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASWPHL1100	Parapet Wall along Seawall (in 2J, 2M, 2L1)	80	25%	02NOV05	02MAR06	24DEC05	31MAR06
ASWPHL1200	Construct Parapets (3 nos.)	72	85%	01JUN06	05JUN06	28AUG06	28AUG06
ASWPHL1300	Water Point WP24-4 to 24-1	15	21%	03MAY06	18APR06	28APR06	13MAY06
ASWPHL1400	Water Point WP23-3 to 22-1	18	18%	03MAY06	21APR06	22APR06	13MAY06
ASWPHL1500	Water Point WP21-3 to 21-1	12	28%	05APR06	18APR06	09MAY06	23MAY06
ASWPHL1600	Water Point WP20-6 to 20-1	21	37%	02FEB06	15MAR06	05APR06	28APR06
ASWPHL1700	Water Point WP19-4 to 19-1	15	18%	08MAR06	24MAR06	28MAR06	15APR06
ASWPHL1800	Water Point WP18-3 to 18-2	12	21%	08MAR06	21APR06	01APR06	15APR06
ASWPHL1900	Water Point WP17-5 to 17-1	18	16%	16JAN06	07FEB06	08FEB06	25FEB06
ASWPHL2000	Water Point WP16-3 to 16-1	12	22%	16JAN06	28JAN06	13FEB06	25FEB06
ASWPHL2300	ASD's Contractor Works	303	57%	02SEP05	27SEP06	22JUL06	22JUL06

**Station 9**  
Public Landing Shop  
ASD's Contractor Works

AS ID	Description	Total Bur.	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASLMA0100	Propose Monitoring Plan for DSD's Submarine Pipe	30	100%	01SEP04	08SEP04	01SEP04	08SEP04
ASLMA0200	Engineer & DSD Approval of Monitoring Plan	30	100%	07SEP04	01MAR05	07SEP04	01MAR05
ASLMA0300	Setup Monitoring for DSD's Submarine Pipeline	30	100%	14MAR05	14MAR05	14MAR05	14MAR05
ASLMA0400	Drilling & CPPT	30	100%	11OCT04	11OCT04	11OCT04	11OCT04
ASLMA0500	Taking Up of Existing Armour to +2.5	2	100%	06NOV04	06NOV04	06NOV04	06NOV04
ASLMA0610	Taking Up of Existing Underlayer to +2.5	3	100%	11NOV04	13NOV04	11NOV04	13NOV04
ASLMA0600	Taking Up of Existing Rubble to +2.5	3	100%	17NOV04	19NOV04	17NOV04	19NOV04
ASLMA0610	Taking Up of Existing Armour Below +2.5	3	100%	24NOV04	27NOV04	24NOV04	27NOV04
ASLMA0620	Taking Up of Underlayer Below +2.5	3	100%	08DEC04	08DEC04	08DEC04	08DEC04
ASLMA0630	Taking Up of Existing Rubble Below +2.5	5	100%	13DEC04	18DEC04	13DEC04	18DEC04
ASLMA0640	Taking Up of rubble at Seawall Foundation	13	100%	11MAR05	11MAR05	11MAR05	11MAR05
ASLMA0700	Dredging of Marine Mud	20	100%	16MAR05	24MAR05	16MAR05	24MAR05
ASLMA0800	Placing of Rubble Foundation	15	100%	28MAR05	19APR05	28MAR05	19APR05
ASLMA0830	Placing Leveling Stone	23	100%	20APR05	28SEP05	20APR05	28SEP05
ASLMA0800	Block Wall Construction 2 Layers from Bottom (N)	6	100%	04MAY05	31MAY05	04MAY05	31MAY05
ASLMA0900	Block Wall Construction 2 Layers from Bottom (S)	5	100%	17JUL05	24AUG05	17JUL05	24AUG05
ASLMA0910	Block Wall Construction to Top Level	50	100%	28APR05	28AUG05	28APR05	28AUG05
ASLMA0920	Placing of Bermstones	3	100%	11SEP05	11SEP05	11SEP05	11SEP05
ASLMA1000	Backfill the Rubble Behind	14	201%	80	12SEP05	28SEP05	22APR06
ASLMA1100	Backfill the G200 Roadfill Behind	4	201%	0	30SEP05	03OCT05	23APR06

AS ID	Description	Total Bur.	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ASLW0100	Submit Shop Drawings & Calculation of Roof Cover	30	100%	15AUG05	16SEP05	15AUG05	16SEP05
ASLW0200	Engineer Approval of Shop Drawings & Calculation	30	56%	10OCT05	16SEP05	16SEP05	16DEC05
ASLW0400	Procurement of Pyramid Skylight	120	86%	01OCT05	04MAR06	23JAN06	18JUN06
ASLW0600	Procurement of Structural Steel	120	56%	01OCT05	04MAR06	18DEC05	11MAY06
ASLW0700	Delivery of Pyramid Skylight	30	86%	01MAR06	10APR06	17JUN06	22JUL06
ASLW0800	Delivery of Structural Steel	30	56%	01MAR06	10APR06	13MAY06	18JUN06
ASLW0900	Inspection & Testing	30	56%	01APR06	18MAY06	17JUN06	22JUL06
ASLW1000	Fabrication & Painting of Steel Works	48	56%	01MAY06	18MAY06	24JUL06	18SEP06
ASLW1100	Concrete Coping with 10 tonnes Bollard & Handrail	30	170%	01OCT05	08NOV05	27APR06	02JUN06
ASLW11100	Construct Shelter Footing	24	108%	01JAN06	21FEB06	03JUN06	30JUN06
ASLW11200	Construct Shelter Column	30	144%	02FEB06	28MAR06	14AUG06	18SEP06

**Legend:**  
 ■ Early bar  
 ■ Progress bar  
 ■ Critical bar  
 ■ Summary bar  
 ◆ Start milestone point  
 ◆ Finish milestone point

**ASD's Contractor Works**

**WALCO LEADER**

**Leader - Wal Keo (C&T) Joint Venture**  
TP37/03 - Revised Works Programme - RP04

ACT ID	Description	Qty	Unit	Total	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
ADLSLW1300	Concrete Shelter Roof	24	Sq	580	0	14JUL06	10AUG06	18SEP06	10OCT06
ADLSLW1400	Public Lighting	8	Sq	840	0	11AUG06	18AUG06	17OCT06	25OCT06
ADLSLW1500	Rubber, Step & Land Step Fender	18	Sq	540	0	21AUG06	06SEP06	28OCT06	16NOV06
ADLSLW1600	Surface Mounted Seals	18	Sq	360	0	11SEP06	30SEP06	17NOV06	07DEC06
ADLSLW1700	Concrete In situ Concrete Paving	18	Sq	840	0	02OCT06	21OCT06	08DEC06	28DEC06

**Section 10**  
Remainder Works

ACT ID	Description	Qty	Unit	Total	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
BORWYH0100	Miscellaneous works	1	107d	107d	0	03MAR06	03MAR06	11JUL06	11JUL06
BORWYH0200	EI to Demolish HY9802 CRE Office	30	107d	107d	0	25MAR06	29APR06	02AUG06	05SEP06
BORWYH0300	EI to Demolish HY9802 Contractor's Office	1	100	22NOV04 A	100	22NOV04 A	22NOV04 A	22NOV04 A	22NOV04 A
BORWYH0400	Demolish HY9802 Contractor's Office (P1)	30	100	21MAY05 A	100	21MAY05 A	27MAY05 A	27MAY05 A	27MAY05 A
BORWYH0500	EI to Remove Run-in & Reinstate FF/CT	1	129d	0	02MAY06	02MAY06	02OCT06	02OCT06	02OCT06
BORWYH0600	Remove Run-in & Reinstate FF/CT	18	111d	0	15JUN06	04JUL06	25OCT06	15NOV06	15NOV06
BORWYH0700	EI to Demolish Existing Paving	1	107d	0	02MAY06	02MAY06	06SEP06	06SEP06	06SEP06
BORWYH0800	Demolish Existing Paving (P1)	18	107d	0	24MAY06	14JUN06	20SEP06	14OCT06	14OCT06
BORWYH0900	EI to Fencing Around LO Site	1	111d	0	07JUL06	07JUL06	18NOV06	18NOV06	18NOV06
BORWYH1000	Fencing Around LO Site (P1)	18	111d	0	26JUL06	18AUG06	08DEC06	28DEC06	28DEC06

**Section 11**  
Area SA6, SA11B & SA11C

ACT ID	Description	Qty	Unit	Total	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
B1AASL0100	Soil Mix (Section 5)	24	-132d	0	09FEB06	07MAR06	30AUG06	27SEP06	27SEP06
B1AASL0200	Soil Mix (in ZS, South End - 100m)	10	-67d	0	08DEC06	14DEC06	13SEP06	24SEP06	24SEP06
B1AASL0300	Soil Mix (in ZS, 100 - 200m)	10	-86d	0	11JAN06	21JAN06	13SEP06	24SEP06	24SEP06
B1AASL0400	Soil Mix (in ZS, 200 - 300m)	10	-86d	0	11JAN06	21JAN06	02NOV06	12NOV06	12NOV06
B1AASL0500	Soil Mix (in ZS, 300 - 400m)	10	-74d	0	28JAN06	10FEB06	02NOV06	12NOV06	12NOV06
B1AASL0600	Soil Mix (in ZS, 400 - North End)	10	-132d	0	17MAY06	27MAY06	07DEC06	17DEC06	17DEC06
B1AASL0700	Soil Mix (in ZU, 300m)	30	-78d	0	25JAN06	02MAR06	24OCT06	28NOV06	28NOV06
B1AASL0800	Planting Works	90	-132d	0	09MAR06	21JUN06	28SEP06	12JAN06	12JAN06
B1AASL0900	Groundcovers Works	50	-132d	0	28MAY06	27JUL06	18DEC06	18FEB06	18FEB06
B1AASL1000	Root Barrier (ZS, 100m - 200m) (VO0654)	12	-76d	0	03DEC06	18DEC06	30AUG06	12SEP06	12SEP06
B1AASL1100	Root Barrier (ZS, 200m - 300m) (VO0654)	12	-56d	0	22DEC06	06JAN06	19OCT06	01NOV06	01NOV06
B1AASL1200	Root Barrier (ZS, 300m - 400m) (VO0654)	12	-56d	0	22DEC06	06JAN06	19OCT06	01NOV06	01NOV06
B1AASL1300	Root Barrier (ZS, 400m - N. End) (VO0654)	2	-118d	0	28APR06	28APR06	03DEC06	08DEC06	08DEC06

**Section 12**  
Area SA7, SA10, SA11A, SA12 & SA13

ACT ID	Description	Qty	Unit	Total	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
B2ABSLO100	Soil Mix (in ZR, 360m)	47	18d	0	22APR06	17JUN06	15MAY06	10JUL06	10JUL06
B2ABSLO200	Soil Mix (in ZK, 180m)	24	28d	0	18APR06	17MAY06	23MAY06	20JUN06	20JUN06
B2ABSLO300	Soil Mix (in ZJ, 85m)	12	37d	0	24MAR06	07APR06	05MAY06	22MAY06	22MAY06
B2ABSLO400	Soil Mix (in ZJ, 50m)	7	37d	0	10MAR06	23MAR06	28APR06	08MAY06	08MAY06
B2ABSLO500	Soil Mix (ZJ - Landscape Node 1 South, 260m)	30	18d	0	25MAR06	28APR06	17APR06	22MAY06	22MAY06
B2ABSLO600	Soil Mix (ZJ, ZL1, ZJ)	71	16d	0	08FEB06	05MAY06	27FEB06	22MAY06	22MAY06
B2ABSLO700	Planting Works	90	18d	0	01MAY06	18AUG06	23MAY06	08SEP06	08SEP06
B2ABSLO800	Groundcovers Works	50	18d	0	18AUG06	17OCT06	07SEP06	01NOV06	01NOV06
B2ABSLO900	Root Barrier (in ZR) (VO066)	12	22d	0	16JAN06	23JAN06	13FEB06	25FEB06	25FEB06
B2ABS11000	Root Barrier (in ZR) (VO066)	2	34d	0	31MAR06	01APR06	12MAY06	13MAY06	13MAY06

**Section 13**  
Area SA7, SA10, SA11A, SA12 & SA13

ACT ID	Description	Qty	Unit	Total	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
B2ABSLO100	Soil Mix (in ZR, 360m)	47	18d	0	22APR06	17JUN06	15MAY06	10JUL06	10JUL06
B2ABSLO200	Soil Mix (in ZK, 180m)	24	28d	0	18APR06	17MAY06	23MAY06	20JUN06	20JUN06
B2ABSLO300	Soil Mix (in ZJ, 85m)	12	37d	0	24MAR06	07APR06	05MAY06	22MAY06	22MAY06
B2ABSLO400	Soil Mix (in ZJ, 50m)	7	37d	0	10MAR06	23MAR06	28APR06	08MAY06	08MAY06
B2ABSLO500	Soil Mix (ZJ - Landscape Node 1 South, 260m)	30	18d	0	25MAR06	28APR06	17APR06	22MAY06	22MAY06
B2ABSLO600	Soil Mix (ZJ, ZL1, ZJ)	71	16d	0	08FEB06	05MAY06	27FEB06	22MAY06	22MAY06
B2ABSLO700	Planting Works	90	18d	0	01MAY06	18AUG06	23MAY06	08SEP06	08SEP06
B2ABSLO800	Groundcovers Works	50	18d	0	18AUG06	17OCT06	07SEP06	01NOV06	01NOV06
B2ABSLO900	Root Barrier (in ZR) (VO066)	12	22d	0	16JAN06	23JAN06	13FEB06	25FEB06	25FEB06
B2ABS11000	Root Barrier (in ZR) (VO066)	2	34d	0	31MAR06	01APR06	12MAY06	13MAY06	13MAY06



Legend:  
 ■ Early bar  
 ■ Progress bar  
 ■ Critical bar  
 ■ Summary bar  
 ◆ Start milestone point  
 ◆ Finish milestone point



ID	Description	Start	Finish	Duration	Complete	Start	Finish	Early Start	Early Finish
<b>Section 13</b>									
Area SA1, SA2, SA3, SA4 & SA5									
Landscape Soilworks									
BMAUSL0100	Soil Mix (Area SA1 - South Section)	30	113d	0	10APR06	15MAY06	28AUG06	28SEP06	
BMAUSL0200	Soil Mix (Area SA1 - North Section)	30	107d	0	17APR06	23MAY06	23AUG06	28SEP06	
BMAUSL0300	Soil Mix (Car Park, Loading & Unloading Area)	6	51d	0	02SEP06	08SEP06	09NOV06	09NOV06	
BMAUSL0400	Soil Mix (Area Adjacent Road SL3)	30	57d	0	18JUN06	21JUL06	23AUG06	28SEP06	
BMAUSL0500	Planting Works	60	57d	0	22JUL06	28SEP06	27SEP06	07DEC06	
BMAUSL0600	Planting Works (Car Park, Loading/Unloading Area)	6	85d	0	08SEP06	15SEP06	20DEC06	28DEC06	
Area SA6, SA9, SA16, SA18, SA19, SA17 & SA18									
Landscape Soilworks									
BMAUSL0100	Planting Works	45	107d	0	24MAY06	17JUL06	28SEP06	21NOV06	
BMAUSL0200	Groundcovers Works	30	107d	0	18JUL06	21AUG06	22NOV06	28DEC06	
<b>Section 14</b>									
Area SA6, SA16 & SA18									
Establishment Works									
BMAEW0100	Establishment Works	300	+127d	0	28JUL06	21JUL07	28FEB06	17FEB07	
<b>Section 15</b>									
Area SA7, SA10, SA11A, SA12 & SA15									
Establishment Works									
BMAEW0100	Establishment Works	300	20d	0	19OCT06	12OCT07	11NOV06	06NOV07	
<b>Section 16</b>									
Area SA1, SA2, SA3, SA4 & SA5									
Establishment Works									
BMAEW0200	Establishment Works	320	87d	0	30SEP06	20OCT07	06DEC06	28DEC07	
Area SA6, SA9, SA16, SA18, SA17 & SA18									
Establishment Works									
BMAEW0100	Establishment Works	300	111d	0	22AUG06	15AUG07	02JAN07	28DEC07	

■ Soil Mix (Area SA1 - South Section)  
 ■ Soil Mix (Area SA1 - North Section)  
 ■ Soil Mix (Car Park, Load  
 ■ Soil Mix (Area Adjacent Road SL3)  
 ■ Planting Works  
 ■ Planting Works (Car P.  
 ■ Groundcovers Works  
 ■ Planting Works  
 ■ Groundcovers Works

Legend:  
 Start Milestone  
 Finish Milestone  
 Early Start  
 Early Finish  
 Duration  
 Complete  
 Start  
 Finish

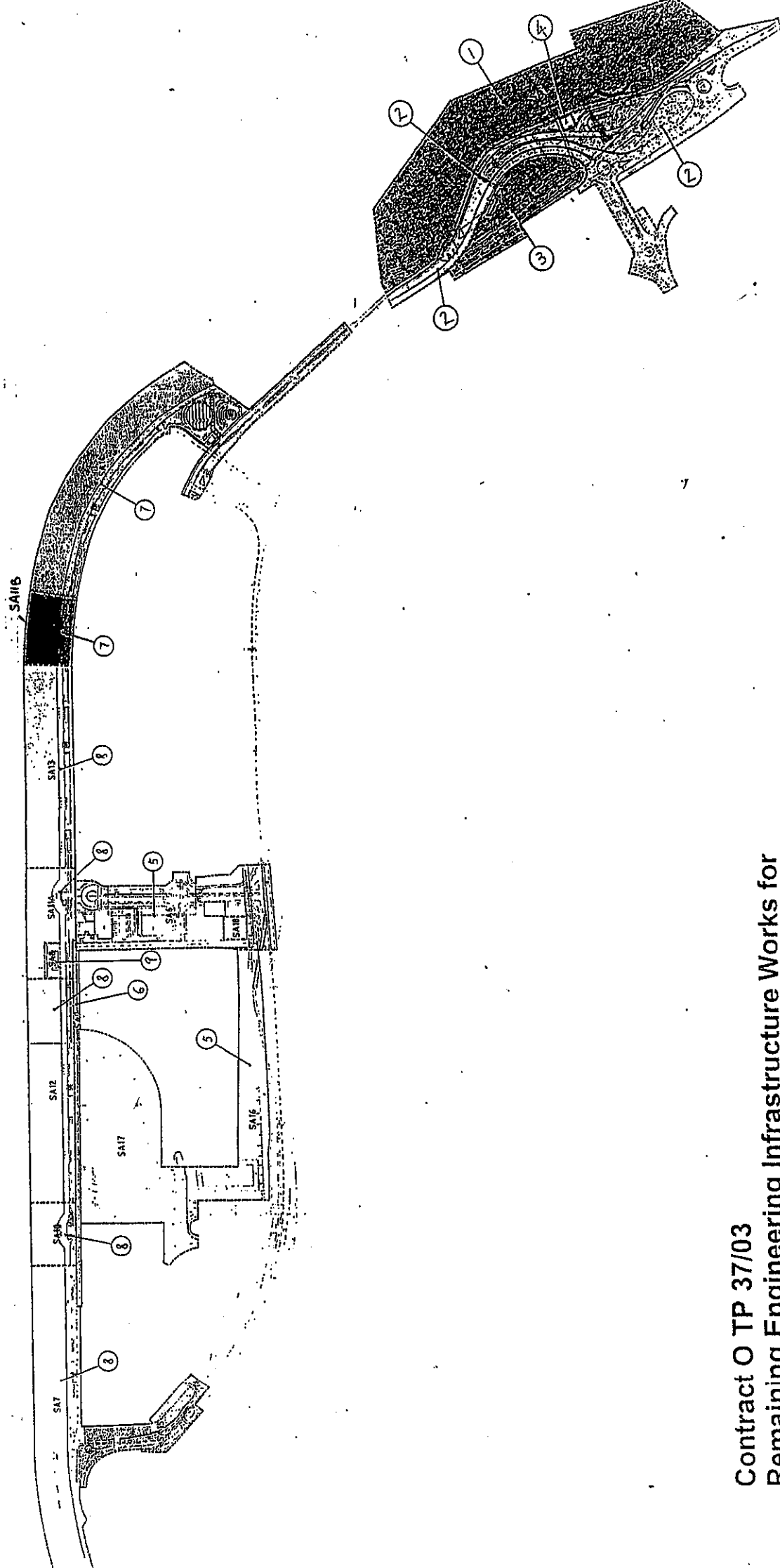



Leader - Wal Kee (C&T) Joint Venture  
 TP37/03 - Revised Works Programme - RP04



## **Appendix G**

### **Construction Site Area**



Contract O TP 37/03  
 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

Location and Key Plan



**Appendix H**

**The Implementation Status  
of  
Mitigation Measures and Follow-up Actions during Weekly  
Site Inspections**

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 9 September 2006 Inspected by Name : (RSS) Eric Lung (LWKUM) (ET) H.T. Chow  
 Time : 10:30 Signature : *[Signature]*  
 Weather Condition : Sunny / Fine / ~~Overcast~~ Drizzle / Rain / Storm / Hazy  
 Wind : Calm / Light / Breeze / Strong Temperature : 31°C Humidity : High / Moderate / Low

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Air Quality</b>			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	<input checked="" type="checkbox"/>		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	<input checked="" type="checkbox"/>		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	<input checked="" type="checkbox"/>		
▪ The haul road should be either paved or regular watering.	<input checked="" type="checkbox"/>		
▪ Unpaved areas should be watered regularly to avoid dust generation.	<input checked="" type="checkbox"/>		
▪ The public road around the site entrance should be kept clean and free from dust.	<input checked="" type="checkbox"/>		
▪ Vehicle speed should be limited to 20 km/hr.	<input checked="" type="checkbox"/>		
▪ Wheel washing facilities should be provided at all main entrance of work site.	<input checked="" type="checkbox"/>		
▪ The enclosures should be around the main dust-generating activities.	<input checked="" type="checkbox"/>		
▪ Dusty materials should be sprayed prior to loading.	<input checked="" type="checkbox"/>		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	<input checked="" type="checkbox"/>		
▪ Vehicle and equipment should be switched off while not in use.	<input checked="" type="checkbox"/>		
▪ Open burning should be prohibited.	<input checked="" type="checkbox"/>		
<b>Noise</b>			
▪ The constructions works should be scheduled to minimize noise nuisance.	<input checked="" type="checkbox"/>		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	<input checked="" type="checkbox"/>		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	<input checked="" type="checkbox"/>		
▪ Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	<input checked="" type="checkbox"/>		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	<input checked="" type="checkbox"/>		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	<input checked="" type="checkbox"/>		
▪ Air compressors and hand held breakers should have noise labels.	<input checked="" type="checkbox"/>		
▪ Compressors and generators should operate with door closed.	<input checked="" type="checkbox"/>		
▪ Construction Noise Permits should be available for inspection.	<input checked="" type="checkbox"/>		

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Water Quality</b>				
<b>General Construction Activities</b>				
• Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓			#2
• Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓			
• All traps shall incorporate oil and grease removal facilities.	✓			
• Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓			
• All drainage facilities should be adequate for controlled release of storm flows.	✓			
• Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓			
• Open stockpiles of more than 50m <sup>3</sup> should be covered.	✓			Item ②
• Temporary stockpiles of excavated materials should be covered during rainstorms.	✓			
• Manholes should be covered and sealed.	✓			
• All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓			
• Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓			
• Vehicle washing facilities should be provided at every site exit.	✓			
• Vehicle washing facilities should be adequate to settle out the sand and silt.	✓			
• Washing area and road exiting from washing facility should be paved.	✓			
• Access road should have sufficient back fall toward washing facility.	✓			
<b>Dredging Activities</b>				
• Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.			✓	
• Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.			✓	
• All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.			✓	
• The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.			✓	
• All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.			✓	
• Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.			✓	
• Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.			✓	
• Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.			✓	

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<i>Filling Activities</i>				
Use of silt screen around the filling face to reduce the losses to the surrounding.	✓			
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.			✓	
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓			
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.			✓	
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during transportation.			✓	
<b>Waste Management</b>				
<i>Marine Dredged Sediment</i>				
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.			✓	
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.			✓	
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.			✓	
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.			✓	
Inspection of the barge loading to ensure that loss of material does not take place during transportation.			✓	
<b>Construction and Demolition (C&amp;D) Waste</b>				
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓			
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.	✓			
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓			
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling	✓			
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	✓			
• Be enclosed on at least 3 sides	✓			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓			
• Have adequate ventilation	✓			
• Be covered to prevent rainfall entering	✓			
• Be arranged so that incompatible materials are adequately separated	✓			
• Be clean and maintain regularly	✓			
• Disposal				
• Be via a licensed waste collector	✓			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓			
• Be a reuser of the waste, under approval from the EPD	✓			



**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge	✓			
• Commencing at the source of the spill, establish all current and potential impacted areas	✓			
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary	✓			
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials	✓			
• Dispose of materials as chemical wastes	✓			
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	✓			
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	✓			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓			
• The Environmental Permit should be displaced conspicuously on site	✓			
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓			
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓			
• All generators, fuel and oil storage are within bundle areas.	✓			
• Oil leakage from machinery, vehicle and plant is prevented.	✓			
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			

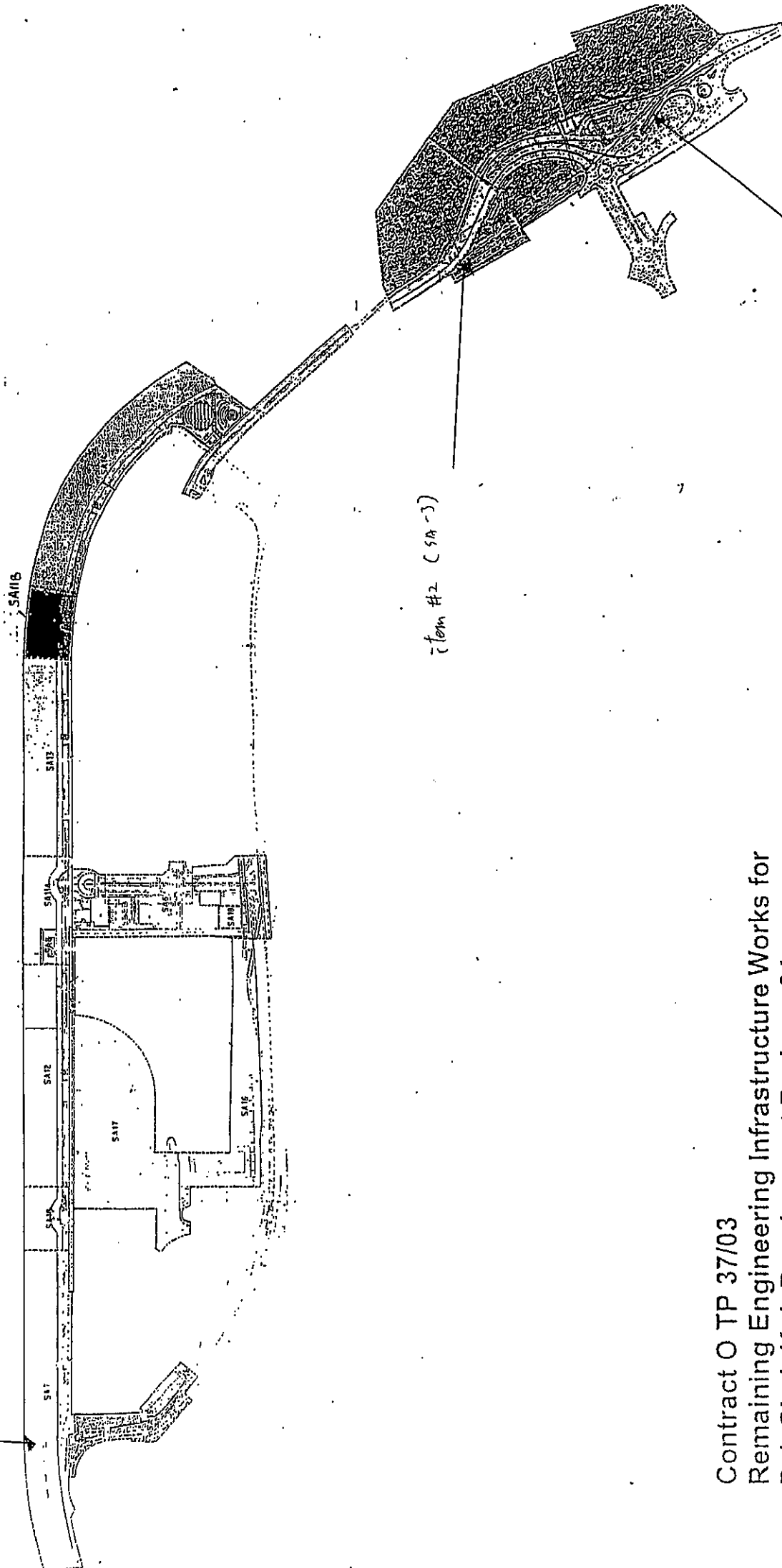
**Table for follow-up Action:**

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up action to previous site inspection item ① on (24-8-06) and item #3 (31-8-06), the main drainage channel was cleaned up.	Node 1	Follow up action was completed, no further action to be taken.	N/A
#2	Follow up action to previous site inspection item ③ on (24-8-06) and #1 (31-8-06), waste water was still found direct discharge to the sea.	SA-3	The Contractor should passing through the sedimentation tank before discharge.	14-9-06
#3	Follow up action to previous site inspection item ① on 31-8-2006, the waste water treatment facilities was installed.	Workshop	Follow up action was completed, no further action to be taken.	N/A
①	The generator at Node 1 was found without drip tray.	Node 1	The Contractor was reminded to provide drip tray for all generators.	14-9-06
②	Stockpile at SA-1 was found without covered sheet. The pH value checking was not carried out due to no water generated from discharge point.	SA-1	The Contractor was reminded to cover all stockpiles by tarpaulin sheets.	14-9-06

New 7

Signature:	RSS	LWK:JV	ET
Name:	Eric		
Date:	Eric Kwok 09-09-06	Eric Kwok 9/9/06	H. T. Chan 9-9-2006

Item ① (Node 1)



Item #2 (SA-3)

Item ② (SA-1)

Contract O TP 37/03  
Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

Location and Key Plan

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 14 September 2006 Inspected by Sunny Yeung (LWKJM) (ET) H.T. Chow  
 Time : 09:20 Signature : [Signature] (RSS) [Signature]  
 Weather : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy Temperature : 26 °C  
 Wind : Calm / Light / Breeze / Strong Humidity : High / Moderate / Low

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Air Quality</b>			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	<input checked="" type="checkbox"/>		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	<input checked="" type="checkbox"/>		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	<input checked="" type="checkbox"/>		
▪ The haul road should be either paved or regular watering.	<input checked="" type="checkbox"/>		
▪ Unpaved areas should be watered regularly to avoid dust generation.	<input checked="" type="checkbox"/>		
▪ The public road around the site entrance should be kept clean and free from dust.	<input checked="" type="checkbox"/>		
▪ Vehicle speed should be limited to 20 km/hr.	<input checked="" type="checkbox"/>		
▪ Wheel washing facilities should be provided at all main entrance of work site.	<input checked="" type="checkbox"/>		
▪ The enclosures should be around the main dust-generating activities.	<input checked="" type="checkbox"/>		
▪ Dusky materials should be sprayed prior to loading.	<input checked="" type="checkbox"/>		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	<input checked="" type="checkbox"/>		
▪ Vehicle and equipment should be switched off while not in use.	<input checked="" type="checkbox"/>		
▪ Open burning should be prohibited.	<input checked="" type="checkbox"/>		
<b>Noise</b>			
▪ The constructions works should be scheduled to minimize noise nuisance.	<input checked="" type="checkbox"/>		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	<input checked="" type="checkbox"/>		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	<input checked="" type="checkbox"/>		
▪ Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	<input checked="" type="checkbox"/>		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	<input checked="" type="checkbox"/>		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	<input checked="" type="checkbox"/>		
▪ Air compressors and hand held breakers should have noise labels.	<input checked="" type="checkbox"/>		
▪ Compressors and generators should operate with door closed.	<input checked="" type="checkbox"/>		
▪ Construction Noise Permits should be available for inspection.	<input checked="" type="checkbox"/>		

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Water Quality</b>				
<b>General Construction Activities</b>				
Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓			# 1
Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓			
All traps shall incorporate oil and grease removal facilities.	✓			
Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓			
All drainage facilities should be adequate for controlled release of storm flows.	✓			
Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓			# 2
Open stockpiles of more than 50m <sup>3</sup> should be covered.	✓			
Temporary stockpiles of excavated materials should be covered during rainstorms.	✓			
Manholes should be covered and sealed.	✓			
All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓			
Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓			
Vehicle washing facilities should be provided at every site exit.	✓			
Vehicle washing facilities should be adequate to settle out the sand and silt.	✓			
Washing area and road exiting from washing facility should be paved.	✓			
Access road should have sufficient back fall toward washing facility.	✓			
<b>Dredging Activities</b>				
Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	✓			
Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	✓			
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	✓			
The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	✓			
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	✓			
Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	✓			
Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	✓			
Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	✓			

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
Pak Shek Kok Development Package 2A

## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Filling Activities</b>				
• Use of silt screen around the filling face to reduce the losses to the surrounding.	✓			
• All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.			✓	
• The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓			
• All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.			✓	
• Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.			✓	
<b>Waste Management</b>				
<b>Marine Dredged Sediment</b>				
• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.			✓	
• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.			✓	
• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.			✓	
• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.			✓	
• Inspection of the barge loading to ensure that loss of material does not take place during transportation.			✓	
<b>Construction and Demolition (C&amp;D) Waste</b>				
• Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
• Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓			
• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
• In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.	✓			
• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓			
• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			



## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling	✓			
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	✓			
• Be enclosed on at least 3 sides	✓			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓			
• Have adequate ventilation	✓			
• Be covered to prevent rainfall entering	✓			
• Be arranged so that incompatible materials are adequately separated	✓			
• Be clean and maintain regularly	✓			
• Disposal				
• Be via a licensed waste collector	✓			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓			
• Be a reuser of the waste, under approval from the EPD	✓			

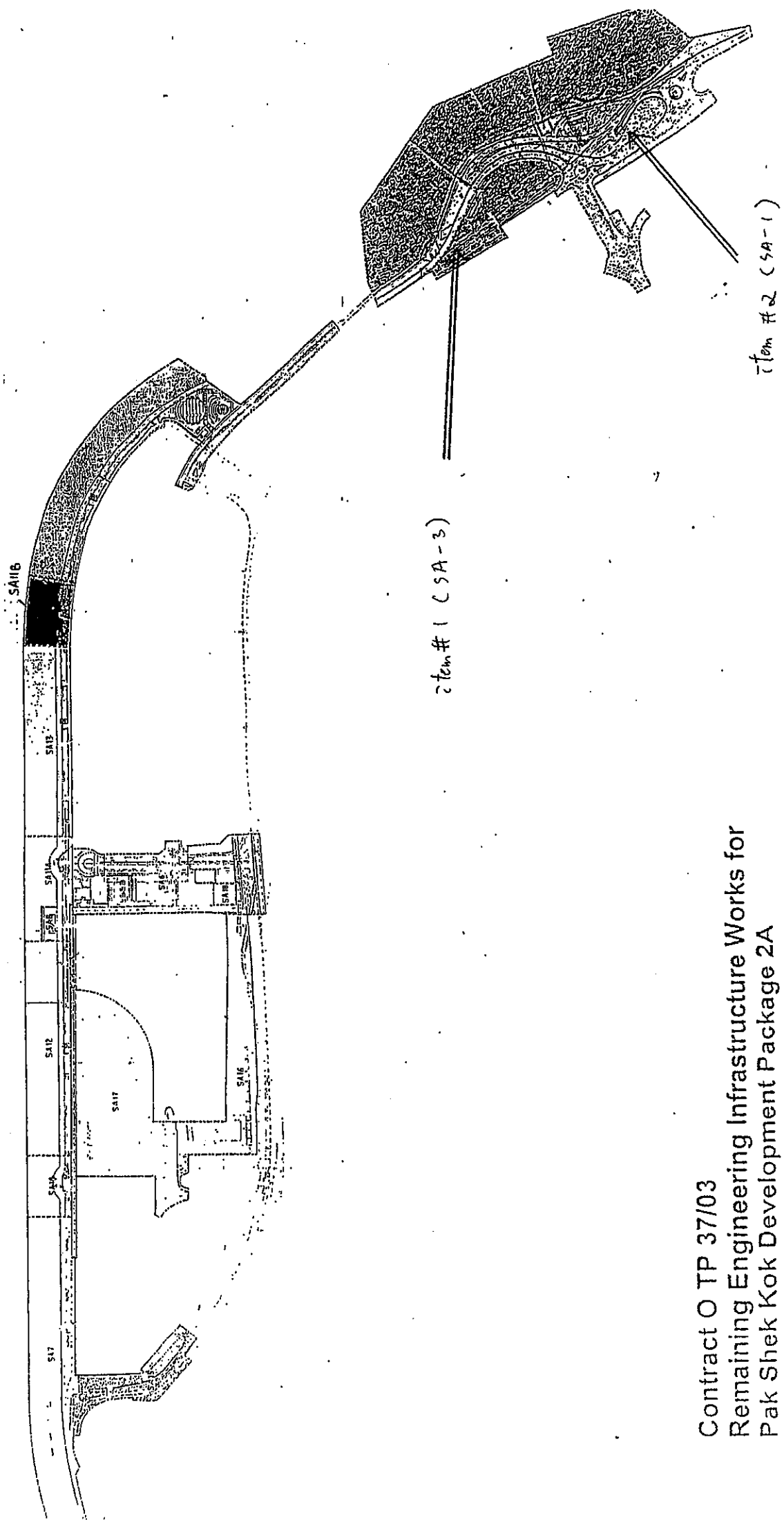


## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge	✓			
• Commencing at the source of the spill, establish all current and potential impacted areas	✓			
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary	✓			
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials	✓			
• Dispose of materials as chemical wastes	✓			
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	✓			
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	✓			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓			
• The Environmental Permit should be displaced conspicuously on site	✓			
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓			
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓			
• All generators, fuel and oil storage are within bundle areas.	✓			
• Oil leakage from machinery, vehicle and plant is prevented.	✓			
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			







Contract O TP 37/03  
 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

Location and Key Pan

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 22 Sept 2006      Inspected by : (RSS) *Sunny Y. E. Ho*      (LWK/M) *Ben tip*      (ET) *Hinda Lam*  
 Time : 14:30      Signature : *[Signature]*      *[Signature]*      *[Signature]*  
 Weather Condition : Sunny Fine Overcast / Drizzle / Rain / Storm / Hazy      Temperature : 30 °C  
 Wind : Calm Light Breeze / Strong      Humidity : High / Moderate / Low

**Mitigation Measures on Waste Management**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Air Quality</b>				
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	/			
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	/			# 2
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	/			
▪ The haul road should be either paved or regular watering.	/			
▪ Unpaved areas should be watered regularly to avoid dust generation.	/			
▪ The public road around the site entrance should be kept clean and free from dust.	/			
▪ Vehicle speed should be limited to 20 km/hr.	/			
▪ Wheel washing facilities should be provided at all main entrance of work site.	/			
▪ The enclosures should be around the main dust-generating activities.	/			
▪ Dusty materials should be sprayed prior to loading.	/			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	/			
▪ Vehicle and equipment should be switched off while not in use.	/			
▪ Open burning should be prohibited.	/			
<b>Noise</b>				
▪ The constructions works should be scheduled to minimize noise nuisance.	/			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	/			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	/			
▪ Plant known to emit noise strongly in on direction, should, where possible, should be orientated so that the noise is directed away from nearby NSPs.	/			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	/			
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	/			
▪ Air compressors and hand held breakers should have noise labels.	/			
▪ Compressors and generators should operate with door closed.	/			
▪ Construction Noise Permits should be available for inspection.	/			①

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Water Quality</b>				
<b>General Construction Activities</b>				
▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	/			
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	/			
▪ All traps shall incorporate oil and grease removal facilities.	/			
▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	/			
▪ All drainage facilities should be adequate for controlled release of storm flows.	/			
▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	/			
▪ Open stockpiles of more than 50m <sup>2</sup> should be covered.	/			#2
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.	/			#2
▪ Manholes should be covered and sealed.	/			
▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	/			
▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	/			
▪ Vehicle washing facilities should be provided at every site exit.	/			
▪ Vehicle washing facilities should be adequate to settle out the sand and silt.	/			
▪ Washing area and road exiting from washing facility should be paved.	/			
▪ Access road should have sufficient back fall toward washing facility.	/			
<b>Dredging Activities</b>				
▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	/			
▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	/			
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	/			
▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	/			
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	/			
▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	/			
▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	/			
▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	/			



**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Filling Activities</b>			
Use of silt screen around the filling face to reduce the losses to the surrounding.	/		
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.		/	
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	/		
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.		/	
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.		/	
<b>Waste Management</b>			
<b>Marine Dredged Sediment</b>			
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.		/	
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.		/	
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.		/	
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.		/	
Inspection of the barge loading to ensure that loss of material does not take place during transportation.		/	
<b>Construction and Demolition (C&amp;D) Waste</b>			
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	/		
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	/		
Proper protective measures, such as fences and tarpaulin, are provided, in order to protective the temporary stockpiled materials for later reuse / recycle.	/		
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	/		
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.	/		
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	/		
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	/		
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	/		
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	/		
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	/		

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

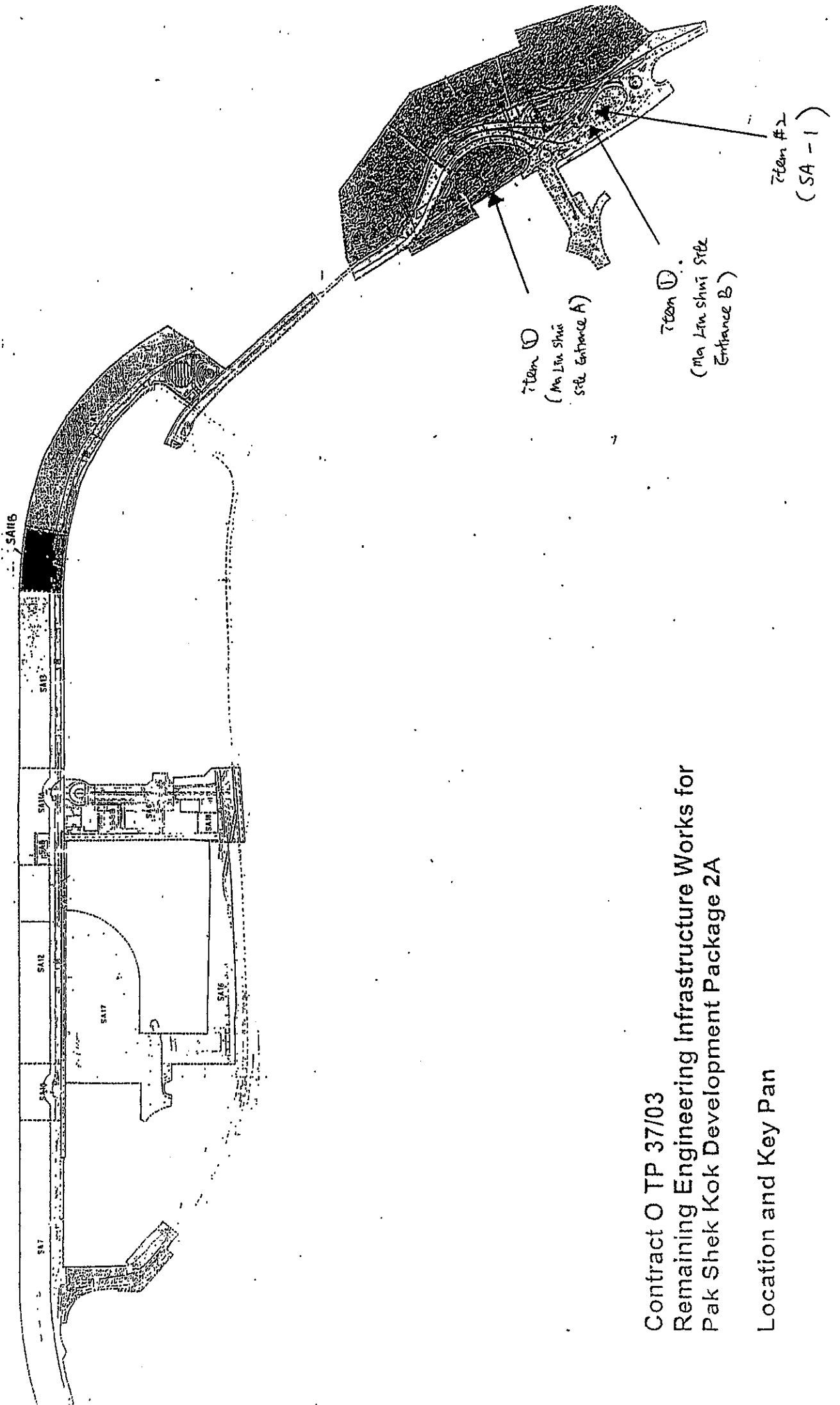
	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Proper storage will minimize the damage and thus the wastage of the materials	/			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	/			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	/			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	/			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	/			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	/			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	/			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	/			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	/			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	/			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	/			
• Be enclosed on at least 3 sides	/			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	/			
• Have adequate ventilation	/			
• Be covered to prevent rainfall entering	/			
• Be arranged so that incompatible materials are adequately separated	/			
• Be clean and maintain regularly	/			
• Disposal				
• Be via a licensed waste collector	/			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	/			
• Be a reuser of the waste, under approval from the EPD	/			

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge	/			
• Commencing at the source of the spill, establish all current and potential impacted areas	/			
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary	/			
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials	/			
• Dispose of materials as chemical wastes	/			
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	/			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	/			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	/			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	/			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	/			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	/			
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	/			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	/			
• The Environmental Permit should be displaced conspicuously on site	/			①
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	/			
• Any unused chemicals or those with remaining functional capacity should be recycled.	/			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	/			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	/			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	/			
• All generators, fuel and oil storage are within bundle areas.	/			
• Oil leakage from machinery, vehicle and plant is prevented.	/			
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	/			







Contract O TP 37/03  
 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

Location and Key Plan

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

Inspection Date : 28 September 2006 Inspected by Name : (RSS) Eric Kenny (LWKJM) (ET) H.T. Chow  
 Time : 10:30 Signature : *[Signature]*

Weather : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy Temperature : 29°C  
 Condition : Calm / Light Breeze / Strong Humidity : High / Moderate / Low  
 Wind :

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Air Quality</b>			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓	✓	# 1
▪ The haul road should be either paved or regular watering.	✓		
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓		
▪ The public road around the site entrance should be kept clean and free from dust.	✓		
▪ Vehicle speed should be limited to 20 km/hr.	✓		
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓		
▪ The enclosures should be around the main dust-generating activities.	✓		
▪ Dusty materials should be sprayed prior to loading.	✓		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓		
▪ Vehicle and equipment should be switched off while not in use.	✓		
▪ Open burning should be prohibited.	✓		
<b>Noise</b>			
▪ The constructions works should be scheduled to minimize noise nuisance.	✓		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓		
▪ Plant known to emit noise strongly in on direction, should, where possible, should be orientated so that the noise is directed away from nearby NSRs.	✓		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	✓		
▪ Air compressors and hand held breakers should have noise labels.	✓		
▪ Compressors and generators should operate with door closed.	✓		
▪ Construction Noise Permits should be available for inspection.	✓	✓	# 2

## SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
<b>Water Quality</b>				
<b>General Construction Activities</b>				
▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓			①
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓			
▪ All traps shall incorporate oil and grease removal facilities.	✓			
▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓			
▪ All drainage facilities should be adequate for controlled release of storm flows.	✓			
▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓			
▪ Open stockpiles of more than 50m <sup>3</sup> should be covered.	✓			# 1
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.	✓			# 1
▪ Manholes should be covered and sealed.	✓			
▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓			
▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓			
▪ Vehicle washing facilities should be provided at every site exit.	✓			
▪ Vehicle washing facilities should be adequate to settle out the sand and silt.	✓			
▪ Washing area and road exiting from washing facility should be paved.	✓			
▪ Access road should have sufficient back fall toward washing facility.	✓			
<b>Dredging Activities</b>				
▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.			✓	
▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.			✓	
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.			✓	
▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.			✓	
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.			✓	
▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.			✓	
▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.			✓	
▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.			✓	

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Mitigation Measures on Waste Management</b>			
<b>Filling Activities</b>			
Use of silt screen around the filling face to reduce the losses to the surrounding.	✓		
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.		✓	
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓		
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.		✓	
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.		✓	
<b>Waste Management</b>			
<b>Marine Dredged Sediment</b>			
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.		✓	
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.		✓	
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.		✓	
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m <sup>3</sup> capacity, well maintained and capable of rapid opening and discharge at the disposal site.		✓	
Inspection of the barge loading to ensure that loss of material does not take place during transportation.		✓	
<b>Construction and Demolition (C&amp;D) Waste</b>			
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓		
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓		
Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓		
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓		
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.	✓		
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓		
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓		
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓		
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓		
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓		

**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Mitigation Measures on Waste Management</b>				
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	✓			
• Be enclosed on at least 3 sides	✓			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓			
• Have adequate ventilation	✓			
• Be covered to prevent rainfall entering	✓			
• Be arranged so that incompatible materials are adequately separated	✓			
• Be clean and maintain regularly	✓			
• Disposal				
• Be via a licensed waste collector	✓			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓			
• Be a reuser of the waste, under approval from the EPD	✓			

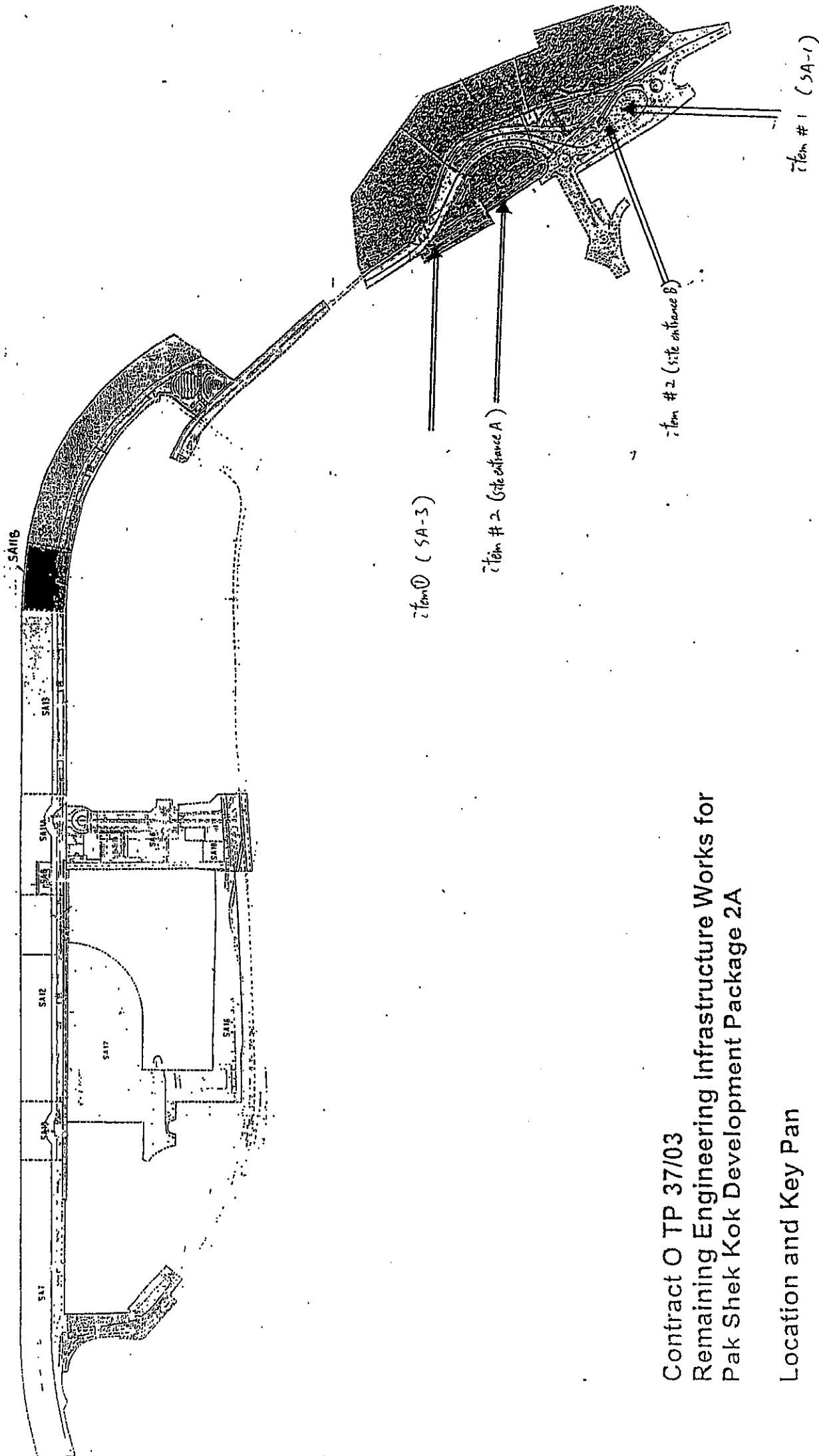
**SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES**

	Implementation Stages*		Remark
	Yes	No N/A	
<b>Mitigation Measures on Waste Management</b>			
• Spillage			
• Establish source of spill or discharge and determine nature of material, where possible halt discharge	✓		
• Commencing at the source of the spill, establish all current and potential impacted areas	✓		
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary	✓		
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials	✓		
• Dispose of materials as chemical wastes	✓		
• General Refuse			
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓		
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓		
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓		
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓		
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓		
• Site Practice			
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	✓		
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	✓		
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓		
• The Environmental Permit should be displaced conspicuously on site	✓		# 2
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓		
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓		
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓		
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓		
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓		
• All generators, fuel and oil storage are within bundle areas.	✓		
• Oil leakage from machinery, vehicle and plant is prevented.	✓		
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓		

**Table for follow-up Action:**

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up action to previous site inspection item ② (9-9-06), item #2 (10.9-06) and item #2 (22.9-06), stockpile at SA-1 was still found without covered.	SA-1	The contractor was reminded to cover all stockpiles by using tarpaulin sheets.	1-10-06
#2	Follow up action to previous site inspection item ① on 22-9-06, EP and CNP post at Ma Tin Shui site entrance A & B were still found damaged and invaded.	Ma Tin Shui site entrance A & B	New and valid copies of EP & CNP should be post on the site entrance.	1-10-06
①	Wastewater was found direct discharge to the channel.	SA-3	The contractor should passing through the sedimentation tank before discharge.	1-10-06
Others:	pH value checking were carried out at workshop and SA-3 discharge point respectively, there were within the discharge standard (pH 6-9).			

Signature:	RSS	LWKJV	ET
Name:	Eric Keng	H.T. Chow	
Date:	28-09-2006	28-9-2006	



Contract O TP 37/03  
 Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A

Location and Key Plan





**Appendix I**  
**IEC and RE Comments on Monthly EM&A Report**  
—  
**August 2006**



**IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – August 2006**

Item No.	Document Reference	Comment	ET Response
1	Table 8.2	Construction Noise Permit for Ma Liu Shui Bridge at Sui Cheung Street to Ma Liu Shui (GW-RN-0347-06) in not valid in the reporting month.	The Permit GW-RN-0347-06 in Table 8.2 was found invalid and deleted in this monitoring report.



## **Appendix J**

### **Wastewater Monitoring**

—

### **Test Reports of Wastewater Samples from Discharge Points**



# ENVIRO LABS LIMITED

## 環境化驗有限公司

### TEST REPORT

JOB NO. : A 60815-1  
DATE OF ISSUE : 25 July 2006

PAGE : 1 of 1

#### 1. Client

Leader - Wei Kee (C&T) Joint Venture  
Unit 1001-1006, 10/F., Grand Central Plaza, Tower 1, 138 Shekin Rural Committee Road, Sha Tin, N.T., HK  
Attn.: Mr. Ben Yip

#### 2. Sample Identification

Sample Description : One batch of water samples said to be wastewater was received in cool condition  
1 x 1L plastic bottle for chemical analysis  
Sampling : Conducted by the staff of the Enviro Labs Ltd.  
Sampling Location : Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok  
Development Package 2A, Pak Shek Kok, N.T. (Contract No. TP 37/03)  
Preservation : According to APHA 20e Table 1060:1  
Sampling Date : 13 July 2006  
Received Date : 13 July 2006

#### 3. Test Method

Parameter	Reference Method	Testing Period
(i) Total Suspended Solids (TSS) Dried at 103-105°C	APHA <sup>1</sup> 17e 2540 D	13 - 24 July 2006

1. APHA Standard Methods for the Examination of Water and Wastewater

#### 4. Test Result\*

Label marked by client	Test Parameter	Sample No.	Test Result	Discharge Limit	Unit
Pak Shek Kok Workshop Area Adjacent to Site Office	Total Suspended Solids	60815-1	10	≤30	mg/L

\* Test results relate only to the items received.  
Information provided by the client. (It is not a test result, information for reference only).

--- END OF REPORT ---



APPROVED SIGNATORY:

*Kenneth Kar Kin LAM*  
Kenneth Kar Kin LAM  
(Laboratory Manager)

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Road,  
Fanling, N.T., Hong Kong

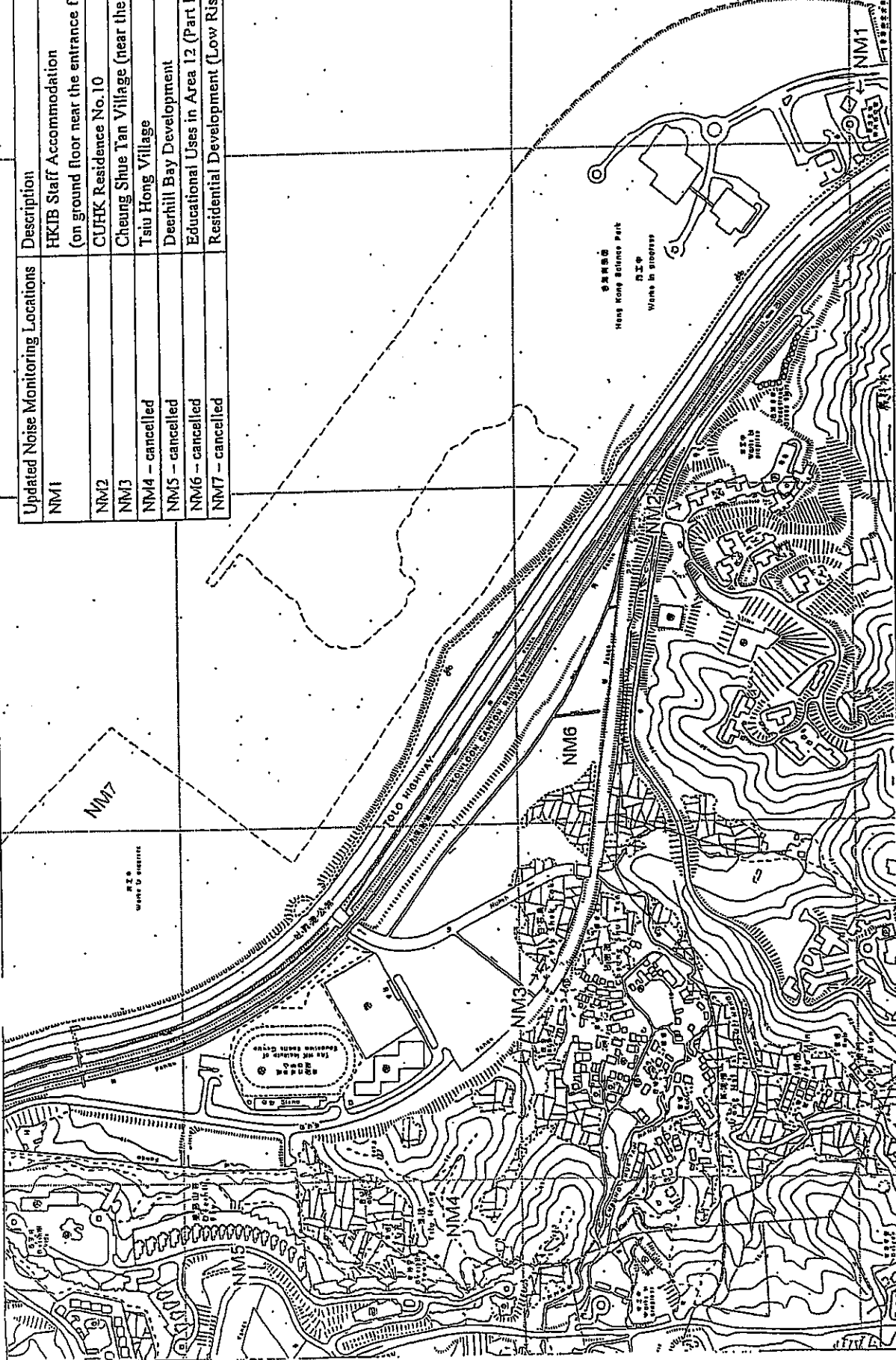
Tel: (852) 2676 2983  
Fax: (852) 2676 2860

<http://www.envirolabs.com.hk>  
e-mail: [el@envirolabs.com.hk](mailto:el@envirolabs.com.hk)



## Figures

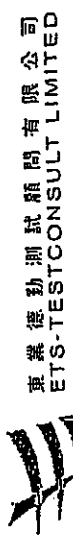
Updated Noise Monitoring Locations	Description
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No.10
NM3	Cheung Shue Tan Village (near the outer building, temple)
NM4 - cancelled	Tsui Hong Village
NM5 - cancelled	Deerhill Bay Development
NM6 - cancelled	Educational Uses in Area 12 (Part I)
NM7 - cancelled	Residential Development (Low Rise Building) - R1



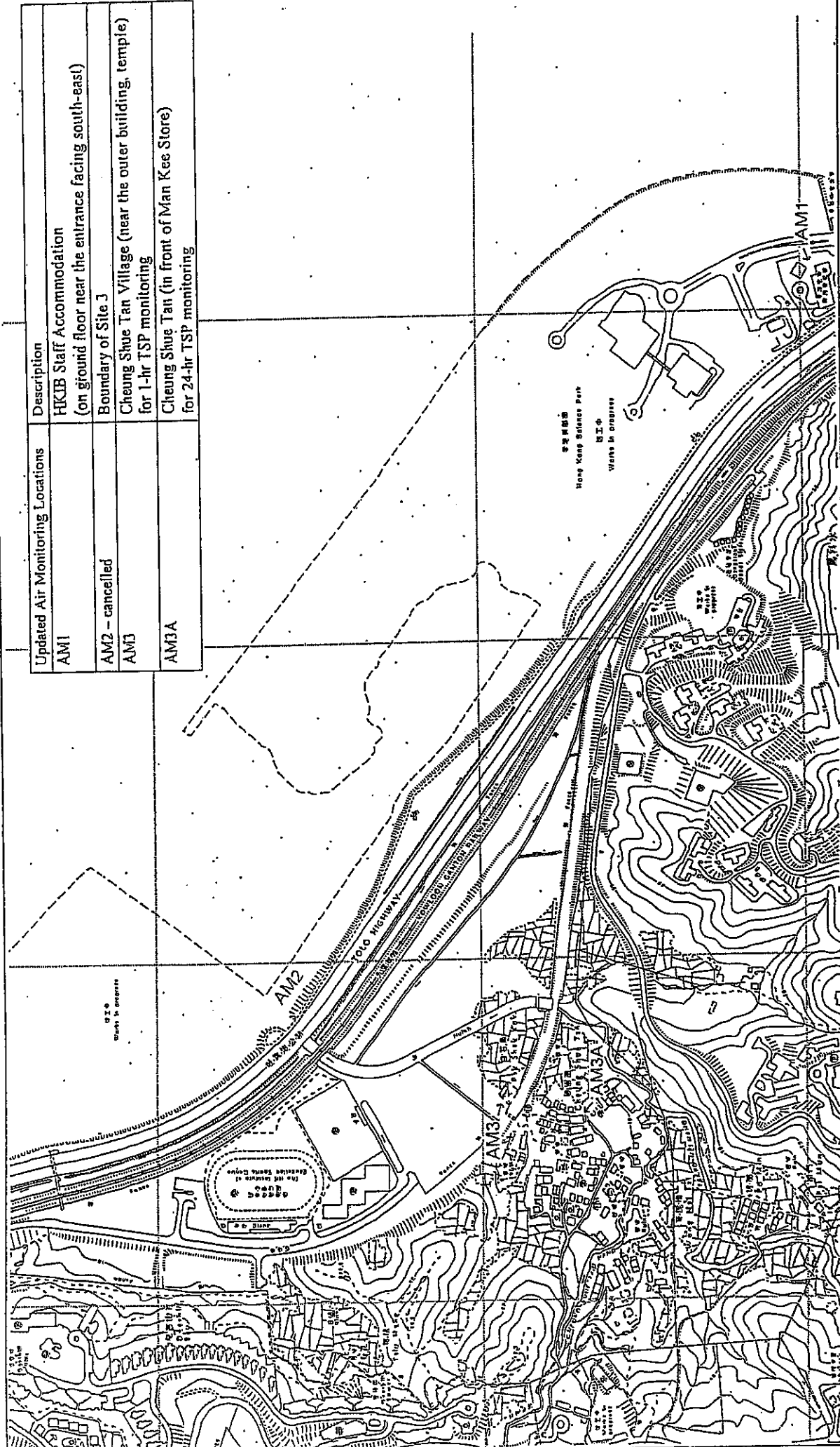
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Revised Date: June 2004

Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A  
 Contract No. TP 37/03  
 Figure 1 Location of Noise Monitoring Stations



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 ETS-TESTCONSULT LIMITED



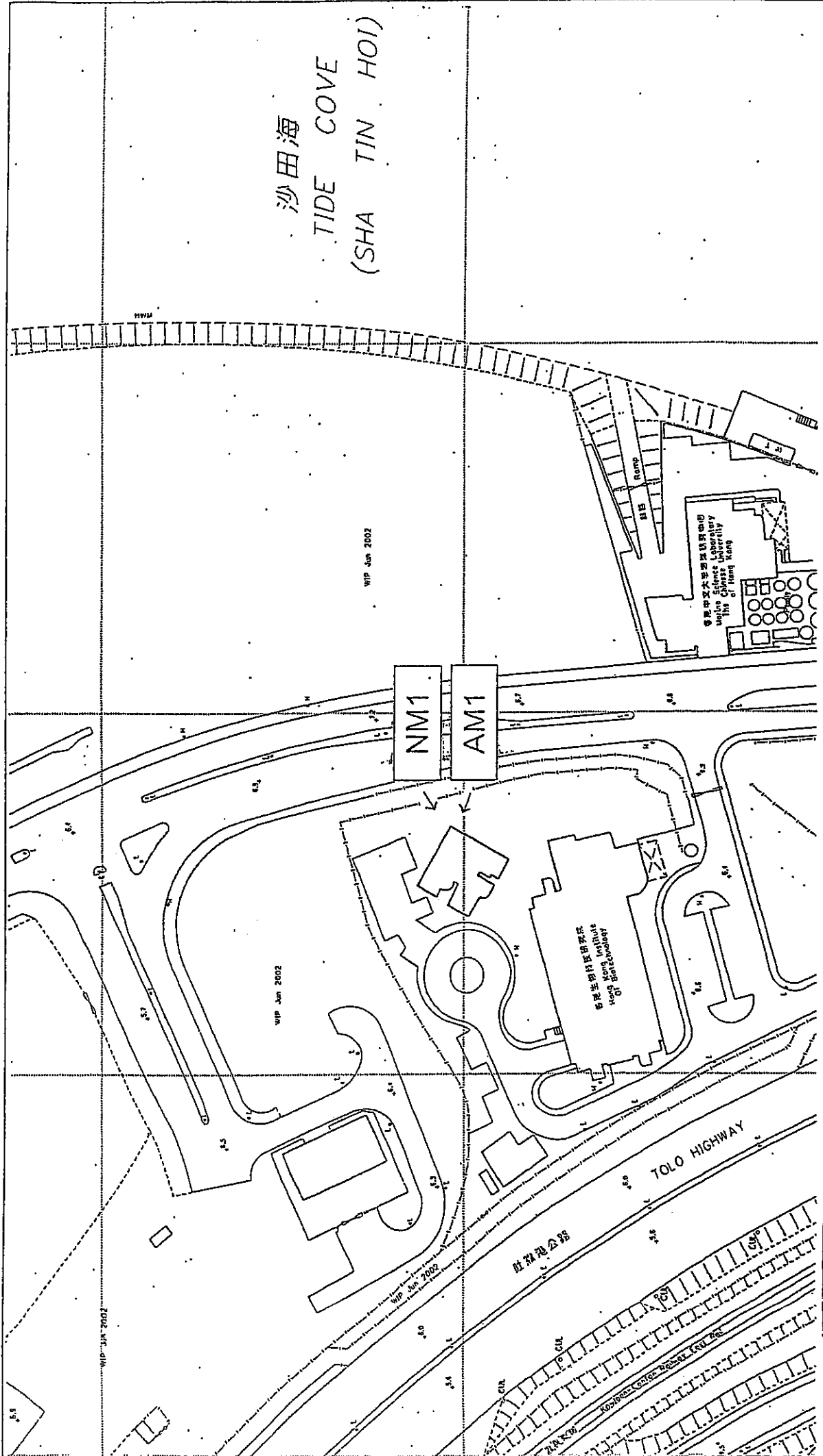
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Revised Date:  
June 2004

Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2 A  
Contract No. TP 37/03  
Figure 2 Location of Air Monitoring Stations



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ETS-TESTCONSULT LIMITED



沙田海  
TIDE COVE  
(SHA TIN HOI)

Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2A  
 Contract No. TP 37/03  
 Figure 3 Location of Air and Noise Monitoring Stations  
 at HKIB Staff Accommodation

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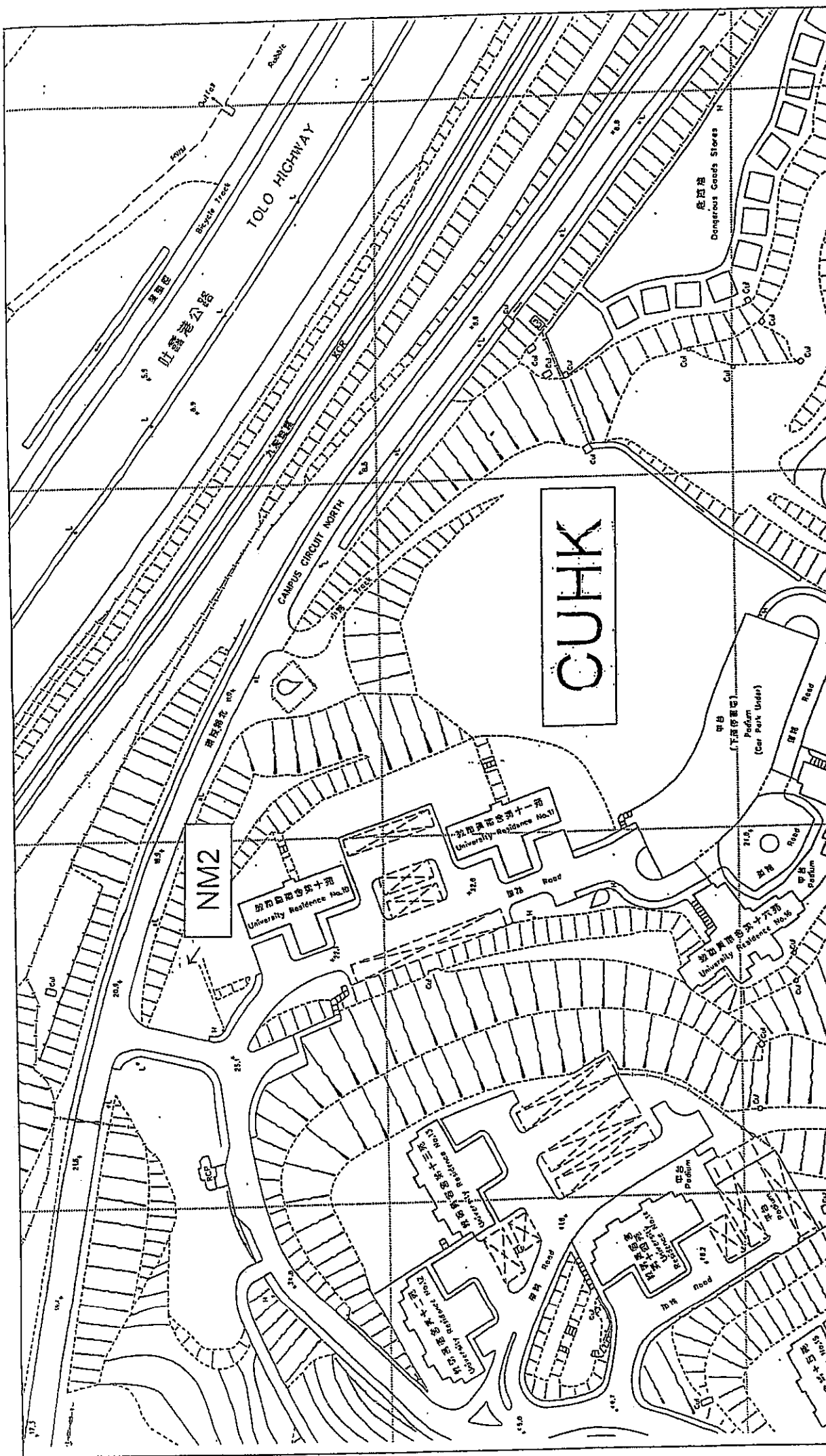
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June 2004



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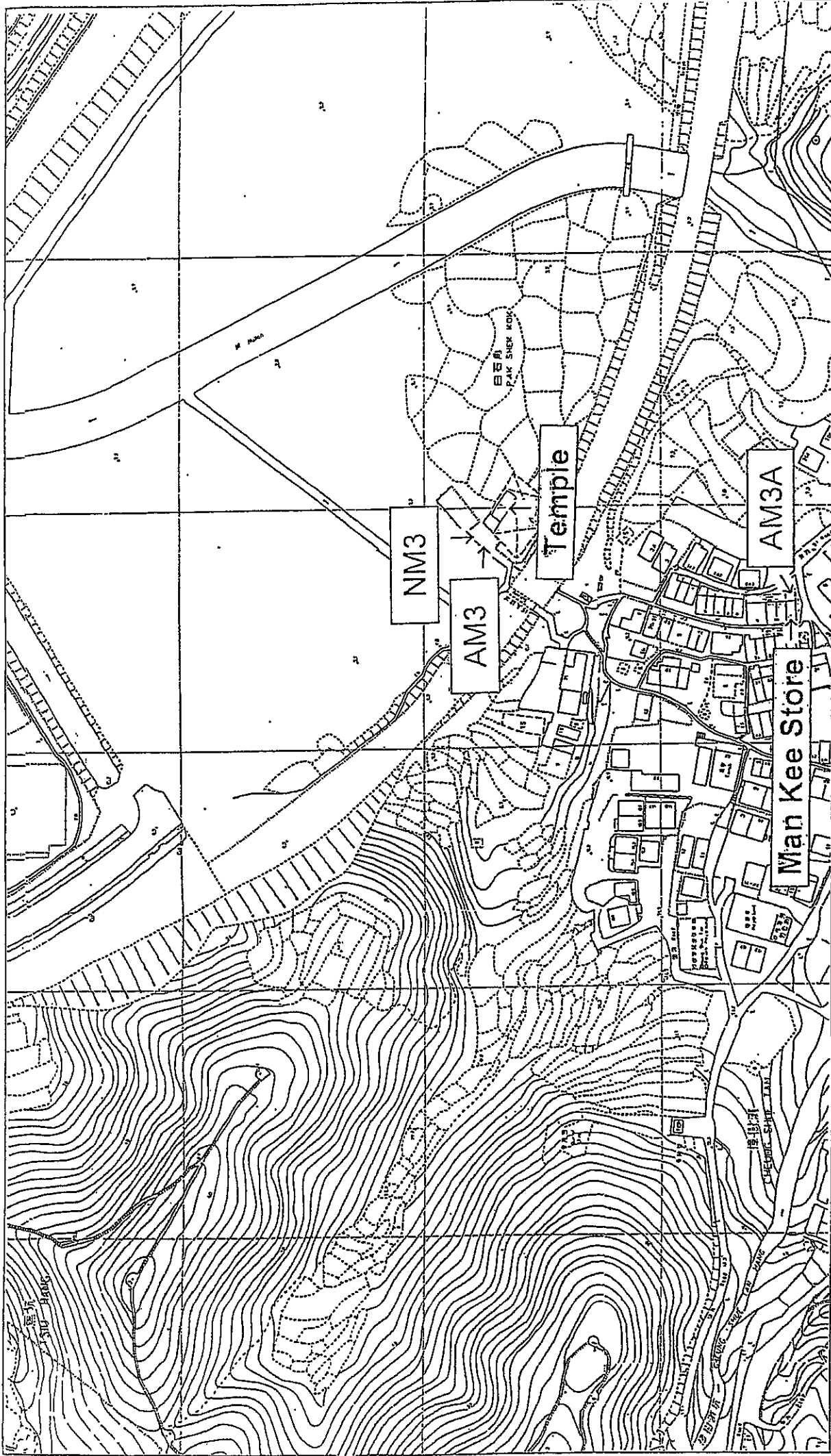




  
 惠譽德新測試顧問有限公司  
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 Revised Date: June 2004

Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2 A  
 Contract No. TP 37/03  
 Figure 4 Location of Noise Monitoring Station at CUHK Residence No.10



Remaining Engineering Infrastructure Works for  
 Pak Shek Kok Development Package 2 A  
 Contract No. TP 37/03  
 Figure 5 Location of Air and Noise Monitoring Stations  
 at Cheung Shue Tan Village

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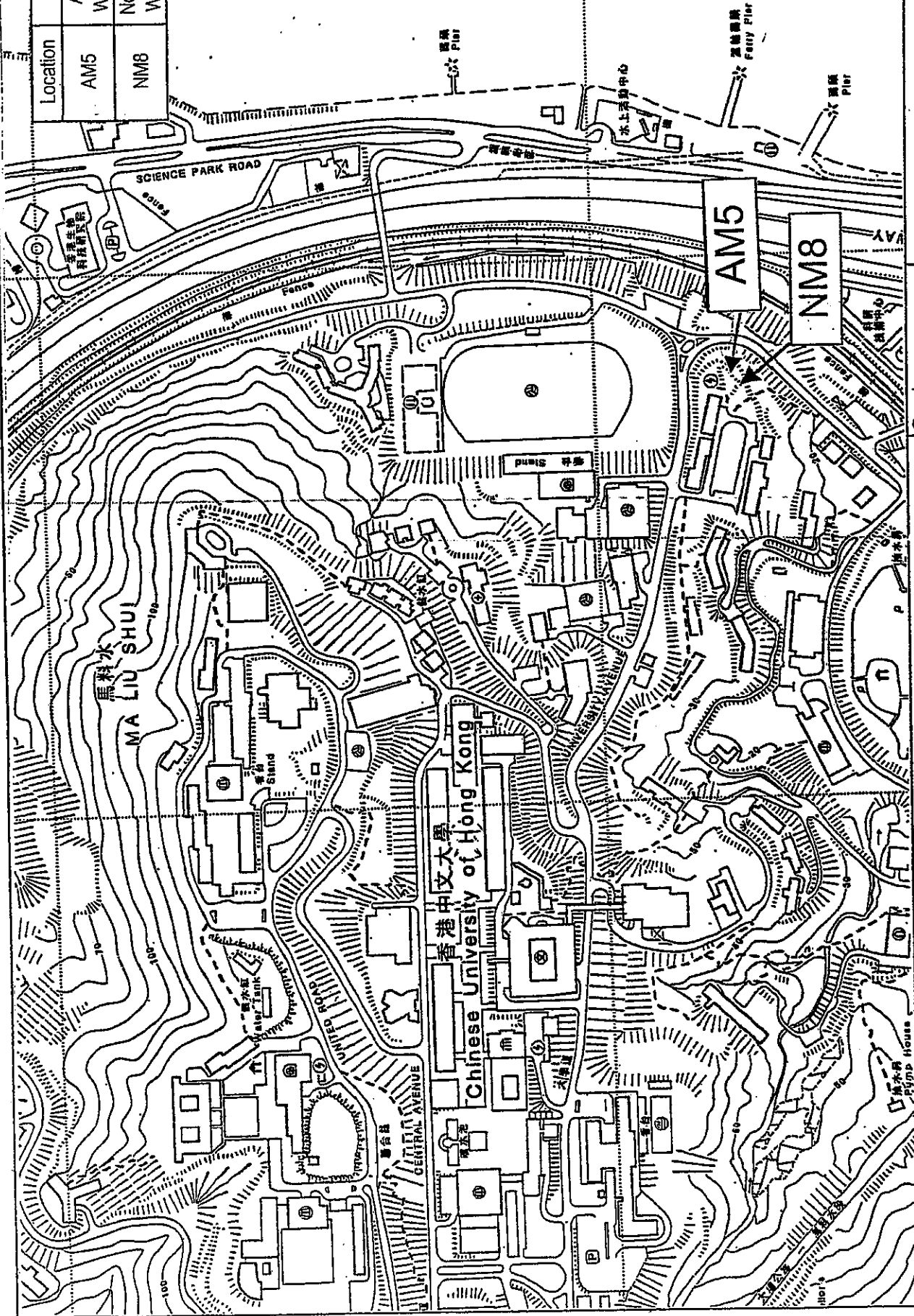
Revised Date:

June 2004



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Location	Description
AM5	Air Monitoring Station near Wen Chin Tong at the CUHK
NM8	Noise Monitoring Station near Wen Chin Tong at the CUHK



Scale : ---

Remaining Engineering Infrastructure Works for Pak Shek Kok Development

Package 2A Contract No. TP 37/03

Figure 7 Additional Locations of Air and Noise Monitoring Stations at the Chinese University of Hong Kong



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