



Construction of a Secondary Boundary
Fence and New Sections of Primary
Boundary Fence and Boundary Patrol Road

Section 4 – Lin Ma Hang Village to Sha Tau Kok
Monthly EM&A Report for Aug 2010 (Rev A)

September 2010
Architectural Services Department




Pursuant to Condition 4.5 of Environmental Permit No. EP-347/2009/A and Condition 4.5 of Further Environmental Permit No. FEP-03/347/2009, this Monthly EM&A Report for August 2010 has been certified by the Environmental Team Leader and verified by the Independent Environmental Checker as having complied with the requirements as set out in the EM&A Manual.

Certified by: 

Florence Yuen
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date 14 September 2010

Verified by: 

David Yeung
Independent Environmental Checker (IEC)
ENVIRON Hong Kong Limited

Date 14 September 2010

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39/F Queensway Government Offices, 66 Queensway, Hong Kong

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Executive Summary

Mott MacDonald Hong Kong Limited (MMHK) has been commissioned by the Architectural Services Department (ArchSD) as the Environmental Team (ET) to carry out Environmental Monitoring and Audit (EM&A) services for the construction of a secondary boundary fence (SBF) at Section 4 along the boundary in the Frontier Closed Area (FCA).

This is the 3rd Monthly EM&A Report for the works carried out during the reporting month from 1 to 31 August 2010, and presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures implemented during the abovementioned reporting month.

Site Activities

The following construction activities took place during the reporting month:

- Dismantling of existing fence;
- Fabrication works for the steel fence;
- Concreting to fence footing;
- Concreting to fence kerb;
- Erection of steel fence;
- Excavation to footing;
- Reinstatement of concrete pavement; and
- Off-site clearance of site material.

Breach of Action and Level Limits

There was no breach of Action or Limit levels for noise level (measured as L_{eq}) in the reporting month.

Complaints

There was no record of complaints received in the reporting month.

Notification of Summons and Successful Prosecutions

There was no record of Notification of summons and successful prosecution in the reporting month.

Reporting Changes

There are no reporting changes in the reporting month.

Future Key Issues

Future key issues to be considered in the forthcoming month include:

- Regular maintenance of all plant and equipment;
- Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading;

- All dusty materials should be sprayed with water prior to any loading, unloading or transfer;
- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;
- Noisy equipment and noisy activities should be located as far away from the NSRs as is practical;
- Unused equipment should be turned off. PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;
- No discharge of silty water into the storm drain and drainage channel within and the vicinity of the site;
- Any construction plant which causes pollution to the water system due to leakage of oil or fuel shall be removed off-site immediately;
- Excavated soil which needs to be temporarily stockpiled should be stored in a specially designated area and provided with a tarpaulin cover to avoid runoff into the drainage channels;
- Control measures should be taken at the stockpiling area to prevent the generation of dust and pollution of stormwater channels, fish ponds or river channels. However, to eliminate the risk of blocking drains in the wet season, it is recommended that stockpiling of excavated materials during the wet season should be avoided as far as practicable;
- Different types of waste should be segregated, stored, transported and disposed of in accordance with the relevant legislative requirements and guidelines;
- Records of quantities of wastes generated, recycled and disposal (with locations) shall be kept;
- Good site practices for controlling the dust and water quality (avoid stockpiles adjacent to wetlands, covering the stockpiles with impervious sheeting, control of vehicle speed, no discharge of silty water to the rivers, streams and drainage channels); and
- Clear definition of works limit to avoid impact on adjacent habitats.

Environmental mitigation measures will be implemented on site as recommended and weekly site audits will be carried out to ensure that the environmental conditions are acceptable.

1. Introduction

1.1 Background

The Frontier Closed Area (FCA) is an integral part of the package of measures aimed at maintaining the integrity of the boundary of the Hong Kong Special Administrative Region (HKSAR) with mainland China, and combating illegal immigration and other cross-boundary criminal activities. Following a recent review, the HKSAR Government has concluded that with the erection of a secondary boundary fence (SBF) along the boundary patrol road (BPR) and construction of new sections of the BPR and primary boundary fence (PBF) at certain sections along the boundary, the FCA coverage can be substantially reduced without affecting the objective of maintaining the integrity of the boundary. The PBF and SBF (hereafter referred to as 'The Project') will be erected along the northern and southern curbs of the realigned BPR respectively to facilitate the Hong Kong Police Force (HKPF) in combating cross-boundary criminal activities. The reduced FCA will comprise a narrow strip of land covering the realigned BPR and areas to its north, together with the points of crossing the boundary (i.e. the Boundary Control Points and Sha Tau Kok town). Areas south of the SBF will generally be excised from the FCA.

An Environmental Impact Assessment (EIA) for the proposed works was carried out under the EIA Ordinance (EIAO, Cap 499) and approved by the Environmental Protection Department (EPD) in April 2009 (Register No. AEIAR-136/2009). The entire length of the proposed works is about 21.7 km from west of Pak Hok Chau to east of Sha Tau Kok and is divided into four sections. A general layout plan of the Project site is presented in Figure 1.1, while the location of the SBF at Section 4 is presented in Figure 1.2.

An Environmental Permit (EP) covering the overall proposed works was issued in June 2009 (Permit No. EP-347/2009). An application for Variation of the Environmental Permit (VEP) (Application No. VEP-314/2010) was subsequently submitted on 24 May 2010 and the amended Environmental Permit (Permit No. EP-347/2009/A) was issued by EPD on 9 June 2010. In addition, an application for a Further Environmental Permit (FEP) specifically concerning Section 4 was submitted to EPD on 2 March 2010 (Application No. FEP-104/2010) and this was granted on 29 March 2010 (Permit No. FEP-03/347/2009).

The Architectural Services Department (ArchSD) has been entrusted with the management of the Project by the Project Proponent – the Secretary for Security of the HKSAR Government. Mott MacDonald Hong Kong Limited (MMHK) has in turn been commissioned by ArchSD as the consulting engineer for the entire Project under Consultancy Agreement No. 9SN005, and is the Engineer's Representative (ER) for construction of the Project.

For Section 4 of the Project, MMHK and ENVIRON Hong Kong Limited (ENVIRON) have been commissioned as the Environmental Team (ET) and Independent Environmental Checker (IEC) respectively to undertake the Environmental Monitoring and Audit (EM&A) programme as described in the approved EM&A Manual of the Project. Also, the Contract to undertake and perform the construction works for Section 4 was awarded to Chun Wo Construction & Engineering Company Limited ('The Contractor') and is scheduled to last for approximately 18 months. It formally commenced on 28 May 2010, and the construction works and EM&A programme under the above-mentioned EP and FEP also commenced on this date. The construction works programme is presented in Appendix A.

This monthly EM&A report summarises the environmental monitoring and audit works, list of activities and mitigation measures implemented at Section 4 during the period of 1 to 31 August 2010 inclusive ('reporting month').

The scope of works for Section 4 consists of:

- Erection of an SBF from the entrance of the Sha Tau Kok town (i.e. the location of 'Gate One') to the Sha Tau Kok Control Point (approximately 0.5 km);
- Use of transparent panel for a section of an SBF;
- Provision of a two-storey high checkpoint at 'Gate One';
- Addition of a kiosk/guard house on an existing footpath of Sha Tau Kok Road; and
- Removal of the existing checkpoint at Shek Chung Au.

1.2 Project Organisation

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in Appendix B.

1.3 Works Undertaken in the Reporting Month

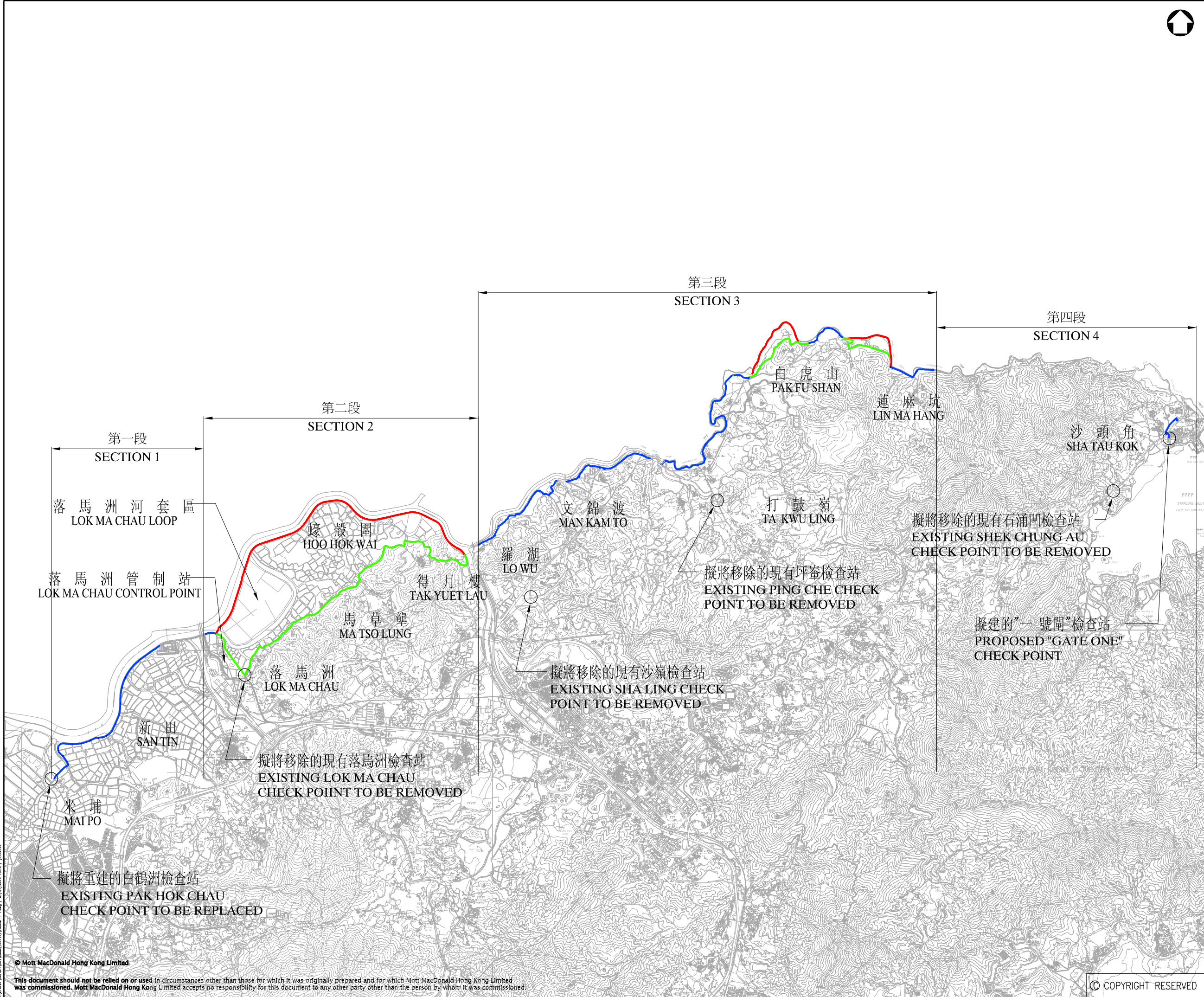
The following activities have taken place during the reporting month:

- Dismantling of existing fence;
- Fabrication works for the steel fence;
- Concreting to fence footing;
- Concreting to fence kerb;
- Erection of steel fence;
- Excavation to footing;
- Reinstatement of concrete pavement; and
- Off-site clearance of site material.



圖例：
LEGEND:

- 建議於現有邊界巡邏通路興建的輔助邊界圍網
PROPOSED SECONDARY BOUNDARY FENCE
ALONG EXISTING BOUNDARY PATROL ROAD
- 建議的主要及輔助邊界圍網及新邊界巡邏通路
PROPOSED NEW BOUNDARY PATROL ROAD WITH
PRIMARY AND SECONDARY BOUNDARY FENCES
- 擬將移除的現有邊界圍網
EXISTING BOUNDARY FENCE TO BE REMOVED



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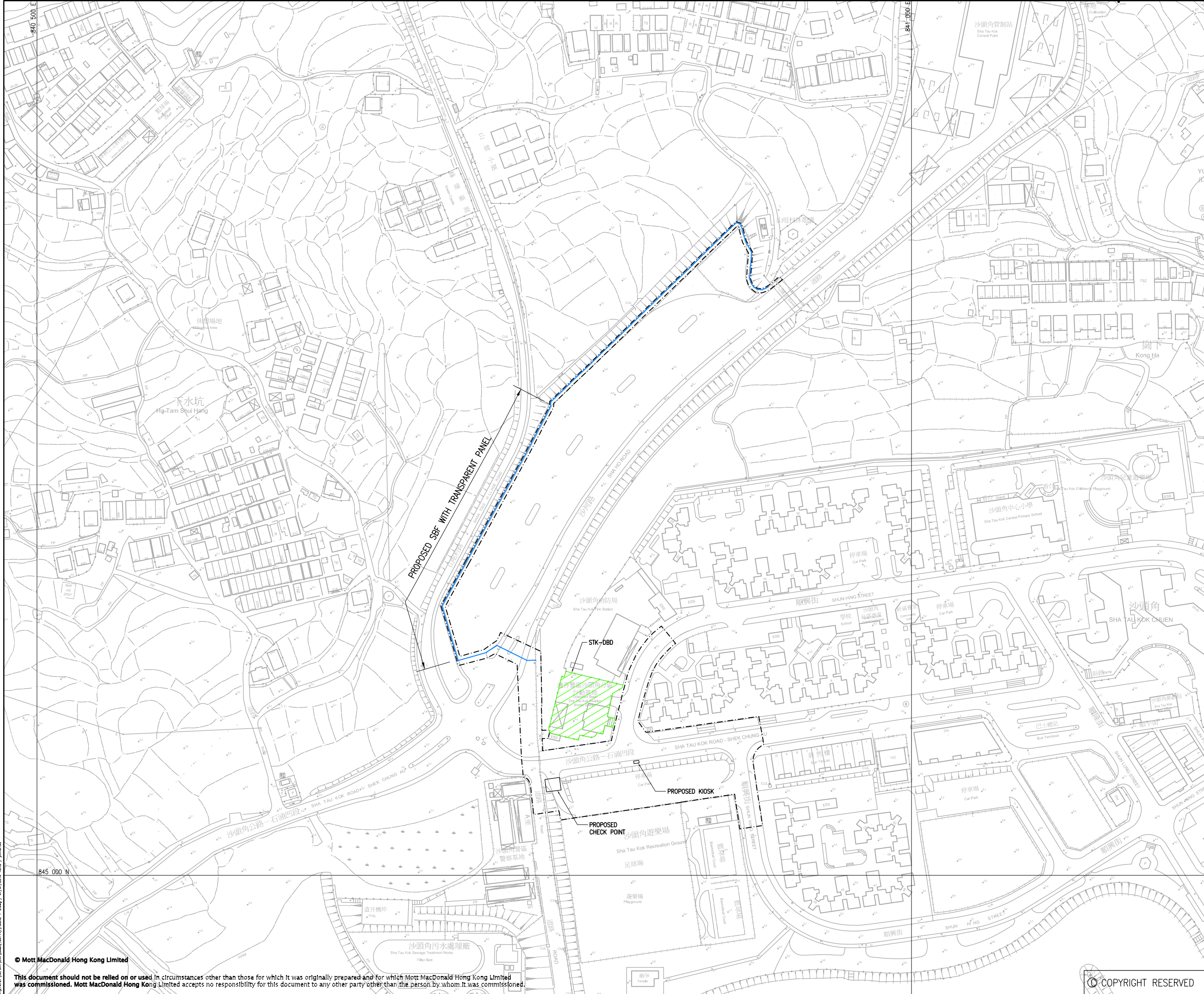
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Project
CONSTRUCTION OF A SECONDARY BOUNDARY FENCE AND NEW SECTIONS OF PRIMARY BOUNDARY FENCE AND BOUNDARY PATROL ROAD

Title
概覽圖
GENERAL LAYOUT PLAN

Designed	WHC	Eng.Chk.	WHC	
Drawn	MCL	Coordination	WHC	
Dwg.Chk.	WHC	Approved	TI	
Scale	Project 216727		Status	
	N.T.S.		CAD File	INF
Drawing No.	FIGURE 1.1 (圖 1.1)			Rev
	COPYRIGHT RESERVED			P1



LEGEND:
 PROPOSED SBF ALIGNMENT

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Project
 CONSTRUCTION OF A SECONDARY BOUNDARY FENCE AND NEW SECTIONS OF PRIMARY BOUNDARY FENCE AND BOUNDARY PATROL ROAD

Title
 LOCATION OF SECONDARY BOUNDARY FENCE AND NOISE MONITORING STATION AT SECTION 4

Designed	PW	Eng.Chk.	AL
Drawn	MING	Coordination	PW
Dwg.Chk.	PW	Approved	TI

Scale	Project	216727	Status
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Drawing No.	FIGURE 1.2	Rev	P1
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2. EM&A Requirements

2.1 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring of construction noise as well as environmental site inspections for air quality, noise, water quality, waste management, ecology, landscape and visual, as specified in the approved EM&A Manual.

Originally, the EM&A Manual designated two locations as noise monitoring stations during the construction phase. However, currently noise levels at only one of these monitoring stations (as shown in Figure 1.2) are monitored. The reasons for this arrangement are detailed in Section 3.2.

A summary of impact EM&A requirements is presented in Table 2.1. The Environmental Quality Performance Limits and the Event and Action Plans (for construction noise only) are shown in Appendix C and Appendix D respectively.

Table 2.1: Summary of EM&A Impact Requirements

Parameters	Description	Location(s)	Frequency	Duration
Air	On-site Inspection	Active Works Sites	Weekly	During Construction
Noise	L _{eq} , 30min	STK-DBD	Weekly	During Construction
Waste management	On-site Waste Audit	Active Works Sites	Weekly	During Construction
	On-site Waste Inspection			
Wastewater	On-site Wastewater Audit	Active Works Sites	Weekly	During Construction
Ecology	On-site Audit of Recommended Ecological Mitigation Measures	Active Works Sites	Periodically (by Contractor)	As specified in EM&A Manual (see Table E.5)
Landscape and Visual	On-site Audit of Recommended Landscape and Visual Mitigation Measures	Active Works Areas	Regular intervals (by Contractor/ Landscape Sub-Contractor)	As specified in EM&A Manual (see Table E.6)
General Site Conditions	Environmental Site Inspection	Works areas and areas affected by works	Weekly	During Construction

2.2 Implementation of Environmental Mitigation Measures

The Contractor is required to implement mitigation measures listed in the latest valid EP and FEP (where applicable), EIA Report and EM&A Manual. During routine site inspections, the Contractor's implementation of mitigation measures, if any, are to be inspected and reviewed. A schedule of the implementation of mitigation measures identified at the EIA stage is given in Appendix E.

3. Noise Impact Monitoring

3.1 Monitoring Parameters, Frequency and Duration

Following the requirements in the EM&A Manual for noise, noise monitoring has to be carried out during the construction phase. Continuous noise monitoring for the A-weighted levels L_{eq} , L_{10} and L_{90} is undertaken once per every week during daytime hours (between 07:00 and 19:00) on normal weekdays.

Table 3.1 summarizes the monitoring parameters, frequency and duration of air quality monitoring. The noise monitoring schedule during the reporting month is presented in Appendix F.

Table 3.1: Noise Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Frequency	Duration
STK-DBD	L_{eq} , L_{90} & L_{10}	Once every week	30 min

3.2 Monitoring Location

Originally, two construction noise monitoring stations were proposed in the EM&A Manual, namely: STK03 (Block 1, Sha Tau Kok Estate) and STK05 (Village House at Sha Tau Kok). STK03 was mainly selected for the construction works related to the SBF and the new checkpoint in Sha Tau Kok, while STK05 was mainly selected for the removal of the existing checkpoint at Shek Chung Au.

However, access to STK03 to perform noise monitoring was not granted, therefore an alternative nearby location – STK-DBD (HKPF Operation Base, Sha Tau Kok Division, Border District) – was proposed by ET and agreed to by IEC and EPD. Baseline noise monitoring was subsequently conducted at STK-DBD from 16 to 29 March 2010.

Currently, there is no solid timetable or programme for the demolition works of the existing checkpoint at Shek Chung Au, although the end of 2011 has been proposed as a possible commencement date. This is subject to future confirmation of the demolition programme by the Security Bureau and HKPF. No noise monitoring at STK05 has been carried out at this stage.

As a result, only one noise impact monitoring station is included in the current EM&A programme for Section 4. The location of the agreed noise quality monitoring station is listed in Table 3.2 and shown in Figure 1.2.

Table 3.2: Noise Impact Monitoring Location

Monitoring Station	Description of Location	Type of measurement
STK-DBD	HKPF Operational Base, Sha Tau Kok Division, Border District	Façade

3.3 Monitoring Equipment

Integrating Sound Level Meter will be used for noise monitoring. It is a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They comply with International Electrotechnical

Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Table 3.3 summarizes the noise monitoring equipment model being used.

Table 3.3: Noise Monitoring Equipment

Equipment	Model(s)
Integrating Sound Level Meter	Rion NL-31
Acoustic Calibrator	Castle GA607

3.4 Equipment Calibration

The calibration frequencies of the monitoring equipment are provided in Table 3.4.

Table 3.4: Noise Monitoring Equipment Calibration Frequencies

Equipment, Model and Serial Number	Calibration Frequency	Calibration Due Date(s)
Integrating Sound Level Meter Rion NL-31 (serial number 01262786)	Every year	10 May 2011
Acoustic Calibrator Castle GA607 (serial number 040162)	Every year	20 Dec 2010

The calibration certificates are presented in Appendix G.

3.5 Monitoring Methodology

3.5.1 Field Monitoring

- The Sound Level Meter was set on a tripod at a height of at least 1.2 m above the ground.
- Façade measurements were made at the monitoring locations.
- 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-minute intervals (between 07:00 and 19:00); L_{eq} (30 min) was determined by calculating the logarithmic average of six L_{eq} (5-min) data.
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1 kHz. If the difference in the calibration level before and after measurement was more than 1 dB, the measurement would be considered invalid and have to be repeated after re-calibration or repair of the equipment.
- During the monitoring period, the L_{eq} , L_{10} and L_{90} noise levels were recorded. In addition, any site observations and noise sources were recorded on a standard record sheet.

3.5.2 Maintenance and Calibration

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

3.6 Results of Impact Monitoring

The measured construction noise levels, in terms of L_{eq} (30-min), during the reporting month are summarised in Table 3.5. Detailed results, including general weather conditions and graphical presentations are presented in Appendix H.

Table 3.5: Results of Noise Impact Monitoring

Monitoring Station	Measured L_{eq} (30-min) Range, dB(A)	Limit Level for L_{eq} , dB(A)
STK-DBD	63 – 65	75

Note: All figures are rounded off to the nearest whole number.

No exceedance of Action / Limit Levels for construction noise was recorded.

No direct comparison between the measured noise levels and the construction noise levels predicted in the EIA Report for this Project was possible due to the minor nature of site works conducted during the reporting month.

Wind data obtained from the nearest Hong Kong Observatory monitoring station, at Ta Kwu Ling, covering all noise monitoring days during the reporting month is included in Appendix K.

4. Environmental Site Inspection and Audit

4.1 Site Inspections

Environmental site inspections were carried out on a weekly basis to monitor the proper implementation of environmental pollution control and mitigation measures for Section 4. In the reporting month, one monthly site inspection was carried out jointly by the ER, Contractor, ET and IEC on 25 August 2010, and additional weekly site inspections were carried out by the ER, Contractor and ET on 5, 11 and 20 August 2010. The EM&A schedule is presented in Appendix F.

Major findings provided jointly by the ET and IEC during the joint monthly site inspection, and provided by ET during the additional weekly site inspections, are summarised in Table 4.1. In general, the works site areas were found to be in compliance with the environmental mitigation requirements listed in the EM&A Manual and no adverse impacts were found.

Table 4.1: Summary of Environmental Site Inspections

Date of Inspection	Major Observations	Status
5 Aug 2010	The Contractor is reminded to display the valid EP as required under EP Condition 1.5. (keep in view)	Valid EP was displayed at the site entrance as observed on 25 Aug 2010. (closed)
	The Contractor is reminded to maintain good overall site housekeeping.	Overall site housekeeping was observed to be in good condition as observed on 20 Aug 2010. (closed)
11 Aug 2010	The Contractor is reminded to display the valid EP as required under EP Condition 1.5. (keep in view)	Valid EP was displayed at the site entrance as observed on 25 Aug 2010. (closed)
	The Contractor is reminded to maintain good overall site housekeeping.	Overall site housekeeping was observed to be in good condition as observed on 20 Aug 2010. (closed)
20 Aug 2010	The Contractor is reminded to display the valid EP as required under EP Condition 1.5. (keep in view)	Valid EP was displayed at the site entrance as observed on 25 Aug 2010. (closed)
25 Aug 2010	Some stagnant water was observed in a drip tray. The Contractor is advised to clear the water as soon as possible after rain.	Stagnant water was observed in the drip tray during rainfall during the follow-up site inspection on 3 Sep 2010. This should be cleared as soon as possible after weather improves. Pending Contractor's action.
	The Contractor is advised to ensure proper facilities to collect wheel wash wastewater are provided, if such wastewater is produced.	Tarpaulin sheets were provided for the concrete area accessed by dump trucks to minimise accumulation of mud on the wheels, as observed on 3 Sep 2010. (closed)

4.2 Environmental Meetings

One environmental meeting was held on the day of the joint monthly site inspection on 25 August 2010.

4.3 Status of Environmental Submissions, Permits and Licences

A summary of status of all environmental submissions, valid permits/licences, and/or notifications to EPD for this Project during the reporting month is presented in Table 4.2. A summary of submissions made under the valid EP and FEP for Section 4 during the same period is presented in Table 4.3.

Table 4.2: Status of Environmental Submissions, Permits and Licences

Statutory Reference	Description	Permit / Reference No.	Valid Period	Status
EIAO	Environmental Permit	EP-347/2009/A	9 Jun 2010 – present	Valid

Statutory Reference	Description	Permit / Reference No.	Valid Period	Status
EIAO	Further Environmental Permit	FEP-03/347/2009	29 Mar 2010 – present	Valid
EIAO	Application for Further Environmental Permit (Remaining Section)	FEP-112/2010	-	Submitted to EPD on 13 Aug 2010. Under consideration by EPD
APCO	Notification pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation (Form NA)	312959 EPD notified on 4 Jan 2010	-	Valid

Legend: EIAO – Environmental Impact Assessment Ordinance (Cap 499)
 APCO – Air Pollution Control Ordinance (Cap 311)
 WPCO – Water Pollution Control Ordinance (Cap 358)
 WDO – Waste Disposal Ordinance (Cap 354)
 NCO – Noise Control Ordinance (Cap 400)

Table 4.3: Environmental Submissions Made under the Valid EP & FEP during the Reporting Month

EP/FEP Ref.	Description	Submission Date
EP Condition 4.5 & FEP Condition 4.5	Monthly EM&A Report (Jul 2010)	13 Aug 2010

4.4 Advice on the Solid and Liquid Waste Management Status

The construction and demolition (C&D) material and general refuse generated by Section 4 of the Project in the reporting month are shown in Appendix I. Wastes were handled and disposed from site in accordance with the EM&A Manual and all relevant legislation and regulations.

4.5 Review of Environmental Monitoring Procedures

The monitoring works conducted by the Environmental Team have been reviewed regularly. No changes in the environmental monitoring procedures are considered necessary at this stage.

4.6 Implementation Status of Environmental Mitigation Measures

An Implementation Schedule of Mitigation Measures from the EIA Report / EM&A Manual is provided in Appendix E, in the following order (see Table 4.4):

Table 4.4: Implementation Schedule of Mitigation Measures

Parameter	Table
Air Quality	Table E.1
Noise	Table E.2
Water Quality	Table E.3
Waste Management	Table E.4
Ecology	Table E.5
Landscape and Visual	Table E.6

5. Record of Non-compliance, Complaints, Notifications of Summons and Successful Prosecutions

5.1 Non-compliance of Action and Limit Levels

There was no breach of Action or Limit Levels for construction noise impact monitoring in the reporting month.

5.2 Environmental Complaints

No environmental complaints were received or made against Section 4 of the Project during the reporting month. The complaint log is presented in Appendix J.

5.3 Notifications of Summons and Successful Prosecutions

No notifications of summons or successful prosecution were received or made against Section 4 of the Project during the reporting month.

6. Future Key Issues

6.1 Construction Programme for the Next Reporting Month

The major construction works forecast for Section 4 in September 2010 will be:

- Dismantling of existing fence;
- Trench excavation;
- Laying of blinding layer for the new steel fence footing; and
- Off-site clearance of site material.

6.2 Key Issues for the Next Reporting Month

Based on the forecast major construction works listed in Section 6.1, the key environmental issues to be considered in September 2010 include:

6.2.1 Air

- All plant and equipment to be maintained to prevent any undue air emissions.
- Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading;
- All dusty materials should be sprayed with water prior to any loading, unloading or transfer; and
- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.

6.2.2 Noise

- Noisy equipment and noisy activities should be located as far away from the NSRs as is practical;
- Unused equipment should be turned off. PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided; and
- Regular maintenance of all plant and equipment.

6.2.3 Water Quality

- No discharge of silty water into the storm drain and drainage channel within and the vicinity of the site;
- Any construction plant which causes pollution to the water system due to leakage of oil or fuel shall be removed off-site immediately; and
- Excavated soil which needs to be temporarily stockpiled should be stored in a specially designated area and provided with a tarpaulin cover to avoid runoff into the drainage channels.

6.2.4 Waste

- Control measures should be taken at the stockpiling area to prevent the generation of dust and pollution of stormwater channels, fish ponds or river channels. However, to eliminate the risk of blocking drains in the wet season, it is recommended that stockpiling of excavated materials during the wet season should be avoided as far as practicable;
- Different types of waste should be segregated, stored, transported and disposed of in accordance with the relevant legislative requirements and guidelines; and
- Records of quantities of wastes generated, recycled and disposal (with locations) shall be kept.

6.2.5 Ecology

- Good site practices for controlling the dust and water quality (avoid stockpiles adjacent to wetlands, covering the stockpiles with impervious sheeting, control of vehicle speed, no discharge of silty water to the rivers, streams and drainage channels); and
- Clear definition of works limit to avoid impact on adjacent habitats.

6.3 Monitoring Schedule for the Next Reporting Month

The tentative schedule for environmental monitoring in September 2010 is provided in Appendix F. Actual monitoring dates may change due to unforeseen events such as inclement weather.

7. Conclusions and Recommendations

7.1 Conclusions

The construction phase and EM&A programme for Section 4 commenced on 28 May 2010. EM&A was performed from 1 to 31 August 2010 during which some minor site works have commenced. All monitoring and audit results in the reporting month were checked and reviewed.

Construction noise monitoring was carried out in the reporting month. As no noise-related complaint was received or follow-up by ET during the reporting month, no Action Level exceedance was recorded. All noise monitoring results obtained complied with the Limit Level.

Environmental site inspections were carried out four times during the reporting month. During the site audits, recommendations on remedial actions were given to the Contractor for any deficiencies identified.

Wastes were handled and disposed from site in accordance with the EM&A Manual and all relevant legislation and regulations.

No environmental complaints, notification of summons of successful prosecutions were received or made against Section 4 of the Project during the reporting month.

Overall, the EM&A programme for Section 4 during the reporting month was in compliance with the relevant EIA Report, EM&A Manual, EP and FEP and all relevant legislation and regulations.

7.2 Recommendations

No further recommendations were made at this stage pending more site progress achieved.

Appendices

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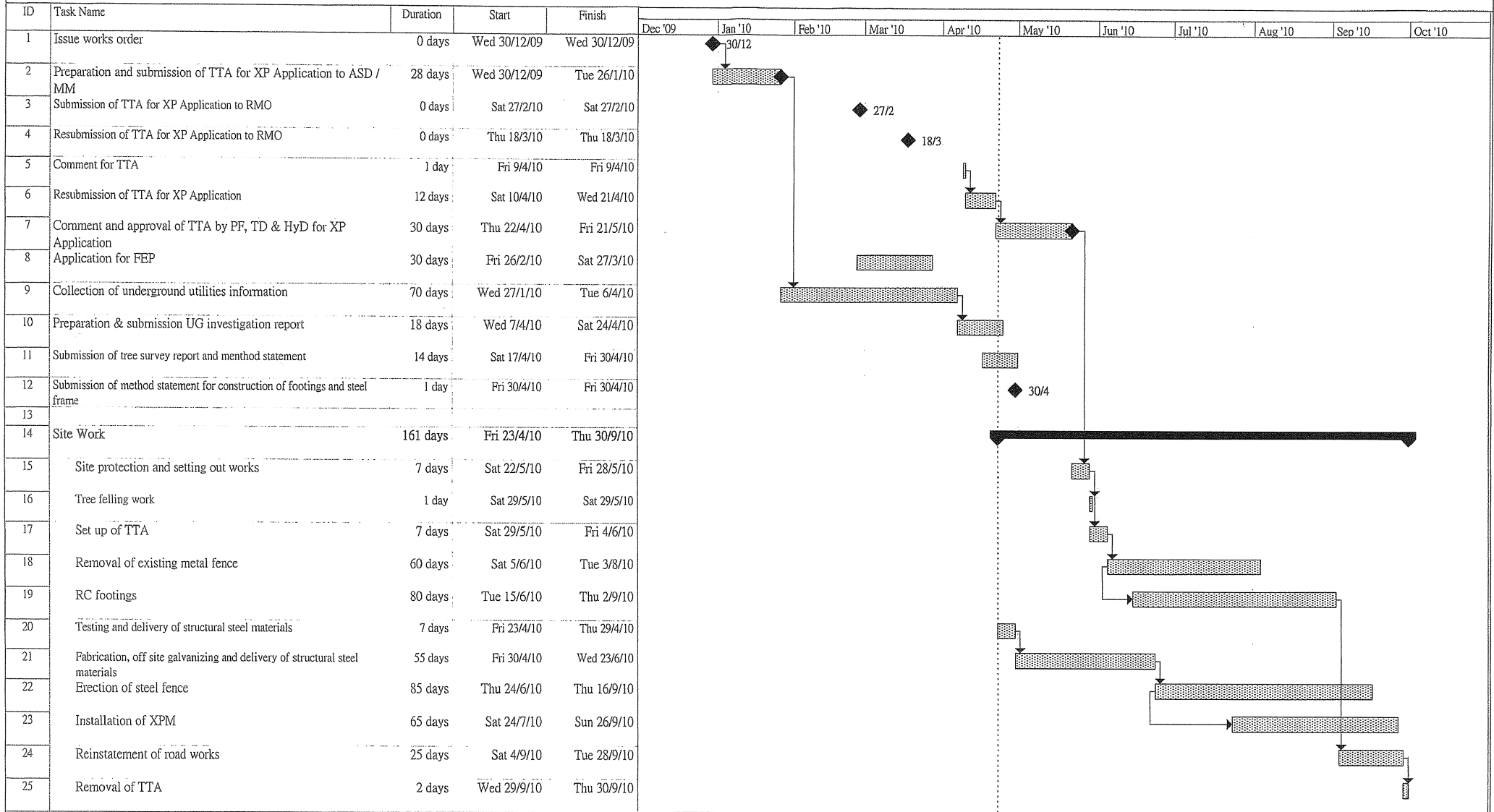
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Appendix A. Construction Works Programme

The organisation chart is presented on the next page.

Master Programme for Construction of a Secondary Boundary Fence at Sha Tau Kok (Rev. 0)

ASD 010962

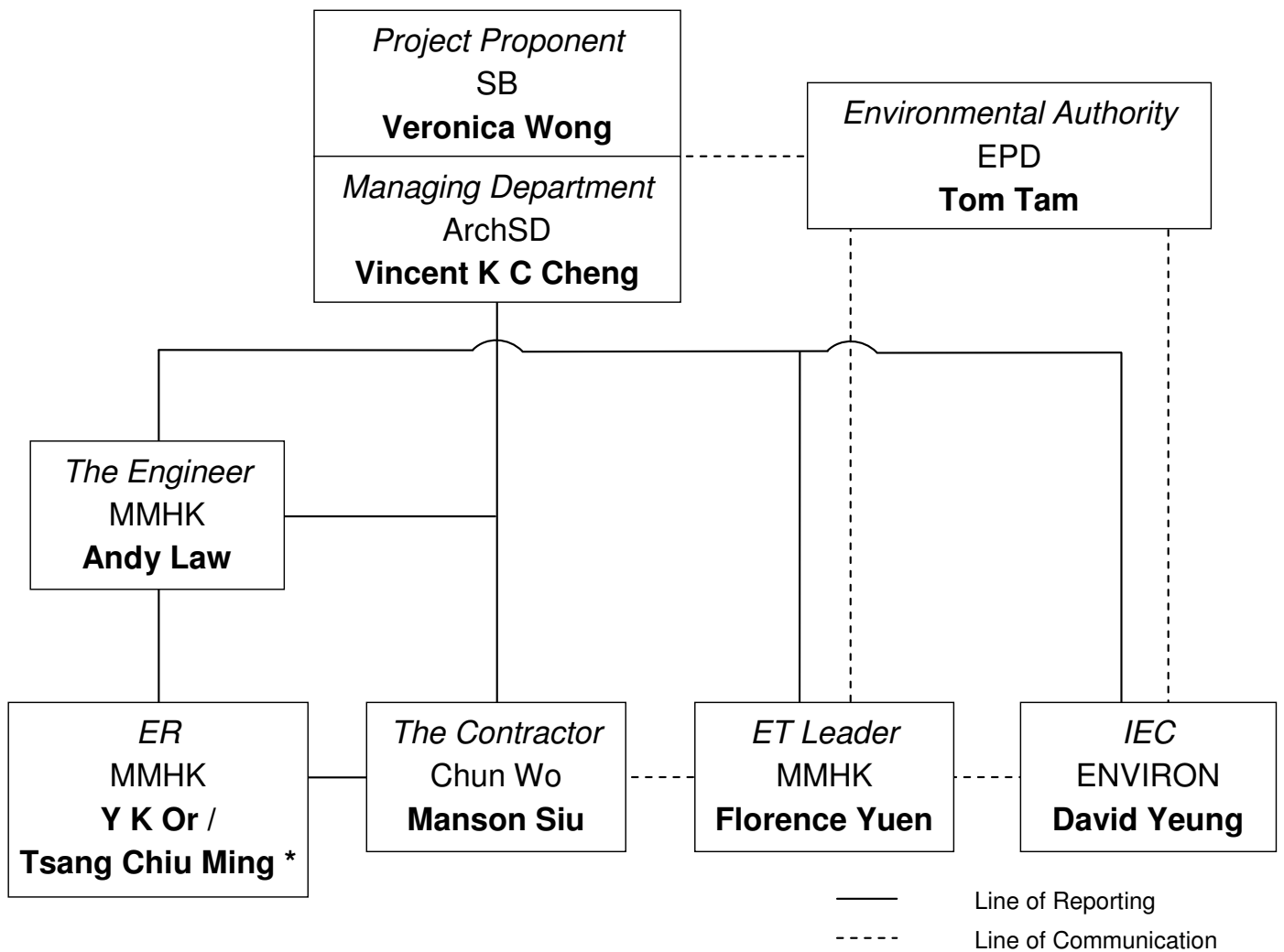


Project: STK Boundary Fence 200912

Task: Progress Summary External Tasks Deadline Split Milestone Project Summary External Milestone

Appendix B. Project Organisation Chart for Section 4

This Appendix is presented on the next page.



Key Personnel Contact List			
Role	Department / Company	Name	Telephone No.
Project Proponent	Security Bureau (SB)	Ms. Veronica Wong	2810 3523
Managing Department	Architectural Services Department (ArchSD)	Mr. Vincent K C Cheng	2867 3871
Environmental Authority	Environmental Protection Department (EPD)	Mr. Tom Tam	2835 1843
The Engineer	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Andy Law	2828 5806
Engineer's Representative (ER)	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Y K Or * (until 15 August 2010)	2828 5740
		Mr. Tsang Chiu Ming * (from 16 August 2010)	2683 1179
Independent Environmental Checker (IEC)	ENVIRON Hong Kong Limited (ENVIRON)	Mr. David Yeung	3743 0788
Environmental Team (ET) Leader	Mott MacDonald Hong Kong Limited (MMHK)	Ms. Florence Yuen	2828 5768
The Contractor / Project Manager	Chun Wo Construction & Engineering Company Limited (Chun Wo)	Mr. Manson Siu	9129 7165

Appendix C. Environmental Quality Performance Limits

Table C.1: Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
Daytime (07:00-19:00) except general holidays and Sundays <i>Measurements in L_{eq} (30min)</i>	When one documented complaint is received	75 dB(A)

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Appendix D. Event and Action Plans

Table D.1: Event and Action Plan for Construction Noise

EVENT	ACTION				
	ET Leader	IEC	ER	Contractor	
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures. 	<ol style="list-style-type: none"> 1. Review with analyzed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analyzed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals. 	
Limit Level	<ol style="list-style-type: none"> 1. Identify the source. 2. Notify IEC, ER, EPD and the Contractor. 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 IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analyzed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated. 	

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Appendix E. Schedule of Mitigation Measures from the EIA Report and EM&A Manual

Table E.1: Recommended Mitigation Measures – Air Quality

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
2.5.2	3.2.2	The following good site practice should be implemented: <ul style="list-style-type: none"> ■ any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading; ■ the working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet; ■ dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting; ■ the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should paved with concrete, bituminous materials or hardcore; ■ the portion of road leading only to a construction site that is within 30m of designated vehicle entrance or exit should be kept clear of dusty materials; ■ all dusty materials should be sprayed with water prior to any loading, unloading or transfer; ■ vehicle speed should be limited to 10kph except on completed access roads; ■ every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	Contractor	DC	✓

Legend: (1) DC - During Construction
 (2) ✓ - Implemented
 P - Partially Implemented
 X - Not Implemented
 REC - Rectified by Contractor
 N/A - Not Applicable

Table E.2: Recommended Mitigation Measures – Noise

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
3.8.14	4.8.1	<p>The following good site practical should be implemented:</p> <ul style="list-style-type: none"> ■ The Contractor shall adopt the Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD; ■ The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines; ■ Before commencing any work, the Contractor shall submit to the Engineer Representative for approval the method of working, equipment and noise mitigation measures intended to be used at the site; ■ The Contractor shall devise and execute working methods to minimise the noise impact on the surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented; ■ Noisy equipment and noisy activities should be located as far away from the NSRs as is practical; ■ Unused equipment should be turned off. PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided; ■ Regular maintenance of all plant and equipment; ■ Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable. 	Contractor	DC	P
3.8.1 - 3.8.3	4.8.2 - 4.8.3	<p>Other than good site practice, the Contractor is required to adopt Levels 1 and 2 site-specific direct mitigation measures as specified below during the construction phase.</p> <p>With construction / demolition work undertaken at a distance of 60m or less to the NSRs, below mitigation measures should be included:</p> <p>Level 1 – Use of Quiet Plant and Movable Noise Barrier</p> <ul style="list-style-type: none"> ■ The Contractor shall obtain particular models of plant that are quieter than standards given in GW-TM. ■ Purpose-built movable noise barriers should be used to mitigate construction noise directly at sources that are not usually mobile provide that the direct line of sight to the source is blocked. 	Contractor	DC	N/A
3.8.9	4.8.4	<p>In addition to the use of quiet plant and movable noise barrier, alternative demolition method of existing boundary fence at Section 2-3 shall be used where demolition works would be undertaken at a distance of 12m or less to the NSRs. These particular mitigation measures should be included:</p> <p>Level 2 – Alternative Demolition Method of Existing Boundary Fence</p> <ul style="list-style-type: none"> ■ The use of welder is recommended to replace the use of hand-held driller; ■ The use of hand-held breaker with movable noise barrier is recommended to replace the use of mini-robot mounted breaker; and the duration for the use of hand-held breaker is minimal as only the surface level of the footing to be broken; and ■ The removal of the footing of the existing boundary fence should be carried by concrete crusher mini-robot mounted after the surface level broken by hand-held breaker. 	Contractor	DC	N/A

Legend: (1) DC - During Construction
 (2) ✓ - Implemented
 P - Partially Implemented
 X - Not Implemented
 REC - Rectified by Contractor
 N/A - Not Applicable

Table E.3: Recommended Mitigation Measures – Water Quality

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
4.7.1	5.3.1	<p>Good site practices in addition to the implementation of mitigation measures would minimize the impact to the surrounding environment.</p> <p><i>General Prevention and Precaution Measures:</i></p> <ul style="list-style-type: none"> ■ The site should be confined to avoid silt runoff to the site. ■ No discharge of silty water into the storm drain and drainage channel within and the vicinity of the site. ■ Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials. ■ Stockpiles to be covered by tarpaulin to avoid spreading of materials during rainstorms; ■ Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; ■ Chemical waste containers shall be labelled with appropriate warning signs in English and Chinese to avoid accidents. there shall also be clear instructions showing what action to take in the event of an accidental; ■ Storage areas shall be selected at safe locations on site and adequate space shall be allocated to the storage area; ■ Any construction plant which causes pollution to the water system due to leakage of oil or fuel shall be removed off-site immediately; ■ Spillage or leakage of chemical waste to be controlled by using suitable absorbent materials; ■ Chemicals will always be stored on drip trays or in bunded areas where the volume is 110% of the stored volume; ■ Regular clearance of domestic waste generated in the temporary sanitary facilities to avoid waste water spillage. ■ Temporary sanitary facilities to be provided for on-site workers during construction. 	Contractor	DC	P, (REC)
4.7.2 - 4.7.3	5.3.2 - 5.3.3	<p>Concreting Work</p> <p>A temporary drainage channel and associated facilities should be provided to collect the runoff generated and prevent concrete-contaminated water from entering watercourses. Adjustment of pH can be achieved by adding a suitable neutralising reagent to wastewater prior to discharge.</p> <p>The concreting works should be temporarily isolated with proper methods, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props.</p>	Contractor	DC	N/A
4.7.4	5.3.4	<p>Soil Excavation and Stockpiling</p> <p>Excavated soil which needs to be temporarily stockpiled should be stored in a specially designated area and provided with a tarpaulin cover to avoid runoff into the drainage channels.</p>	Contractor	DC	✓

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
4.7.5 - 4.7.6	5.3.5 - 5.3.6	<p>Site Depot</p> <p>All compounds in works areas should be located on areas of hard standing with provision of drainage channels and settlement ponds where necessary to allow interception and controlled release of settled/treated water. Hard standing compounds should drain via an oil interceptor. The oil interceptor should be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass should be provided to avoid overload of the interceptor's capacity. Any contractor generating waste oil or other chemicals as a result of his activities should register as a chemical waste producer. Disposal of the waste oil should be done by a licensed collector.</p> <p>Good housekeeping practices should be implemented to minimise careless spillage and to keep the storage and the work space in a tidy and clean condition. Appropriate training including safety codes and relevant manuals should be given to the personnel who regularly handle the chemicals on site.</p>	Contractor	DC	P
4.7.7	5.3.7	<p>Construction of Checkpoint</p> <p>Sewage system should be constructed to divert domestic sewage, which will be generated from the sanitary facilities provided in the new checkpoint at Shek Chung Au, to public sewer connected to government sewage treatment facilities.</p>	Contractor	DC	N/A

- Legend: (1) DC - During Construction
- (2) ✓ - Implemented
 P - Partially Implemented
 X - Not Implemented
 REC - Rectified by Contractor
 (REC) - Partially Rectified by Contractor
 N/A - Not Applicable

Table E.4: Recommended Mitigation Measures – Waste Management

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
5.6.7	6.3.6	<p>Site Clearance</p> <p>The topsoil and vegetation removed and excavated material may have to be temporarily stockpiled on-site. Control measures should be taken at the stockpiling area to prevent the generation of dust and pollution of stormwater channels, fish ponds or river channels. However, to eliminate the risk of blocking drains in the wet season, it is recommended that stockpiling of excavated materials during the wet season should be avoided as far as practicable.</p>	Contractor	DC	✓
5.6.10 - 5.6.12	6.3.8	<p>Construction and Demolition Materials</p> <p>Careful design, planning and good site management can minimize over-ordering and generation of waste materials such as concrete mortars and cement grouts. The design of formwork should maximize the use of standard wooden panels so to achieve high reuse levels. Alternatives such as steel formwork or plastic facing should be considered to increase the potential for reuse.</p> <p>The Contractor should recycle as much of the C&D materials as possible on-site. Proper segregation of waste on-site will increase the feasibility of certain components of the waste stream by the recycling contractors. Different areas of the worksite shall be designated for such segregation and storage wherever site conditions permit.</p> <p>Trip-ticket system should be employed to monitor the disposal of C&D material and solid at public filling facilities and landfills, and to control fly-tipping. Government has established a differentiated charging scheme for the disposal of waste to landfill, construction waste sorting facilities and public fill facilities. This will provide additional incentives to reduce the volume of waste generated and to ensure proper segregation of wastes.</p>	Contractor	DC	✓
5.6.13 - 5.6.14	6.3.9 - 6.3.13	<p>Chemical Waste</p> <p>For those processes which generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste. Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handed in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste as follows:</p> <p>Containers used for the storage of chemical wastes should:</p> <ul style="list-style-type: none"> ■ 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 450 litres unless the specification have been approved by the EPD; and ■ display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations, <p>The storage area for chemical wastes should:</p> <ul style="list-style-type: none"> ■ be clearly labelled and used solely for the storage of chemical waste; ■ be enclosed on at least 3 sides; ■ have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area 	Contractor	DCP	N/A

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		whichever is the greatest; <ul style="list-style-type: none"> ■ have adequate ventilation; ■ be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and ■ be arranged so that incompatible materials are adequately separated. Disposal of chemical waste should: <ul style="list-style-type: none"> ■ be via a licensed waste collector; and ■ be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers, or ■ to be re-user of the waste, under approval from the EPD. 			
5.6.16	6.3.15	General Refuse Should be stored in enclosed bins or compaction units separate from C&D and chemical wastes. The Contractor should employ a reputable waste collector to remove general refuse from the site, separate from C&D and chemical wastes, on a regular basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.	Contractor	DC	✓
5.6.18	6.3.16	Construction Waste Management Plan A construction waste management plan (CWMP) should be prepared and developed by the contractor to ensure proper collection, treatment and disposal of waste on site. This CWMP will also take into account the requirement to handle chemical wastes on site which will need to be managed by a licensed waste collection contractor.	Contractor	DC	✓

- Legend: (1) DC - During Construction
 DCP - During Construction Planning
- (2) ✓ - Implemented
 P - Partially Implemented
 X - Not Implemented
 REC - Rectified by Contractor
 N/A - Not Applicable

Table E.5: Recommended Mitigation Measures – Ecology

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
Table 6.38	7.2	Ecological Impacts on Floral Species of Conservation Concern ■ Erection of protective fencing to protect the plant during construction period	Contractor	DC	✓
Table 6.40	7.2	Potential Ecological Impacts on Offsite Habitats ■ Good site practices for controlling the dust and water quality (avoid stockpiles adjacent to wetlands, covering the stockpiles with impervious sheeting, control of vehicle speed, no discharge of silty water to the rivers, streams and drainage channels); ■ Clear definition of works limit to avoid impact on adjacent habitats.	Contractor	DC	✓
Table 6.39 - Table 6.45	7.2	Disturbance to Wetland-Dependent Birds, Raptors, Terrestrial Birds and Egretty ■ Good working practices include switching off unused equipment, keep minimum number of powered mechanical equipment in operation at the same period, the use of stockpiles and other structures to form noise barriers where practicable, avoidance of feeding the wildlife to cause disturbance, site confinement and proper cover of stockpiles with impervious sheeting to minimize construction noise, uncontrolled surface runoff and discharge of silts; ■ Avoidance of construction works using Power Mechanical Equipments within the Wetland Conservation Area during bird migratory season (15th November – 15th March); and ■ Restriction of excavation works within a 150m buffer zone from the egretty to ardeid non-breeding season (from August to February).	Contractor	DC	P

Legend: (1) DC - During Construction
 (2) ✓ - Implemented
 P - Partially Implemented
 X - Not Implemented
 REC - Rectified by Contractor
 N/A - Not Applicable

Table E.6: Recommended Mitigation Measures – Landscape and Visual

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
Preservation of Existing Vegetation					
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> To retain trees that have high amenity or ecology value and contribute most to the landscape and visual amenity of the site and its immediate environs. 	Project Landscape Architect / Contractor	TCP	✓
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> Creation of precautionary area around trees to be retained equal to half of the trees canopy diameter. Precautionary area to be fenced. 	Project Landscape Architect / Contractor	BCP	✓
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> Prohibition of the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the precautionary area. 	Project Landscape Architect / Contractor	TCP	✓
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> Phased segmental root pruning for trees to be retained and transplanted over a suitable period (determined by species and size) prior to lifting or site formation works which affect the existing rootball of trees identified for retention. The extent of the pruning will be based on the size and the species of the tree in each case. 	Project Landscape Architect / Contractor	TCP	N/A
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> Pruning of the branches of existing trees identified for transplantation and retention to be based on the principle of crown thinning maintaining their form and amenity value. 	Project Landscape Architect / Contractor	TCP	N/A
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered. 	Project Landscape Architect / Contractor	TCP	N/A
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> The rectification and repair of damaged vegetation following the construction phase to it's original condition prior to the commencement of the works or replacement using specimens of the same species, size and form where appropriate to the design intention of the area affected. 	Project Landscape Architect / Contractor	TCP	N/A
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key stages in the preparation of the trees, the implementation of protection measures and health monitoring through out the construction period. 	Project Landscape Architect / Contractor	TCP	✓
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval under the lease conditions and in accordance with ETWB TCW No. 2/2004 and WBTC No. 3/2006. 	Project Landscape Architect / Contractor	TCP	P
Table 7-13 CP1	Table 9-1	<ul style="list-style-type: none"> The tree preservation works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection specification would be included within the contract documents. 	Contractor	TCP	✓
Preservation of Existing Topsoil					
Table 7-13 CP2	Table 9-1	<ul style="list-style-type: none"> Topsoil disturbed during the construction phase should be tested using a standard soil testing methodology and where it is found to be worthy of retention stored for re-use. 	Contractor	TCP	N/A

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
Table 7-13 CP2	Table 9-1	<ul style="list-style-type: none"> The soil will be stockpiled to a maximum height of 2m and will be either temporarily vegetated with hydroseeded grass during construction or covered with a waterproof covering to prevent erosion. 	Contractor	TCP	N/A
Table 7-13 CP2	Table 9-1	<ul style="list-style-type: none"> The stockpile should be turned over on a regular basis to avoid acidification and the degradation of the organic material, and reused after completion. Alternatively, if this is not practicable, it should be considered for use elsewhere, including other projects. 	Contractor	TCP	N/A
Permanent and Temporary Works Areas					
Table 7-13 CP3	Table 9-1	<ul style="list-style-type: none"> Where appropriate to the final design the landscape of these works areas should be restored following the completion of the construction phase. 	Contractor	TCP	N/A
Table 7-13 CP3	Table 9-1	<ul style="list-style-type: none"> Construction site controls should be enforced including the storage of materials, the location and appearance of site accommodation and the careful design of site lighting to prevent light spillage. 	Contractor	TCP	P
Mitigation Planting					
Table 7-13 CP4	Table 9-1	<ul style="list-style-type: none"> Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase . 	Contractor	TCP	N/A
Table 7-13 CP4	Table 9-1	<ul style="list-style-type: none"> Use of native plant species predominantly in the planting design for the buffer areas. 	Contractor	TCP	N/A
Table 7-13 CP4	Table 9-1	<ul style="list-style-type: none"> The tree planting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree planting specification would be included within the contract documents. 	Contractor	TCP	N/A
Transplantation of Existing Trees					
Table 7-13 CP5	Table 9-1	<ul style="list-style-type: none"> The tree transplanting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection / transplanting specification would be included within the contract documents. 	Contractor	PTCPW	N/A
Design of the Fence and associated Structures					
Table 7-14 OP1	Table 9-2	<p>Design of Boundary Fence, Boundary Patrol Road and Police Check Point – These structural elements will be designed in accordance with security requirement from Police Force and incorporate design features as part of design mitigation measures including:</p> <ol style="list-style-type: none"> Integrated design approach – the boundary fence should be integrated, as far as technically feasible, with existing built structures such as existing road, footpath and track and embankment of fishponds, river and drainage channel as part of design mitigation measures to reduce the potential cumulative impact of the proposed works. The location and orientation of the police check points should be away from landscape and visually sensitive areas such as wetland, fishpond and agricultural field. Building massing - the proposed use of simple 	ArchSD	TDP	P

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		<p>responsive design for the built structures with a low building height profile to reduce the potential visual mass of the structure within a rural context.</p> <p>3. Treatment of built structures - the architectural design should seek to reduce the apparent visual mass of the facilities further through the use of natural materials such as wooden frame, vertical greening or other sustainable materials such as recycled plastic.</p> <p>4. Responsive building and fence finishes - In terms of the proposed finishes natural tones should be considered for the colour palette with non-reflective finishes are recommended to reduce glare effect. The use of colour blocking on the proposed fence could be used to break up the visual mass of the structure.</p> <p>5. Responsive lighting design – Aesthetic design of architectural and track lighting with following glare design measures:</p> <ul style="list-style-type: none"> – Directional and full cut off lighting is recommended particularly for areas adjacent to existing village to minimise light spillage. – Minimise geographical spread of lighting, only applied for safety and security reasons; – Limited lighting intensity to meet the minimum safety and operation requirement; and – High-pressure sodium road lighting is recommended for more stringent light control reducing spillage and thus visual impacts. 			
Compensatory Planting Proposals					
Table 7-14 OP2	Table 9-2	<ul style="list-style-type: none"> ■ Utilise native to Hong Kong will be utilized within the buffer planting areas. 	Contractor	TDP	P
Table 7-14 OP2/3	Table 9-2	<ul style="list-style-type: none"> ■ A qualified or registered landscape architect will be involved in the design, construction supervision and monitoring, and maintenance period to oversee the implementation of the recommended landscape and visual mitigation measures including the tree preservation and landscape works on site. 	Contractor	TDP	✓
Table 7-14 OP2	Table 9-2	<p>Tree and Shrub Planting – Given the rural nature of the proposed alignment it is recommended that the where possible tree and shrub species which are native to Hong Kong be used. In addition where possible the planting of new trees and shrubs will aim to link together existing woodland areas and small tree groups to improve the connectivity between habitats and create more coherent landscape framework. The planting of small groups of trees along the alignment of the proposed fence will serve to de-emphasise the horizontality of the fence structure and provide for better sense of visual integration with the landscape context. Where practicable vertical greening measures should also be considered on engineering structures.</p>	Contractor	TDP	P
Table 7-14 OP2	Table 9-2	<p>Compensatory Planting Proposals – Given the works extent is largely limited along existing roadside embankment to minimise impact to existing village settlements and valuable landscape resources such as wetland, fishpond, stream course and existing trees, and considered the importance of</p>	Contractor	TDP	P

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		<p>tree retention within the works area, new tree planting will concentrate in selected new amenity areas along the alignment, infilling between retained and transplanted trees. The preliminary planting proposals for the proposed works include the planting of some 357 new trees utilising a combination of mature to light standard sized stock (i.e. approximately 15% of mature trees, 75% of standard trees, and 10% light standard trees). These trees will be planted in woodland clumps and small tree groups at strategic locations to de-emphasise the horizontality of the fence alignment. Based on preliminary findings the proposed planting will result in a compensatory planting ratio of 1:1 (new planting: trees recommended for felling). This compares favourably with the report's assertion that some 357 trees would be felled due to the proposed works. With the proposed preservation of existing trees, transplantation of trees in conflict with the proposals and the planting of new trees the project area will contain approximately 2000 trees. Trees forming part of the new planting will provide screening to neighbourhood villagers and will utilise species native to Hong Kong. These proposals will be subject to review at detailed design stage of the project.</p>			

- Legend: (1) TCP - Throughout Construction Phase
 BCP - Before Construction Phase Commences
 PTCPW - Prior to the Commencement of the Proposed Works
 TDP - Throughout Design Phase
- (2) ✓ - Implemented
 P - Partially Implemented
 X - Not Implemented
 REC - Rectified by Contractor
 N/A - Not Applicable

Construction of a Secondary Boundary Fence and New Sections of
Primary Boundary Fence and Boundary Patrol Road
Section 4 – Lin Ma Hang Village to Sha Tau Kok
Monthly EM&A Report for Aug 2010



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Appendix F. EM&A Schedule

Environmental Monitoring and Audit Schedule for Aug 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4 Noise Monitoring	5 *	6	7
8	9	10	11 Noise Monitoring *	12	13 @	14
15	16	17	18 Noise Monitoring	19	20 *	21
22	23	24	25 *	26	27 Noise Monitoring	28
29	30 Noise Monitoring	31				

- Noise Monitoring
- * Site Audit by Mott MacDonald (MM)
- @ Report Submission (EM&A Report)
- Public Holiday

Tentative Environmental Monitoring and Audit Schedule for Sep 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 *	2	3	4
5	6	7	8	9 Noise Monitoring *	10	11
12	13	14 @	15 Noise Monitoring *	16	17	18
19	20	21	22 Noise Monitoring *	23 The day following Mid-Autumn Festival	24	25
26	27	28	29 Noise Monitoring *	30		

- Noise Monitoring
- * Site Audit by Mott MacDonald (MM)
- @ Report Submission (EM&A Report)
- Public Holiday

Construction of a Secondary Boundary Fence and New Sections of
Primary Boundary Fence and Boundary Patrol Road
Section 4 – Lin Ma Hang Village to Sha Tau Kok
Monthly EM&A Report for Aug 2010



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Appendix G. Calibration Certificates

This Appendix begins on the next page.



Calibration Certificate

Certificate No. **02315**

Page 1 of 4 Pages

Customer : Mott MacDonald Hong Kong Limited

Address : 20/F, Two Landmark East, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong.

Order No. : Q00564

Date of receipt : 6-May-10

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31

Serial No. : 01262786

Test Conditions

Date of Test : 7-May-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

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

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

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	00804	22-Feb-11	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

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: 11-May-10



Calibration Certificate

Certificate No. 02315

Page 2 of 4 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L _A	Fast	94.03	94.0
		Slow		94.0
	L _C	Fast		94.0
	L _p	Fast		94.0
30 – 120	L _A	Fast	94.03	93.9
		Slow		93.9
	L _C	Fast		93.9
	L _p	Fast		93.9
30 – 120	L _A	Fast	113.97	113.8
		Slow		113.8
	L _C	Fast		113.8
	L _p	Fast		113.8

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

2. **Level Stability** : 0.0 dB
IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 02315

Page 3 of 4 Pages

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.9	0.0	± 0.7 dB
130	104.0	104.0	+0.1	
120	94.0	93.9 (Ref.)	--	
110	84.0	83.9	0.0	
100	74.0	73.9	0.0	
90	64.0	64.0	+0.1	
80	54.0	54.0	+0.1	

Uncertainty : ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.8	-0.1	± 0.4 dB
	94.0	93.9 (Ref.)	--	
	95.0	94.9	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.8	- 39.4 dB, ± 1.5 dB
63 Hz	-26.6	- 26.2 dB, ± 1.5 dB
125 Hz	-16.5	- 16.1 dB, ± 1 dB
250 Hz	-9.0	- 8.6 dB, ± 1 dB
500 Hz	-3.5	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.4	+ 1.2 dB, ± 1 dB
4 kHz	+1.3	+ 1.0 dB, ± 1 dB
8 kHz	-1.0	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.5	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 02315

Page 4 of 4 Pages

5. 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	39.9	± 0.5 dB
1/10 ²	40.0	40.0	
1/10 ³	40.0	39.9	± 1.0 dB
1/10 ⁴	40.0	40.5	

Uncertainty : ± 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 : 998 hPa.

----- END -----



Calibration Certificate

Certificate No. **96552**

Page 1 of 2 Pages

Customer : Mott MacDonald Hong Kong Limited

Address : 7/F, West Wing Office Building, New World Centre, 20 Salisbury Road, Tsim Sha Tsui, Kowloon, Hong Kong.

Order No. : Q92584

Date of receipt : 15-Dec-09

Item Tested

Description : Acoustic Calibrator

Manufacturer : Castle

Model : GA607

Serial No. : 040162

Test Conditions

Date of Test : 16-Dec-09

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F06, F20, Z02.

Test Results

All results were within the IEC 942 Class 1 specification.

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

Main 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	93091	18-Jun-10	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR
S041	Universal Counter	94005	6-Aug-10	SCL-HKSAR
S206	Sound Level Meter	93966	5-Aug-10	SCL-HKSAR

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 : 

Alan Chu

Date: 21-Dec-09

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 8801 Fax: 2425 8646

The copyright of this certificate is owned by Hong Kong Calibration Ltd.. It may not be reproduced except in full.



Calibration Certificate

Certificate No. 96552

Page 2 of 2 Pages

Results :

1. Level Accuracy

UUT Setting (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	93.89	± 0.3 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 942 Class 1 Spec.
1	1.002	± 2 %

Uncertainty : $\pm 3.6 \times 10^{-6}$

3. Level Stability : 0.0 dB

IEC 942 Class 1 Spec.: ± 1 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : 0.8 %

IEC 942 Class 1 Spec. : < 3 %

Uncertainty : ± 2.3 % of rdg.

Remark : 1. UUT : Unit-Under-Test

2. The above measured values were the mean of 3 measurements.

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

4. Atmospheric Pressure : 1 008 hPa.

----- END -----

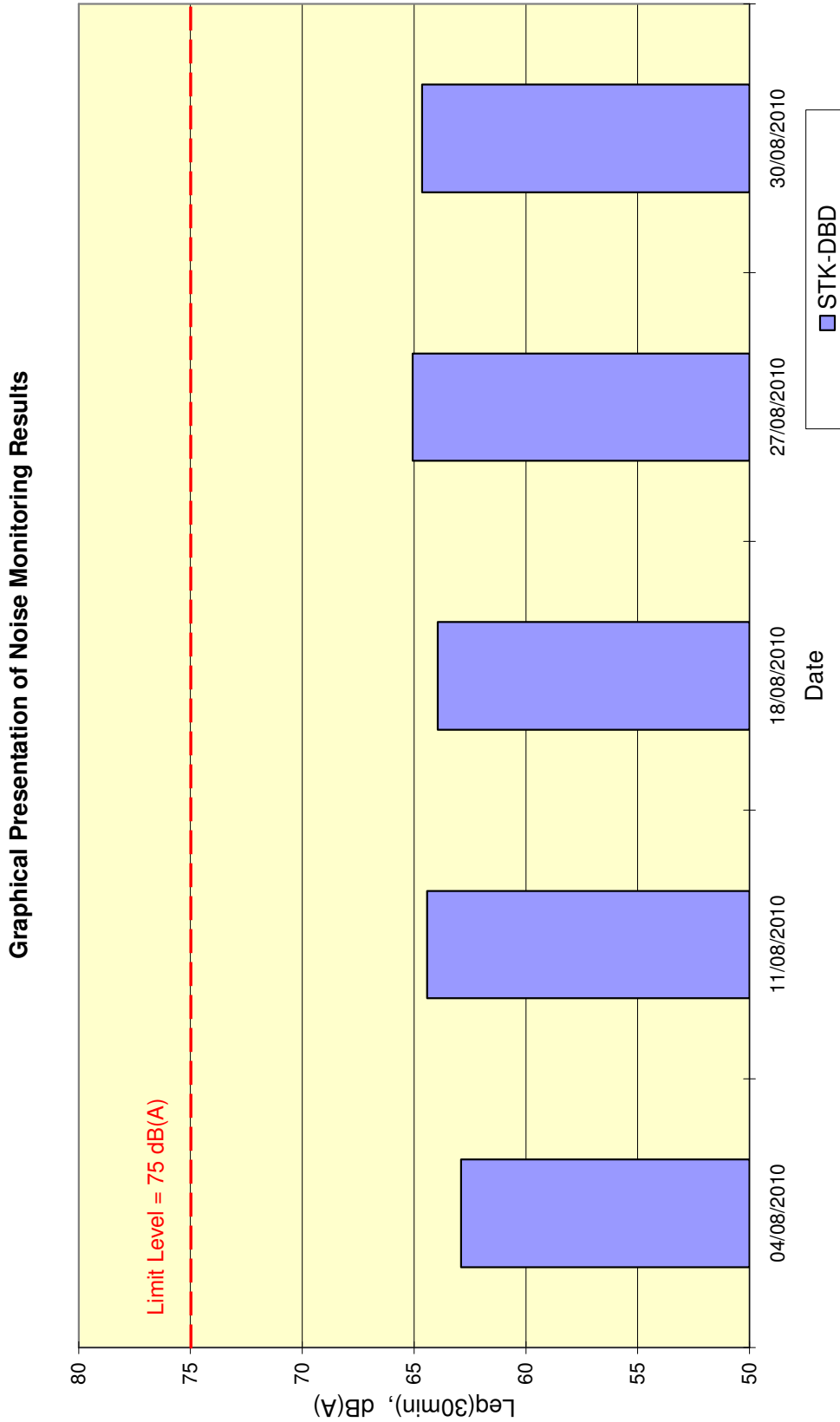
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Appendix H. Noise Monitoring Results and Graphical Presentation

EM&A Noise Monitoring Results

Daytime Noise Monitoring Results at Station STK-DBD

Date	Weather Conditions	Wind Speed, m/s	Noise Level for 30-min, dB(A)			Major Construction Noise Sources during monitoring	Other Noise Sources during monitoring	
			Start Time	End Time	Leq			
04-Aug-10	Sunny	1.7	09:04	09:34	62.9	66.8	46.4	Traffic noise, bird noise, insect noise, pedestrians
11-Aug-10	Sunny	1.1	15:09	15:39	64.4	68.0	48.2	Traffic noise, pedestrians, grass cutting near Gate One, bird noise
18-Aug-10	Cloudy	0.0	08:27	08:57	63.9	67.0	51.1	Traffic noise, bird noise, insect noise, pedestrians, cyclists, trolley, noise from inside STK-DBD
27-Aug-10	Sunny	1.0	08:50	09:20	65.1	69.2	48.2	Traffic noise, bird noise, insect noise, pedestrians
30-Aug-10	Sunny	1.9	09:00	09:30	64.6	68.3	49.8	Traffic noise, bird noise, insect noise, pedestrians
					Min.	62.9		
					Max.	65.1		



Appendix I. Monthly Waste Flow Table

Table I.1: Monthly Summary Waste Flow Table for 2010

Month	Actual Quantities of Inert C&D Materials Generated Monthly (in '000 m ³)										Actual Quantities of C&D Wastes Generated Monthly									
	Total Quantity Generated		Broken Concrete		Reused in the Contract		Reused in other Projects		Disposed of at Public Fill		Metals ('000 kg)		Paper/ Cardboard ('000 kg)		Plastics ('000 kg)		Chemical waste ('000 kg)		Others (e.g. refuse) ('000 m ³)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Apr	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
May	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0.0195
Jun	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Sub-total	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0.0195
Jul	-	0.0195	-	0	-	0	-	0	-	0.0195	-	0	-	0	-	0	-	0	-	0.013
Aug	-	0.1625	-	0	-	0	-	0	-	0.1625	-	0	-	0	-	0	-	0	-	0.013
Sep																				
Oct																				
Nov																				
Dec																				
Total	-	0.1820	-	0	-	0	-	0	-	0.1820	-	0	-	0	-	0	-	0	-	0.0455

Appendix J. Complaint Log

Table J.1: Complaint Log for the Reporting Month (August 2010)

Log Ref.	Location	Complainant / Date of Contact	Details of Complaint	Investigation / Mitigation Action	File Closed
N/A	N/A	N/A	N/A	N/A	N/A

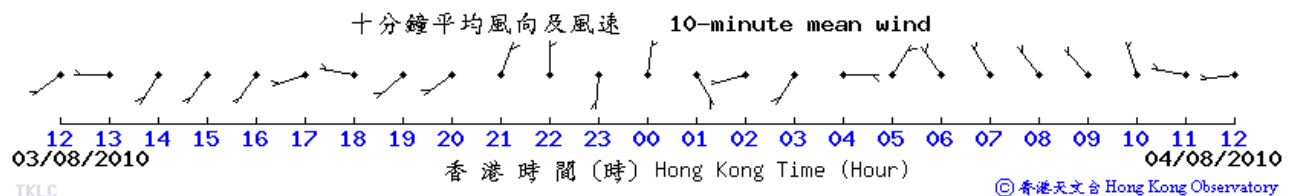
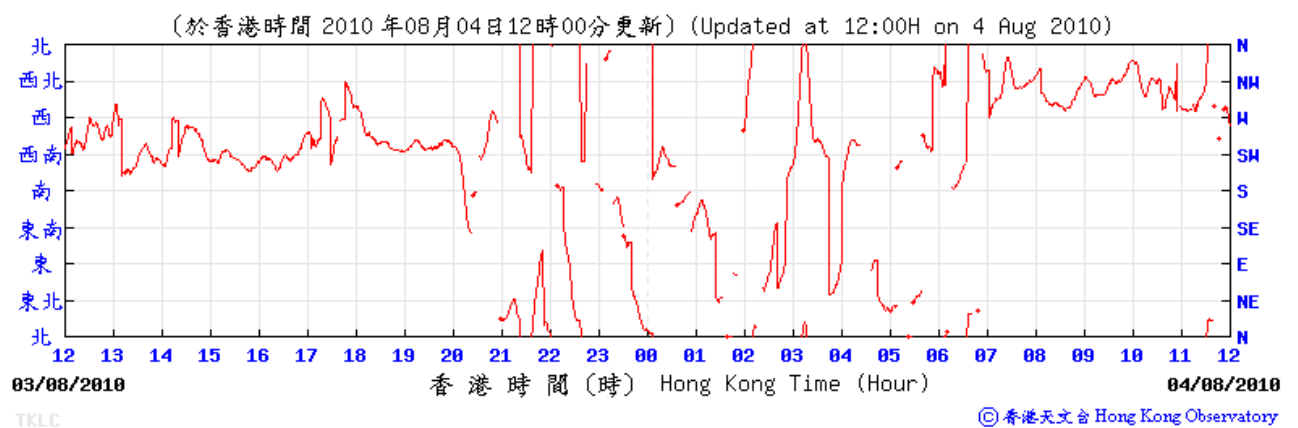
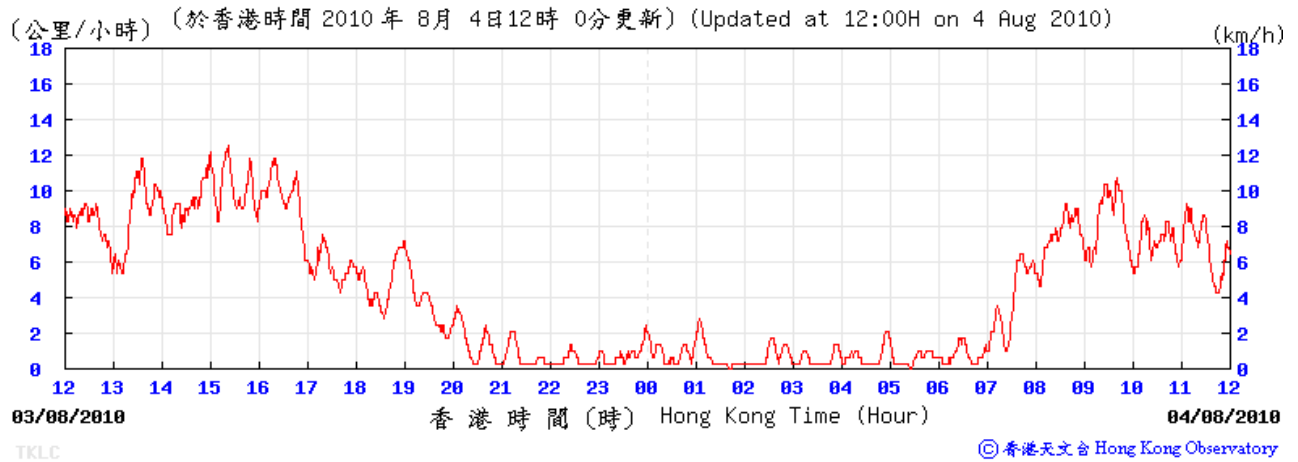
Note: No environmental complaint was received in August 2010.

Appendix K. Weather Information from Hong Kong Observatory

This Appendix presents wind data obtained from the nearest Hong Kong Observatory monitoring station, at Ta Kwu Ling, during noise impact monitoring days. It begins on the next page.

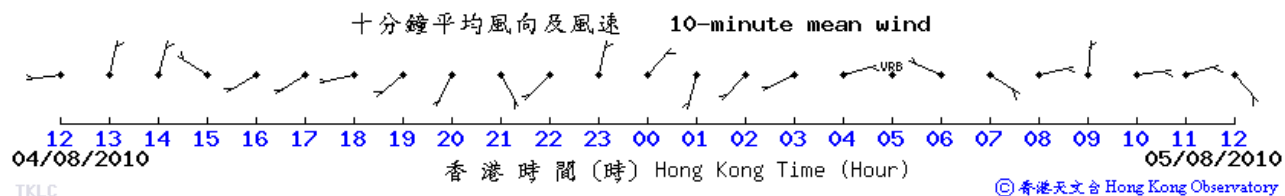
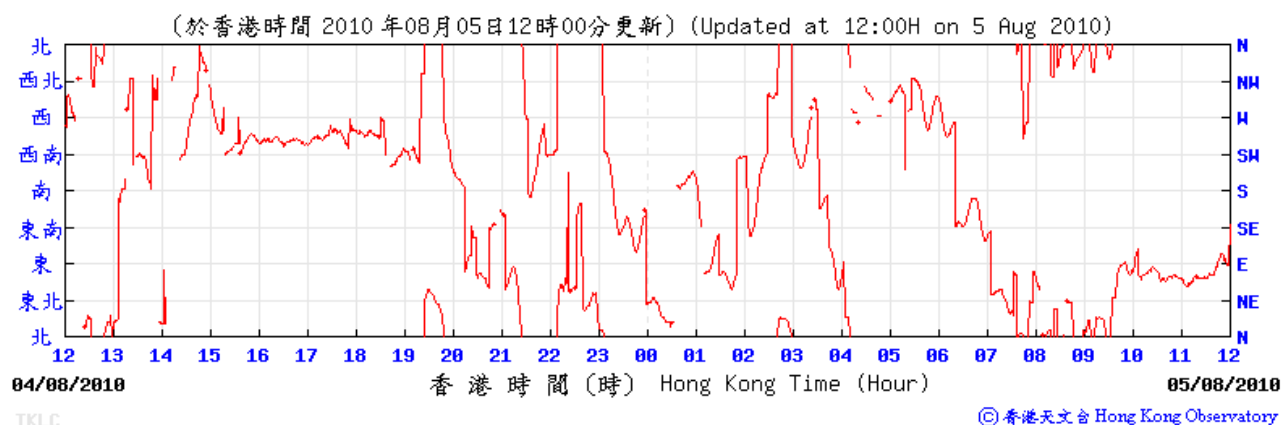
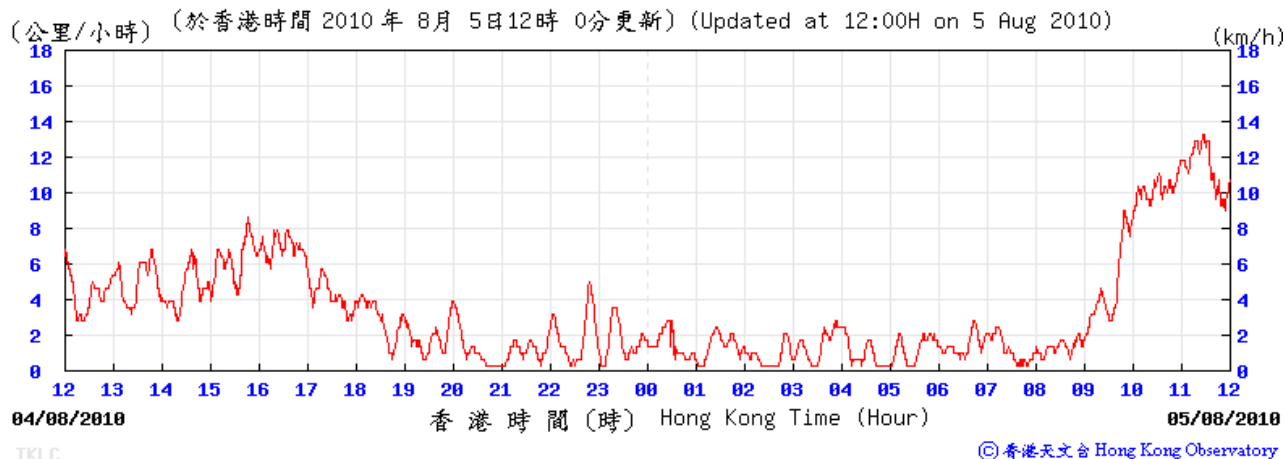
Wind Data for Ta Kwu Ling

4 Aug 2010



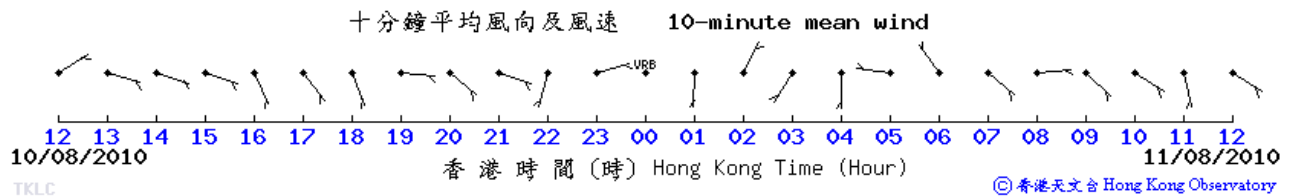
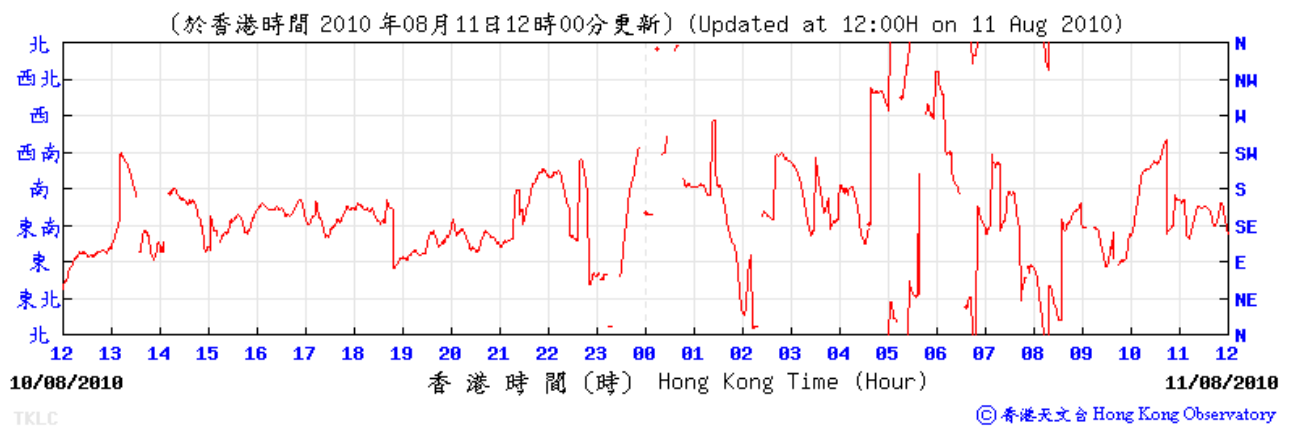
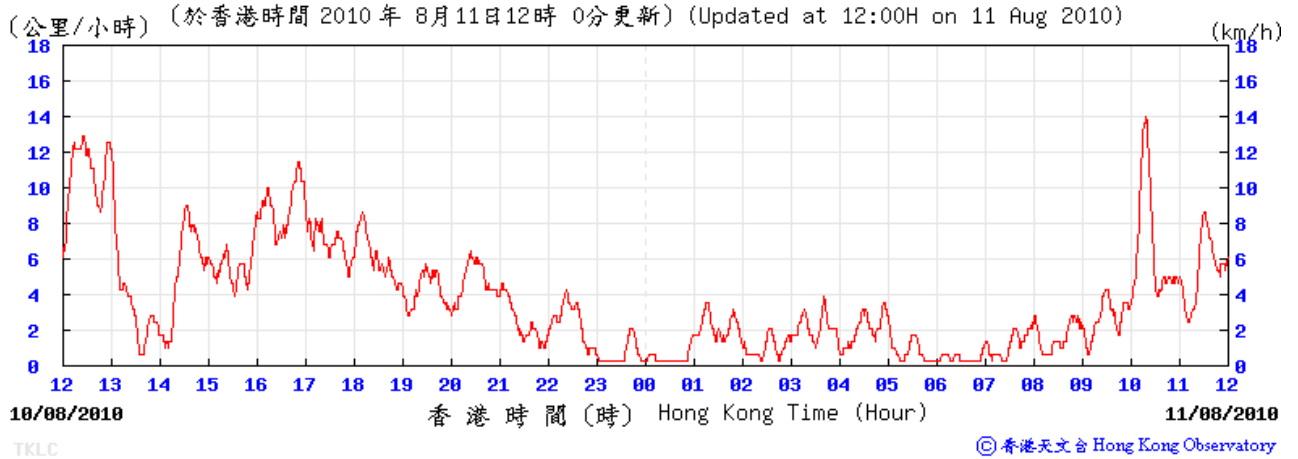
Wind Data for Ta Kwu Ling

5 Aug 2010



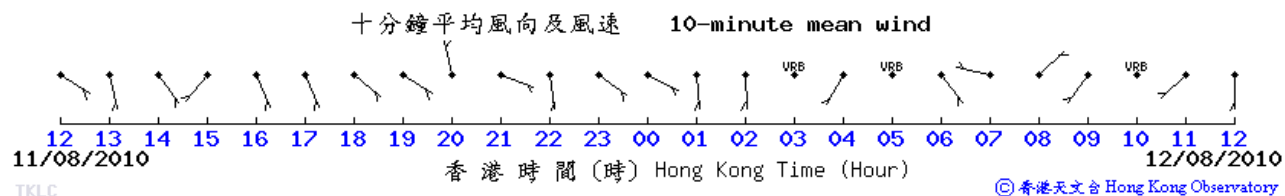
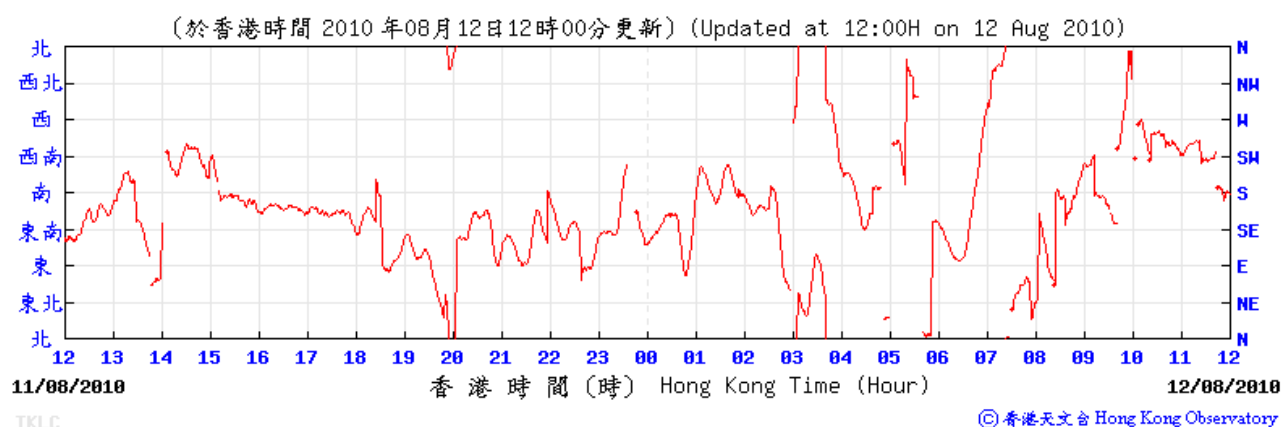
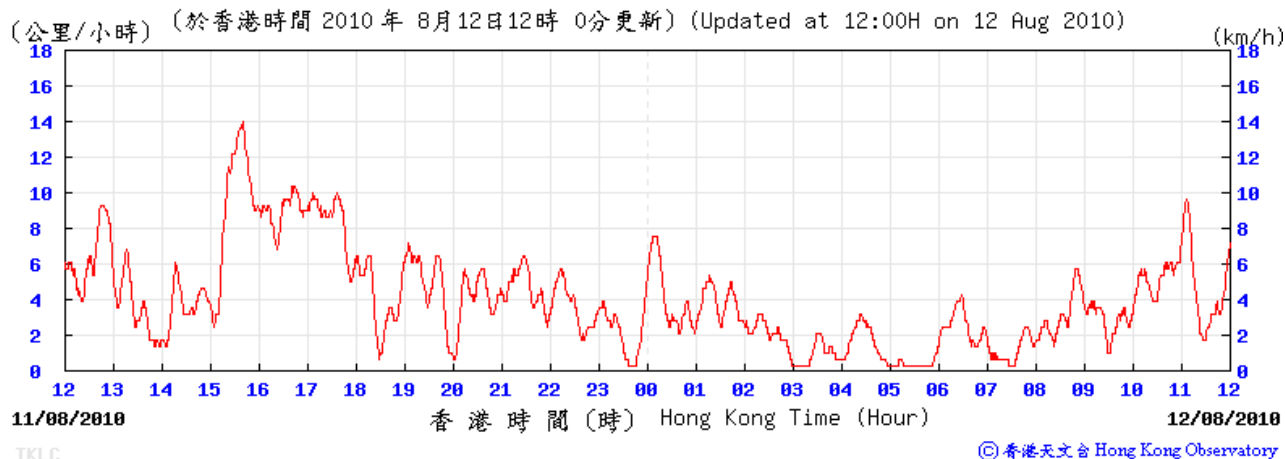
Wind Data for Ta Kwu Ling

11 Aug 2010



Wind Data for Ta Kwu Ling

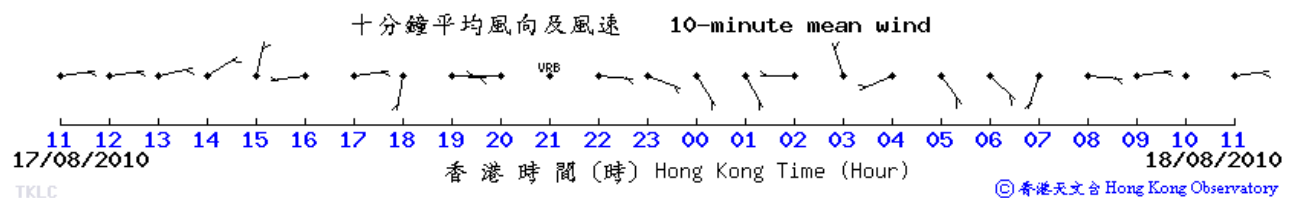
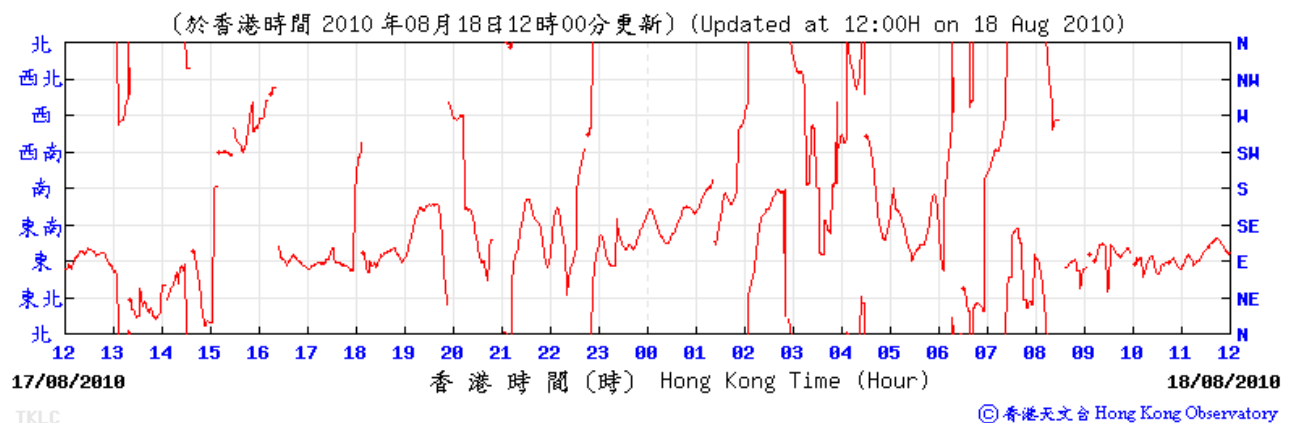
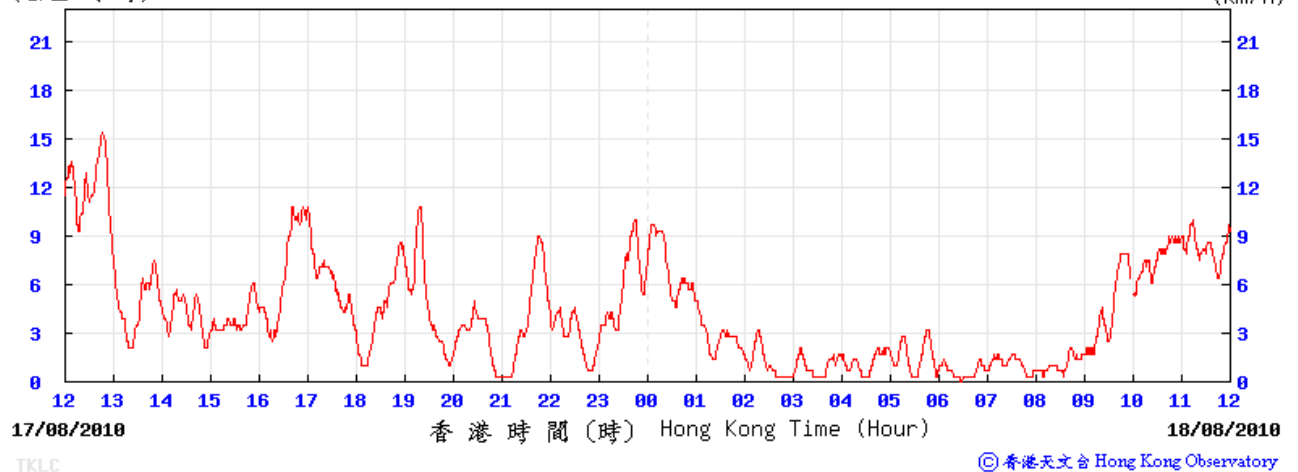
12 Aug 2010



Wind Data for Ta Kwu Ling

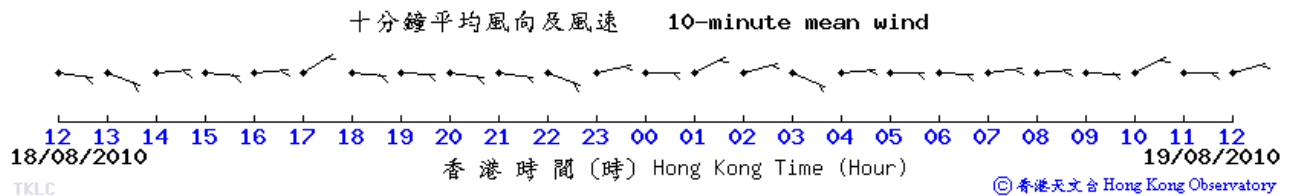
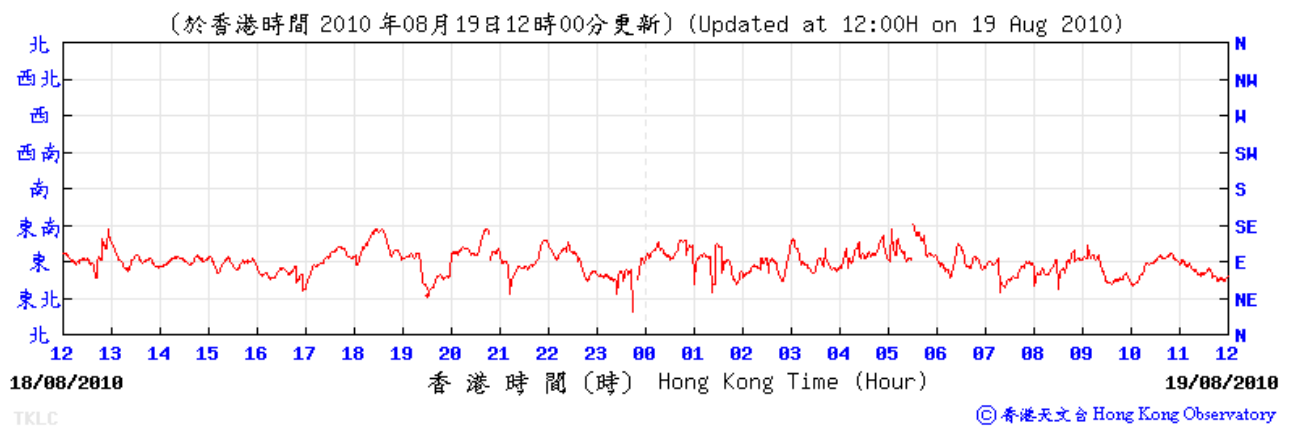
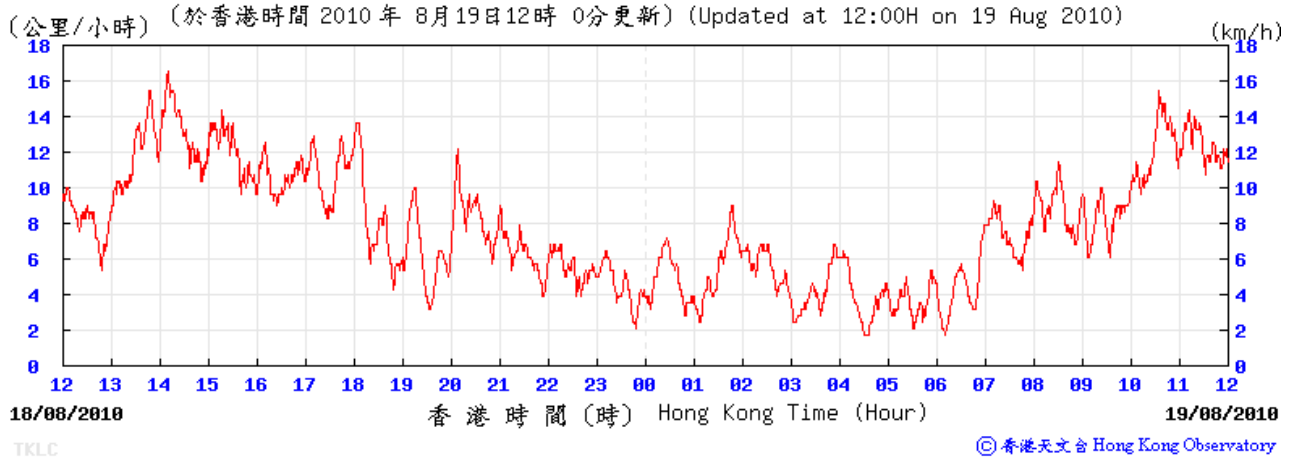
18 Aug 2010

(公里/小時) (於香港時間 2010 年 8 月 18 日 12 時 0 分更新) (Updated at 12:00H on 18 Aug 2010) (km/h)



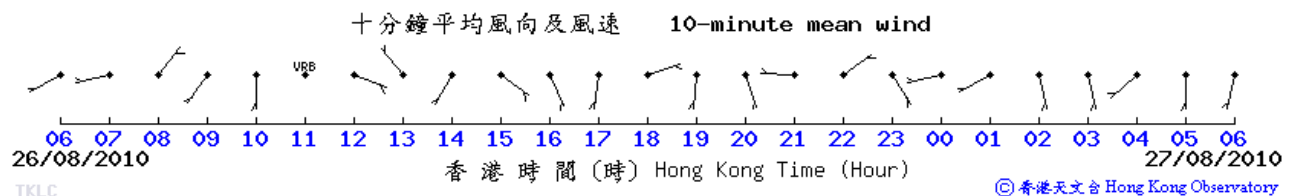
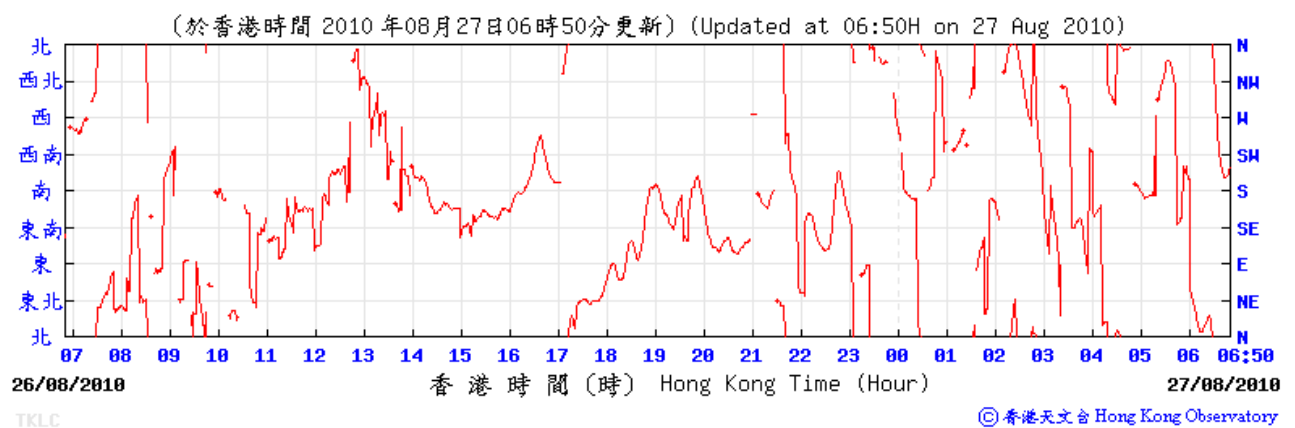
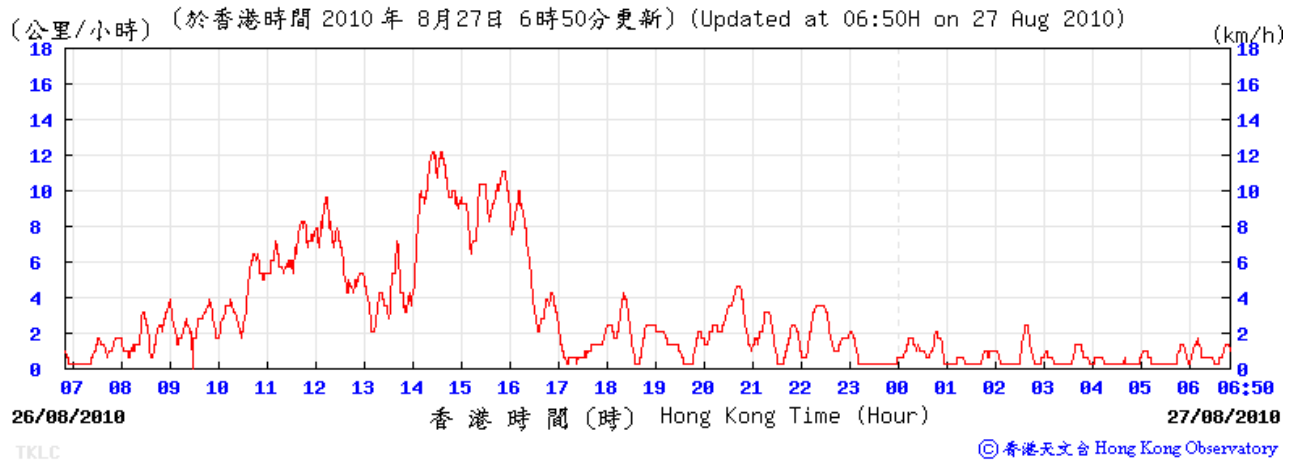
Wind Data for Ta Kwu Ling

19 Aug 2010



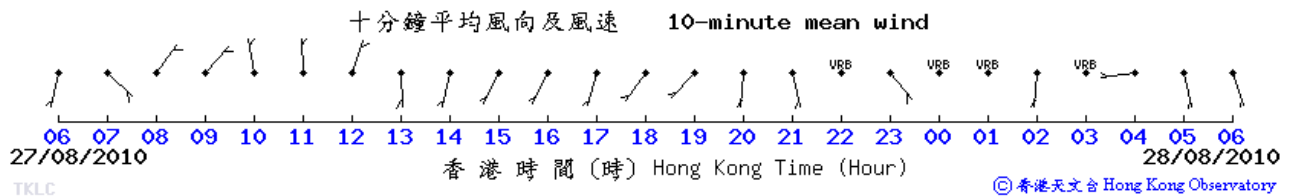
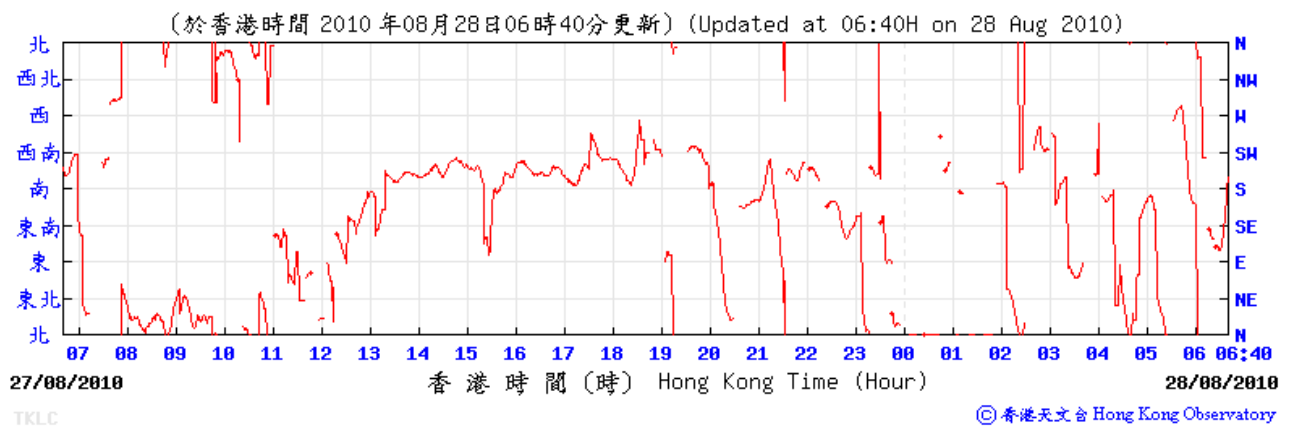
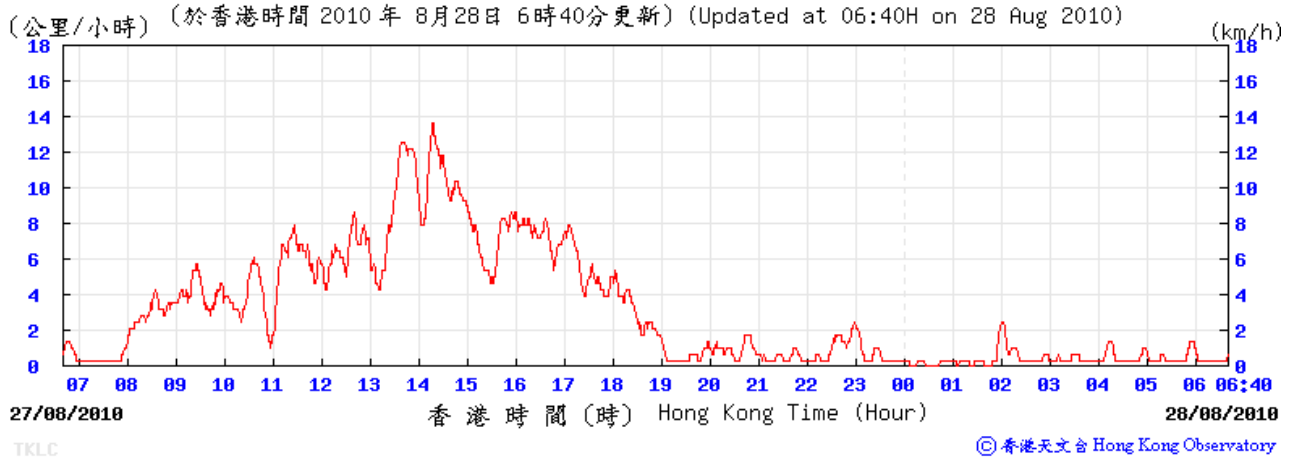
Wind Data for Ta Kwu Ling

27 Aug 2010



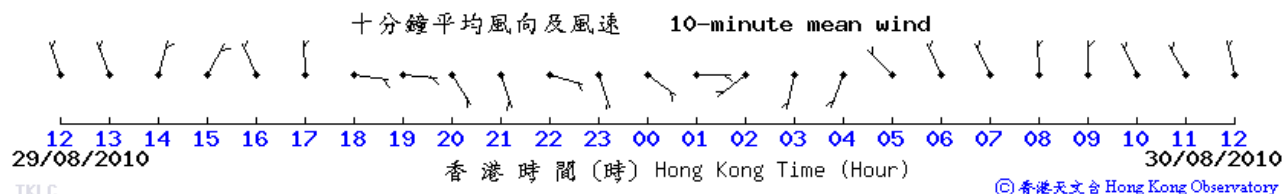
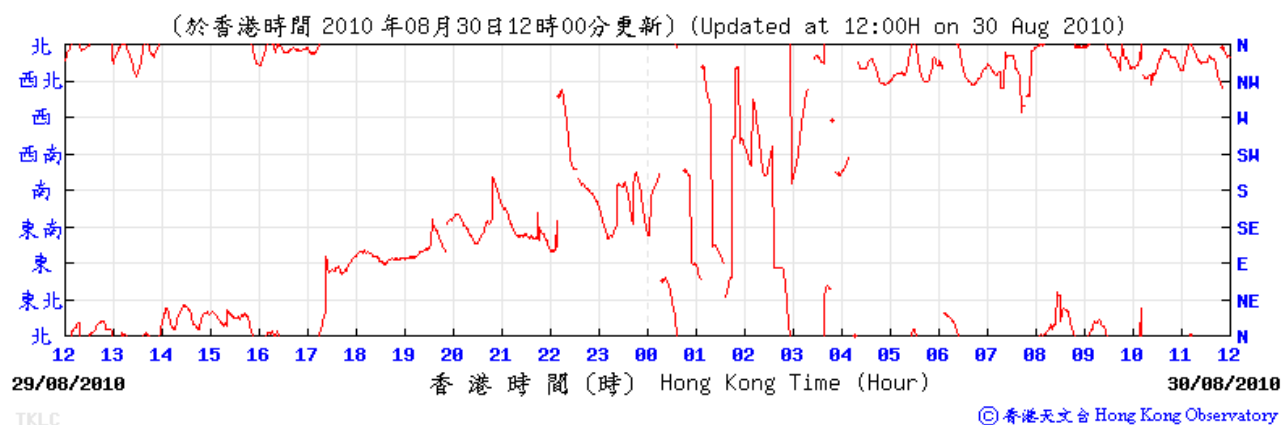
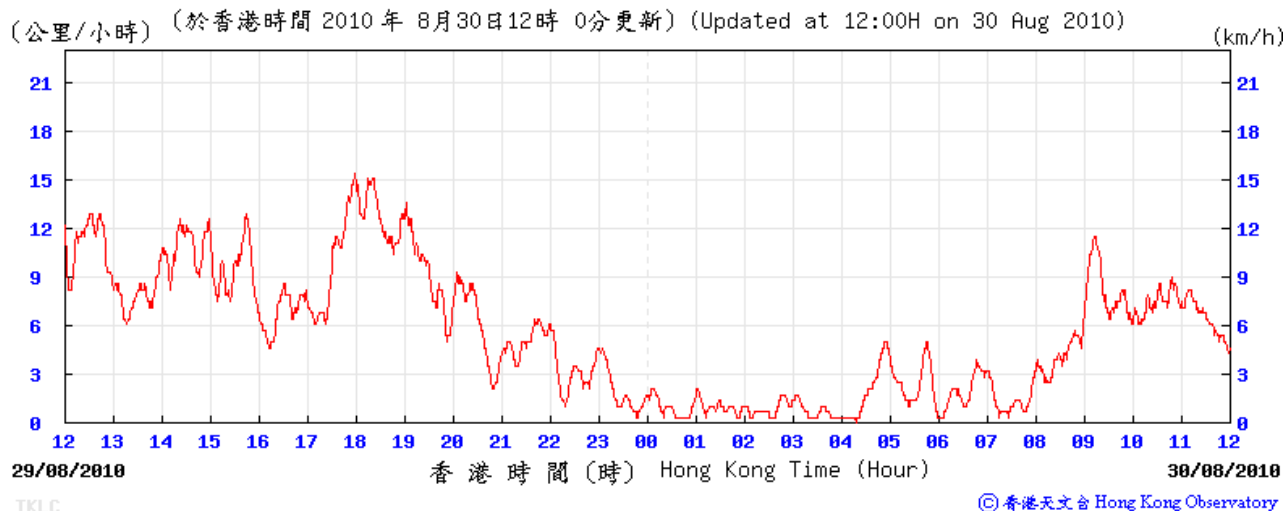
Wind Data for Ta Kwu Ling

28 Aug 2010



Wind Data for Ta Kwu Ling

30 Aug 2010



Wind Data for Ta Kwu Ling

31 Aug 2010

