MOTT MACDONALD

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

Improvement Works for Mai Po, Lok Ma Chau, Sha Tau Kok, Planting Works at Tak Yuet Lau and Demolition Work at Shek Chung Au and Lo Wu to Sha Tau Kok – Monthly EM&A Report for August 2016

September 2016
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Architectural Services Department

Pursuant to Condition 4.5 of Environmental Permit No. EP-347/2009/A, this Monthly EM&A Report for August 2016 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:

Brandon Wong
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date: 5/9/2016

Verified by:

David Yeung
Independent Environmental Checker (IEC)
Ramboll Environ Hong Kong Limited

Date: 8 September 2016

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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 improvement works along the boundary in the Frontier Closed Area (FCA), planting works at Tak Yuet Lau, the demolition works at Shek Chung Au and the minor work order "Demolition of Existing Security Facilities from Lo Wu to Sha Tau Kok" (the subject works), which form part of the "Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road" (the Project).

This Monthly EM&A Report covers the works carried out during the reporting month from 1 to 31 August 2016 and presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures implemented during the same period.

Site Activities

The following major construction activities took place during the reporting month:

Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok:

All improvement works have been completed. ArchSD issued a letter on 8 December 2015 certifying that the improvement works (Works Order No. ASD011777) were substantially completed on 13 November 2015. Minor works for defects rectification were completed in the week ending 12 December 2015.

Landscaping Works at Tak Yuet Lau:

- Maintenance of trees and shrubs.

Demolition Works at Shek Chung Au:

- Nil*.

*Note: The remaining works at Shek Chung Au, namely removal of vehicle inspection shelter, were omitted from the relevant works order (No. ASD 011783) by ER's instruction on 1 March 2016. On the same day, ArchSD certified that Works Order No. ASD011783 was substantially completed on 3 February 2016. A proposal to suspend the EM&A programme at Shek Chung Au was prepared by ET on 7 March 2016, verified by IEC on 9 March 2016 and submitted to EPD on 10 March 2016. The EM&A programme at Shek Chung Au was suspended on 23 June 2016.

Demolition Works from Lo Wu to Sha Tau Kok:

- Demolition of Vehicle Inspection Shelter and Police Post at Sha Ling
- Reinstate the surface works areas at Ping Che.
- Remove existing boundary fences and associated facilities in 2 sections of road connecting between 2 ends of New Patrol Road and existing Lin Ma Hang Road

Breach of Action and Limit Levels

There was no breach of Action or Limit levels for noise impact monitoring 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:

Air

- Regular maintenance of all plant and equipment;
- Handling of any excavated dusty materials or stockpile of dusty material; and
- Spraying of water prior to any loading, unloading or transfer of dusty materials.

Noise

- Location of noisy equipment and noisy activities relative to the Noise Sensitive Receivers (NSRs);
- Avoiding the operation of unused equipment, and minimising the use of Powered Mechanical Equipment (PME) and parallel use of noisy equipment / machinery; and
- Regular maintenance of all plant and equipment.

Water Quality

- No discharge of silty water into the storm drain and drainage channel within and the vicinity of the site;
- Removal off-site of construction plant causing pollution to water system due to leakage of oil or fuel; and
- Temporary stockpiling of excavated soil in a specially designated area with provision of tarpaulin cover.

Waste

- Control measures at the stockpiling area to prevent the generation of dust and pollution of stormwater channels, fish ponds or river channels;
- Segregation, storage, transportation and disposal of different types of waste; and
- Keeping of records of quantities of wastes generated, recycled and disposal (with locations).

Ecology

- Good site practices for controlling the dust and water quality; and

- Clear definition of works limit to avoid impact on adjacent habitats.

Landscape and Visual

- Retain tree with high amenity or ecology value and contributing most to landscape and amenity of site;
- Precautionary area around trees to be retained equal to half of the tree canopy diameter;
- 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;
- Pruning of the branches of existing trees identified for transplantation and retention;
- Rectification and repair of damaged vegetation following the construction phase to its original condition;
- Careful monitoring of all works affecting the trees identified for retention and transplantation; and
- Enforcement of construction site controls including storage of materials, location and appearance of site accommodation and the careful design of site lighting to prevent light spillage.

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 erection of the PBF and SBF (hereafter referred to as 'The Project') along the northern and southern curbs of the realigned BPR respectively aims 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 Environmental Impact Assessment Ordinance (EIAO, Cap 499). An EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were completed in January 2009 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**, in which Section 3 is further divided into 3 sub-sections: Section 3A, 3B and 3C. The construction of the project will be implemented in two phases – Phase 1 and Phase 2. Phase 1 covers Section 1, 2 and 4; Phase 2 covers Sections 3A and 3C.

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.

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.

In April 2015, ArchSD issued Works Order No. ASD011777 incorporating the improvement works for boundary fence at Mai Po, Lok Ma Chau and Sha Tau Kok for Phase 1, Quotation Contract No. 002/15/PMB203 covering landscape works at Tak Yuet Lau for Phase 2 to Lanon Development Limited (LANON) and Wah On Garden Landscaping Limited (WAH ON) ("The Contractors") respectively.

In August 2015, ArchSD issued Works Order No. ASD 011783 for the Demolition Works of Vehicle Inspection Shelter and Shek Chung Au Check Post at Sha Tau Kok to LANON.

In April 2016, ArchSD issued Works Order No. ASD011794 incorporating the demolition works of existing security facilities from Lo Wu to Sha Tau Kok to LANON. The commencement date of this Works Order is on 1 June 2016. The demolition works at Lin Ma Hang Road commenced on 20 July 2016.

MMHK and Ramboll Environ Hong Kong Limited (Ramboll Environ) have been commissioned as the ET and IEC respectively to undertake the Environmental Monitoring and Audit (EM&A) programme as described in the approved EM&A Manual of the Project.

This monthly EM&A report summarises the environmental monitoring and audit works, list of activities and mitigation measures implemented for the aforementioned Works Orders (referred to hereafter as the "subject works") during the period of 1 to 31 August 2016 inclusive ('reporting month').

The scope of works for improvement works for boundary fence at Mai Po, Lok Ma Chau and Sha Tau Kok consists of:

Mai Po Section:

- Replacement of hinges at gate no. 102C, 102B, 102A, 101K, 101J, 101I, 101H, 99E, 99A, 98 (Total 10 nos.)
- Installation of additional CCTV information plates at Gate no. 99D, 99G, 100A, 100B, 100E, 100G, 101B, 101C, 101D, 101E, 101G (Total 11 nos.)
- Removal of existing vegetation and top soil and provision 75mm thick concrete slab on verge area between fence kerb and road kerb along SBF
- Modification of gate no. 101K including installation of additional horizontal support and 6 nos. additional heavy duty hydraulic wheels
- Removal of existing vegetation and top soil an construction concrete pavement at gate no. 100D and 100H
- Installation of EPDM gasket for 150X150 opening at the various gates
- Trimming down of existing pavement outside Pak Hok Chau Checkpoint and installation anti-slip tiles with same FFL with existing

Lok Ma Chau Section:

- Replacement installed information plate at gate no. 78, 78B, 81A, 89A, 91A, 96A, 97 (Total 7 Nos.)
- Installation additional information plate for gate no. 91A and 91B
- Installation of 8 nos. of "No climbing" warning signs on the railing at DSD Maintenance Road Behind Ng Tung River
- Construction of 4 nos. of "Fish Convex Mirror" and the associated installation works

Sha Tau Kok Section:

- Installation of 2 nos. anti-mosquito lantern for booths of vehicular inspection shelter and 2 nos. anti-mosquito lantern for gate 1 checkpoint
- Installation of anti-slip tiles at vehicular inspection shelters
- Construction of ramp, handrail and stainless steel wire mesh guard at gate 1 checkpoint

- Installation of CCTV plates at gate M/P4-2, gate M/P4-7, gate besides waterfront, fence near CCTV post 26B in VHA, fence near CCTV post 20B in VHA, gate 6 at Shan Tsui Village and gate 7 at Shan Tsui Village
- Construction of additional lamp poles (Flood light) to replace the existing lamp
- Installation of additional information plates on pedestrian gate no. M/P4-7 and M/P4-2 at Sha Tau Kok
- Provision of FCA road marking at Sha Tau Kok

The scope of works for landscaping works at Tak Yuet Lau consists of:

- Site boundary setting-out
- Site clearance
- Import of soil mix
- Hydroseeding
- Planting of trees
- Staking support the new planted tree
- Planting of shrubs
- Mulching
- Dress up the site

The scope of works for Demolition Works of Vehicle Inspection Shelter and Shek Chung Au Check Post at Sha Tau Kok consists of:

- Removal of Existing C&ED and HKPF Check Post
- Removal of Vehicle Inspection Shelter

The scope of works for Demolition of Existing Security Facilities from Lo Wu to Sha Tau Kok consists of:

- To remove existing Vehicle Inspection Shelter and Police Post at Sha Ling
- To remove existing Vehicle Inspection Shelter and Police Post at Ping Che
- To remove existing boundary fences and associated facilities in 2 sections of road connecting between 2 ends of New Patrol Road and existing Lin Ma Hang Road.
- To remove Post 16, existing 24 nos. of FCA signage and associated supporting
- To replace 3 nos. of signage with a new plate
- To reinstate the surface works areas
- To divert switch room no. 4 and the associated cable ducts and power cables and provide new pillar boxes and drawpits to suit new cable ducts

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:

Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok:

Note: All improvement works have been completed. ArchSD issued a letter on 8 December 2015 certifying that the improvement works (Works Order No. ASD011777) were substantially completed on 13 November 2015. Minor works for defects rectification were completed in the week ending 12 December 2015.

Landscaping Work at Tak Yuet Lau:

- Maintenance of trees and shrubs.

Demolition Works at Shek Chung Au:

- Nil *

*Note: The remaining works at Shek Chung Au, namely removal of vehicle inspection shelter, were omitted from the relevant works order (No. ASD 011783) by ER's instruction on 1 March 2016. On the same day, ArchSD certified that Works Order No. ASD011783 was substantially completed on 3 February 2016. A proposal to suspend the EM&A programme at Shek Chung Au was prepared by ET on 7 March 2016, verified by IEC on 9 March 2016 and submitted to EPD on 10 March 2016. The EM&A programme at Shek Chung Au was suspended on 23 June 2016.

Demolition Works from Lo Wu to Sha Tau Kok:

- Remove existing Vehicle Inspection Shelter and Police Post at Sha Ling.
- Reinstate the surface works areas at Ping Che.
- Remove existing boundary fences and associated facilities in 2 sections of road connecting between 2 ends of New Patrol Road and existing Lin Ma Hang Road.

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 ten locations as noise monitoring stations during the construction phase for the Project Sections. However, noise levels at only three monitoring stations (as shown in **Table 2.1**) were included in current EM&A programme. 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	VH03#, STK-ICHK* WL01(R)	Weekly	During Construction
Waste management	On-site Waste Audit On-site Waste Inspection	Active Works Sites	Weekly	During Construction
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

#Note: The improvement works (Works Order No. ASD011777) were substantially completed on 13 November 2015 certified by ArchSD. Termination of noise impact monitoring at VH03 and site inspection for improvement work at Section 1, 2 & 4 was proposed by ET and agreed by IEC on 30 December 2015.

*Note: For details of monitoring location STK-ICHK, please refer Section 3.

2.2 Implementation of Environmental Mitigation Measures

The Contractor is required to implement mitigation measures listed in the latest valid EP and FEP(s) (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 noise 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	Parameters	Frequency	Duration
VH03	L_{eq}, L_{90} & L_{10}	Once every week	30 min
STK-ICHK	L_{eq}, L_{90} & L_{10}	Once every week	30 min
WL01(R)	L_{eq}, L_{90} & L_{10}	Once every week	30 min

3.2 Monitoring Location

Originally, ten construction noise monitoring stations were proposed in the EM&A Manual for Section 1, 2, 3 and 4, namely: VH01 (Village House at Mai Po), VH03 (Village House at Mai Po), MTL01(Village House at Ma Tso Lung), LW02 (House No. 39 at Lo Wu), MW02 (House No. 11, Muk Wu Chuen Yiu), CY01 (House No. 19, Chuk Yuen), WL01 (Village House at Wang Lek), WL03 (Villiage House at Wang Lek) , STK03 (Block 1, Sha Tau Kok Estate) and STK05 (Village House at Sha Tau Kok).

For Section 1, 2 and 4, as the major construction of the fencing has been conducted in earlier stages of Phase 1, the improvement works as mentioned in Section 1.1 are minor works unlikely to produce significant impact on the NSRs, except for the construction of concrete pavement in Section 1. With regard to the improvement works, only VH03 is proposed as a noise impact monitoring station.

STK03 was mainly selected for the construction works related to the SBF and the new checkpoint and kiosk/guard house 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 and impact noise monitoring was conducted at STK-DBD from 16 to 29 March 2010 and from June 2010 to January 2012 respectively.

Baseline monitoring at STK05 was conducted from 7 to 20 September 2012. No impact noise monitoring at STK05 has been carried out at this stage.

The baseline noise monitoring location for the demolition work of existing checkpoint at Shek Chung Au was recently reviewed. An updated baseline monitoring report was submitted to EPD

in early November 2015 proposing an alternative noise monitoring station (STK-ICHK) which is located closer to the demolition work area. The noise monitoring station is relocated from STK05 to STK-ICHK for monitoring the noise impact from the demolition work.

The demolition work at Shek Chung Au commenced on 14 November 2015 and the weekly impact noise monitoring at STK-ICHK started on 16 November 2015.

For demolition works from Lo Wu to Sha Tau Kok, which are within Section 3 of the Project, only WL01 is required for noise monitoring for the demolition works of existing fencing at Lin Ma Hang according to the approved SBF EIA (Ref. No.: AEIAR-136/2009).

According to the baseline monitoring report conducted by ETS-Testconsult Limited in 2012, the baseline monitoring at WL01 was blocked by others for other use and access to WL01 was rejected. An alternative noise monitoring station WL01(R), which was located close to WL01 and relevant construction site, was agreed by IEC of the Project. Baseline monitoring at WL01(R) was conducted from 22 September 2012 to 5 October 2012. The monitoring location WL01(R) was chosen as the monitoring location for demolition works of existing fencing at Lin Ma Hang Road.

As a result, three noise impact monitoring stations are included in the current EM&A programme for the subject works during the reporting period. The locations of the agreed noise monitoring stations are listed in **Table 3.2** and shown in **Figure 2.1**, **Figure 2.2** and **Figure 2.3**.

Table 3.2: Noise Impact Monitoring Location

Monitoring Station	Description of Location	Type of measurement
VH03#	Village House at Mai Po	Façade
STK-ICHK*	International College Hong Kong at Shek Chung Au	Façade
WL01(R)**	Village House at Wang Lek	Free Field^

#Note: The improvement works (Works Order No. ASD011777) were substantially completed on 13 November 2015 certified by ArchSD. Termination of noise impact monitoring at VH03 and site inspection for improvement work at Section 1, 2 & 4 was proposed by ET and agreed by IEC on 30 December 2015.

*Note: The remaining works at Shek Chung Au, namely removal of vehicle inspection shelter, were omitted from the relevant works order (No. ASD 011783) by ER's instruction on 1 March 2016. On the same day, ArchSD certified that Works Order No. ASD011783 was substantially completed on 3 February 2016. A proposal to suspend the EM&A programme at Shek Chung Au was prepared by ET on 7 March 2016, verified by IEC on 9 March 2016 and submitted to EPD on 10 March 2016. The EM&A programme at Shek Chung Au was suspended on 23 June 2016.

^Note: For noise monitoring station WL01(R), a 3 dB(A) correction will be adopted to the result of the free-field noise measurement.

**Note: The demolition works at Lin Ma Hang Road commenced on 20 July 2016 and the noise monitoring at WL01(R) commenced on 22 July 2016.

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 typical noise monitoring equipment used.

Table 3.3: Noise Monitoring Equipment

Equipment	Model
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
Integrating Sound Level Meter	Every year
Acoustic Calibrator	Every year

The noise monitoring equipment calibration certificates are presented **Appendix G** in this report.

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 Hong Kong Laboratory Accreditation Scheme (HOKLAS) laboratory to check and calibrate at yearly intervals.

3.6 Results of Impact Monitoring

Noise impact monitoring was conducted at WL01(R) on 5, 12, 19 and 23 August 2016 during the reporting month.

The measured construction noise level, in terms of L_{eq} (30-min), during the reporting month are summarised in **Table 3.5**.

Table 3.5: Result of Noise Impact Monitoring

Monitoring Station	Measured L_{eq} (30-mins) Range, dB(A)	Limit Level for L_{eq}, dB(A)
WL01(R)	52-59	75

No exceedances of Action or Limit Level for construction noise were recorded at WL01(R) during the reporting month.

The graphical presentations of the measured construction noise level of the reporting month of noise impact monitoring are presented in **Appendix H**. The general weather conditions and graphical presentation are presented in **Appendix K**.

3.7 Exceedance Investigation and Findings

During August 2016, no exceedances of Action or Limit Level for construction noise were recorded.

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 the subject works.

In the reporting month, one monthly site inspection was carried out jointly by the ER, Contractor, ET and IEC on 5 August 2016. Weekly site inspections were carried out by ET at Tak Yuet Lau (on 5, 12, 19, and 26 August 2016), at Ping Che (on 5, 12, 19, and 26 August 2016), and at Ling Ma Hang (on 5, 12, 19 and 26 August 2016) and at Sha Ling (on 12, 19 and 26 August 2016). The EM&A schedule is presented in **Appendix F**.

Major findings provided by ET during the 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.

- Note: The EM&A programme at Shek Chung Au was suspended on 23 June 2016.

Table 4.1: Summary of Environmental Site Inspections

Date of Inspection	Major Observations	Status
5 August 2016	**Tak Yuet Lau:** No major observations.	-
	Demolition works at Ping Che: No major observations.	-
	Demolition works at Lin Ma Hang: No major observations.	-
12 August 2016	**Tak Yuet Lau:** No major observations.	-
	Demolition works at Ping Che: No major observations.	-
	Demolition works at Sha Ling: Temporary C&D material storage on site was observed. The Contractor was reminded to clear the C&D materials on site.	Temporary material storage on site had been cleared. (Closed on 19 August 2016)
	Demolition works at Lin Ma Hang: No major observations.	-
19 August 2016	**Tak Yuet Lau:** Tree (SS-T019) was collapsed.	Compensation will be conducted in the next planting season. (Closed on 26 August 2016)
	Demolition works at Ping Che: No major observations.	-

Date of Inspection	Major Observations	Status
	Demolition works at Sha Ling: No major observations.	-
	Demolition works at Lin Ma Hang: No major observations.	-
26 August 2016	**Tak Yuet Lau:** Tree (SS-T046) was collapsed.	Tree (SS-T046 was collapsed. Compensation had been conducted. (Closed on 2 September 2016)
	Demolition works at Ping Che: No major observations.	-
	Demolition works at Sha Ling: No major observations.	-
	Demolition works at Lin Ma Hang: No major observations.	-

4.2 Environmental Meetings

No environmental meeting was held during the reporting month.

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**.

Table 4.2: Status of Environmental Permits and Licences

Statutory Reference	Description	Permit / Reference No.	Status
EIAO	Environmental Permit	EP-347/2009/A	Valid
WDO	Bill Account Disposal	7021313	Valid

Legend: EIAO – Environmental Impact Assessment Ordinance
WDO – Waste Disposal Ordinance

Note: The Bill Account Disposal for Contract No. TCC508 was registered by the Lanon Development Limited.

4.4 Advice on the Solid and Liquid Waste Management Status

The construction and demolition (C&D) material and general refuse generated by the subject works 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 4.3**):

Table 4.3: Implementation Schedule of Mitigation Measures

Parameter	Table	Parameter	Table
Air Quality	Table E.1	Waste Management	Table E.4
Noise	Table E.2	Ecology	Table E.5
Water Quality	Table E.3	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 Level for construction noise impact monitoring detected during the reporting month.

5.2 Environmental Complaints

No environmental complaints were received or made against the subject works 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 the subject works of the Project during the reporting month.

5.4 Review of Reasons for and Implication of Non-compliance, Complaints, Summons and Prosecutions

Not applicable for this reporting month.

5.5 Follow-up Actions Taken

Follow-up actions have been taken during the reporting month. Actions taken mainly include clearance of C&D materials storage on site. For details, please refer to **Section 4.1**.

6. Future Key Issues

6.1 Construction Programme for the Next Reporting Month

The major construction works forecast for the subject works in September 2016 will include:

Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok

Mai Po Section:

- Nil (work in this section completed)

Lok Ma Chau Section:

- Nil (work in this section completed)

Sha Tau Kok Section:

- Nil (work in this section completed)

Landscaping Works at Tak Yuet Lau

- Maintenance of trees and shrubs

Demolition Works at Shek Chung Au

- Nil*

*Note: The remaining works at Shek Chung Au, namely removal of vehicle inspection shelter, were omitted from the relevant works order (No. ASD 011783) by ER's instruction on 1 March 2016. On the same day, ArchSD certified that Works Order No. ASD011783 was substantially completed on 3 February 2016. A proposal to suspend the EM&A programme at Shek Chung Au was prepared by ET on 7 March 2016, verified by IEC on 9 March 2016 and submitted to EPD on 10 March 2016. The EM&A programme at Shek Chung Au was suspended on 23 June 2016.

Demolition Works from Lo Wu to Sha Tau Kok:

- Reinstate the surface works areas at Ping Che.
- Reinstate the surface works areas at Lin Ma Hang Road.
- Remove existing Vehicle Inspection Shelter and Police Post at Sha Ling.

6.2 Key Issues for the Next Reporting Month

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

Air Quality

- Any excavated dusty materials or stockpile of dusty material should be covered by impervious sheeting or sprayed with water.

Noise Impact

- Noisy equipment and noisy activities should be located as far away from Noise Sensitive Receivers;

- Avoiding the operation of unused equipment, and minimising the use of Powered Mechanical Equipment (PME) and parallel use of noisy equipment/ machinery; and
- Regular maintenance of all plant and equipment.

Water Quality

- No discharge of silty water into storm drain and drainage channel within the vicinity of the site.

Waste

- Keeping of records of quantities of wastes generated, recycled and disposal (with locations); and
- Segregation, storage, transportation and disposal of different types of waste.

Ecology

- Good site practices for controlling the dust and water quality; and
- Clear definition of works limit to avoid impact on adjacent habitats.

Landscape and Visual

- Retain tree with high amenity or ecology value and contributing most to landscape and amenity of site.

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.

6.3 Monitoring Schedule for the Next Reporting Month

The tentative schedule for environmental site inspection in September 2016 is provided in **Appendix F**. Actual dates may change due to unforeseen events such as inclement weather.

7. Conclusions and Recommendations

7.1 Conclusions

The construction phase EM&A programme for the subject works was performed from 1 to 31 August 2016 during which landscaping maintenance works at Tak Yuet Lau, and demolition works from Lo Wu to Sha Tau Kok were conducted. All monitoring and audit results and findings in the reporting month were checked and reviewed.

Construction noise monitoring was carried out during the reporting month at Lin Ma Hang. No exceedance of the noise Limit Level was recorded. Furthermore, no noise-related complaint was received or followed-up by ET during the reporting month, therefore no Action Level exceedance was recorded.

Environmental site inspections were carried out at Tak Yuet Lau (5, 12, 19 and 26 August 2016), Ping Che (5, 12, 19 and 26 August 2016) and Lin Ma Hang (5, 12, 19 and 26 August 2016 only) and at Sha Ling (on 12, 19 and 26 August 2016) sites 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 EM&A Manual and all relevant legislation and regulations.

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

7.2 Recommendations

Improvements in the implementation of mitigation measures with respect to waste management was recommended based on the deficiencies identified during environmental site audits in the reporting month. No further recommendations were made at this stage based on the monitoring and audit findings.

Appendices

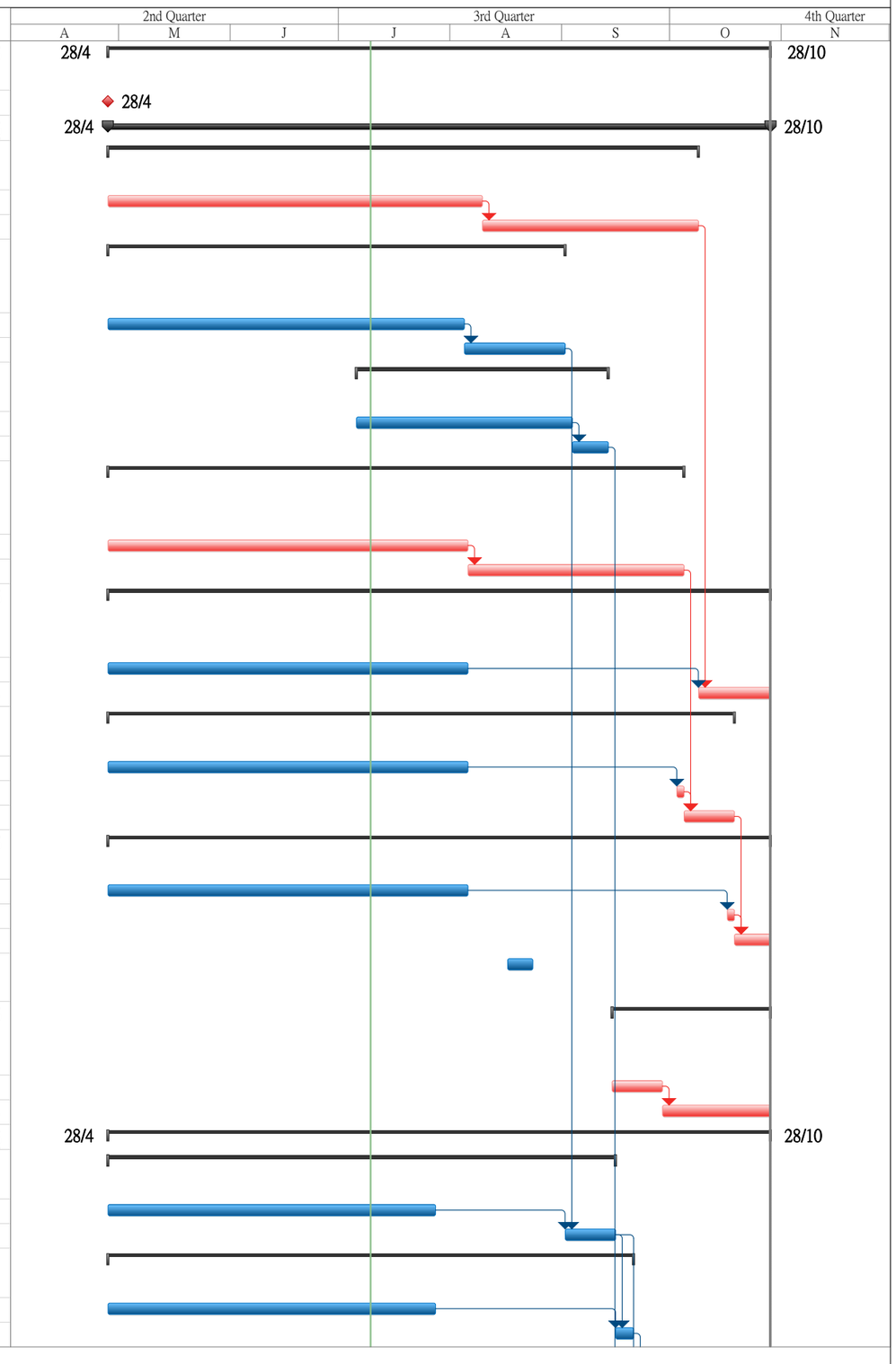
A. Construction Works Programme

Term Contract No. : TCC508
Project No. : 15GB
Works Order No. ASD 011777
Title: Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok

Project Programme

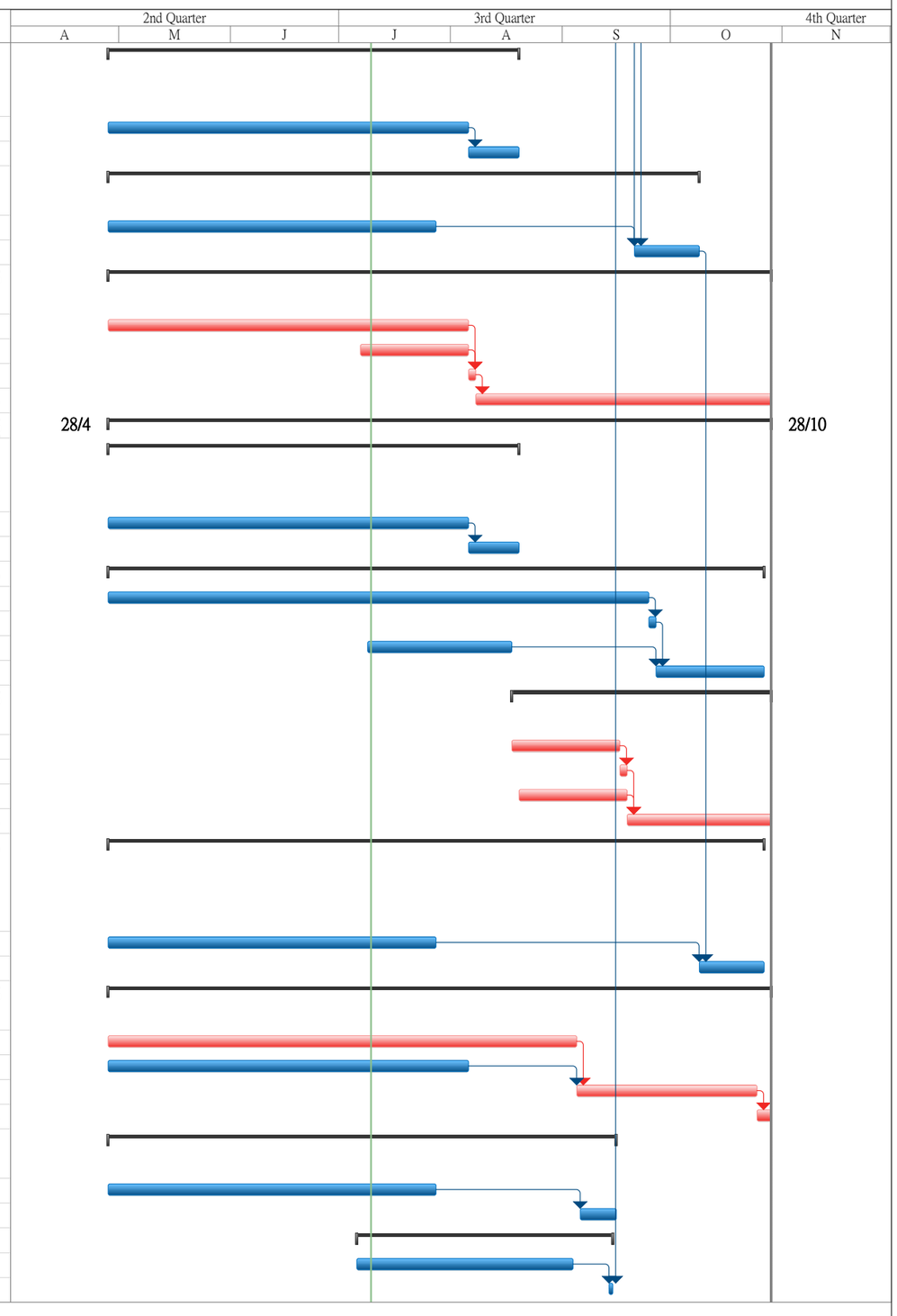
Rev. 1a(draft)

ID	Task Name	Duration	Start	Finish
1	**Works Order Period (Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok)**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
2	**Works Order Commcement Date**	**0 days**	**Tue 28/4/15**	**Tue 28/4/15**
3	**Mai Po Section**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
4	**1.) Replacement of Hinge at Gate no. 102C, 102B, 102A, 101K, 101J, 101I, 101H, 99E, 99A, 98 (Total 10 Nos.)**	**164 days**	**Tue 28/4/15**	**Thu 8/10/15**
5	Material Procuement and Fabrication	104 days	Tue 28/4/15	Sun 9/8/15
6	Replacement of Hinge	60 days	Mon 10/8/15	Thu 8/10/15
7	**2.) Installation Additional CCTV Information Plates at Gate no. 99D, 99G, 100A, 100B, 100E, 100G, 101B, 101C, 101D, 101E, 101G (Toal 11 Nos.)**	**127 days**	**Tue 28/4/15**	**Tue 1/9/15**
8	Material Submission, Procuement and Fabrication	99 days	Tue 28/4/15	Tue 4/8/15
9	Installation of CCTV Information Plates	28 days	Wed 5/8/15	Tue 1/9/15
10	**3.) Provision of Speed Limit Road Marking at Various Locations as Specified in the Drawings (Details to be Issued)**	**70 days**	**Mon 6/7/15**	**Sun 13/9/15**
11	Material Submission	60 days	Mon 6/7/15	Thu 3/9/15
12	Provision FCA Road Marking	10 days	Fri 4/9/15	Sun 13/9/15
13	**4.) Removal Existing Vegetation and Top Soil and Provision 75mm Thick Concrete Slab on Verge Area between Fence Kerb and Road Kerb along SBF**	**160 days**	**Tue 28/4/15**	**Sun 4/10/15**
14	Application of Excavation Permit and Lead Time Waiver*	100 days	Tue 28/4/15	Wed 5/8/15
15	Construction of Concrete Slab on Verge Area	60 days	Thu 6/8/15	Sun 4/10/15
16	**5.) Modification Gate no. 101K including Installation of Additional Horizontal Support and 6 nos. Additional Heavy Duty Hydraulic wheels**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
17	Material Submission, Procuement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15
18	Modification of Gate	20 days	Fri 9/10/15	Wed 28/10/15
19	**6.) Removal Existing Vegetation and Top Soil and Construction Concrete Pavement at Gate no. 100D and 100H**	**174 days**	**Tue 28/4/15**	**Sun 18/10/15**
20	Application of Excavation Permit and Lead Time Waiver	100 days	Tue 28/4/15	Wed 5/8/15
21	Detection Survey of Underground Utilities	2 days	Sat 3/10/15	Sun 4/10/15
22	Construction of Concrete Pavement	14 days	Mon 5/10/15	Sun 18/10/15
23	**7.) Removal Existing Vegetation and Top Soil and Construction Concrete Pavement Run-in at Gate no. 100D and 100H**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
24	Application of Excavation Permit and Lead Time Waiver	100 days	Tue 28/4/15	Wed 5/8/15
25	Detection Survey of Underground Utilities	2 days	Sat 17/10/15	Sun 18/10/15
26	Construction of Concrete Pavement Run-in	10 days	Mon 19/10/15	Wed 28/10/15
27	8.) Installation of EPDM Gasket for 150x150 Opening at the Various Gates as per Sketch no. SK009	7 days	Mon 17/8/15	Sun 23/8/15
28	**9.) Trimming Down Existing Pavement outside Pak Hok Chau Checkpoint and Installation Anti-slip Tiles with same FFL with Existing**	**44 days**	**Tue 15/9/15**	**Wed 28/10/15**
29	Material Submission and Procuement	14 days	Tue 15/9/15	Mon 28/9/15
30	Trimming Down Existing Pavement and Installation of Anti-slip Tiles	30 days	Tue 29/9/15	Wed 28/10/15
31	**Lok Ma Chau Section**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
32	**10.) Replacement Installed Information Plate at Gate no. 78, 78B, 81A, 89A, 91A, 96A, 97 as per Sketch no. SK046 (Total 7 Nos.)**	**141 days**	**Tue 28/4/15**	**Tue 15/9/15**
33	Material Submission, Procuement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15
34	Installation of Information Plates	14 days	Wed 2/9/15	Tue 15/9/15
35	**11.) Installation Additional Information Plate for Gate no. 91A and 91B as per Sketch no. SK047-048**	**146 days**	**Tue 28/4/15**	**Sun 20/9/15**
36	Material Submission, Procuement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15
37	Installation of Information Plates	5 days	Wed 16/9/15	Sun 20/9/15



10-Jul 2015

ID	Task Name	Duration	Start	Finish
38	**12.) Installation 1 nos. Proposed Retractable Awning of approx. Size of 5m in width and 3m in Projection for Existing Canopy at Entrance of Tak Yuet Lau Police Post**	**114 days**	**Tue 28/4/15**	**Wed 19/8/15**
39	Material Submission, Procuement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15
40	Installation of Proposed Retractable Awning	14 days	Thu 6/8/15	Wed 19/8/15
41	**13.) Installation 8 nos. of "No Climbing" Warning Signs on the Railing at DSD Maintenance Road Behind Ng Tung River**	**164 days**	**Tue 28/4/15**	**Thu 8/10/15**
42	Material Submission, Procuement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15
43	Installation of Warning Signs	18 days	Mon 21/9/15	Thu 8/10/15
44	**14.) Construction 4 nos. of "Fish Convex Mirror" and the Associated Installation Works as per Sketch nos. SK052-054**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
45	Application of Excavation Permit	100 days	Tue 28/4/15	Wed 5/8/15
46	Material Submission, Procuement and Fabrication	30 days	Tue 7/7/15	Wed 5/8/15
47	Detection Survey of Underground Utilities	2 days	Thu 6/8/15	Fri 7/8/15
48	Installation of "Fish Convex Mirror" and Associated Installation Works	82 days	Sat 8/8/15	Wed 28/10/15
49	**Sha Tau Kok Section**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
50	**15.) Installation of 2 nos. Anti-mosquito Lantern for Booths of Vehicular Inspection Shelter and 2 nos. Anti-mosquito Lantern for Gate 1 Checkpoint G/F**	**114 days**	**Tue 28/4/15**	**Wed 19/8/15**
51	Material Submission, Procuement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15
52	Installation of Anti-mosquito Lantern	14 days	Thu 6/8/15	Wed 19/8/15
53	**16.) Installation of Anti-slip Tiles at Vehicular Inspection Shelters**	**182 days**	**Tue 28/4/15**	**Mon 26/10/15**
54	Application of Excavation Permit	150 days	Tue 28/4/15	Thu 24/9/15
55	Detection Survey of Underground Utilities	2 days	Fri 25/9/15	Sat 26/9/15
56	Material Submission, Procuement and Fabrication	40 days	Thu 9/7/15	Mon 17/8/15
57	Installation of Anti-slip Tiles	30 days	Sun 27/9/15	Mon 26/10/15
58	**17.) Construction Ramp, Handrail and Stainless Steel Wire Mesh Guard at Gate 1 Checkpoint**	**72 days**	**Tue 18/8/15**	**Wed 28/10/15**
59	Consent for Construction at Gate 1 Check Point from HKPF & C&ED	30 days	Tue 18/8/15	Wed 16/9/15
60	Detection Survey of Underground Utilities	2 days	Thu 17/9/15	Fri 18/9/15
61	Material Submission, Procuement and Fabrication	30 days	Thu 20/8/15	Fri 18/9/15
62	Construction Ramp, Handrail and Stainless Steel Wire Mesh Guard	40 days	Sat 19/9/15	Wed 28/10/15
63	**18.) Installation CCTV Plates at Gate M/P4-2, Gate M/P4-7, Gate besides Waterfront, Fence near CCTV Post 26B in VHA, Fence near CCTV Post 20B in VHA, Gate 6 at Shan Tsui Village and Gate 7 at Shan Tsui Village**	**182 days**	**Tue 28/4/15**	**Mon 26/10/15**
64	Material Submission, Procuement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15
65	Installation of CCTV Plates	18 days	Fri 9/10/15	Mon 26/10/15
66	**19.) Construction Additional Lamp Poles (Flood Light) to Replace the Existing Lamp as per Sketch no. SK017, 018A and 018B**	**184 days**	**Tue 28/4/15**	**Wed 28/10/15**
67	Application of Excavation Permit	130 days	Tue 28/4/15	Fri 4/9/15
68	Material Submission, Procuement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15
69	Construction Additional Lamp Poles	50 days	Sat 5/9/15	Sat 24/10/15
70	Testing & Commissioning	4 days	Sun 25/10/15	Wed 28/10/15
71	**20.) Installation Additional Information Plates on Pedestrian Gate no. M/P4-7 and M/P4-2 at Sha Tau Kok**	**141 days**	**Tue 28/4/15**	**Tue 15/9/15**
72	Material Submission, Procuement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15
73	Installation of Information Plates	10 days	Sun 6/9/15	Tue 15/9/15
74	**21.) Provision FCA Road Marking at Sha Tau Kok**	**71 days**	**Mon 6/7/15**	**Mon 14/9/15**
75	Material Submission	60 days	Mon 6/7/15	Thu 3/9/15
76	Provision FCA Road Marking	1 day	Mon 14/9/15	Mon 14/9/15



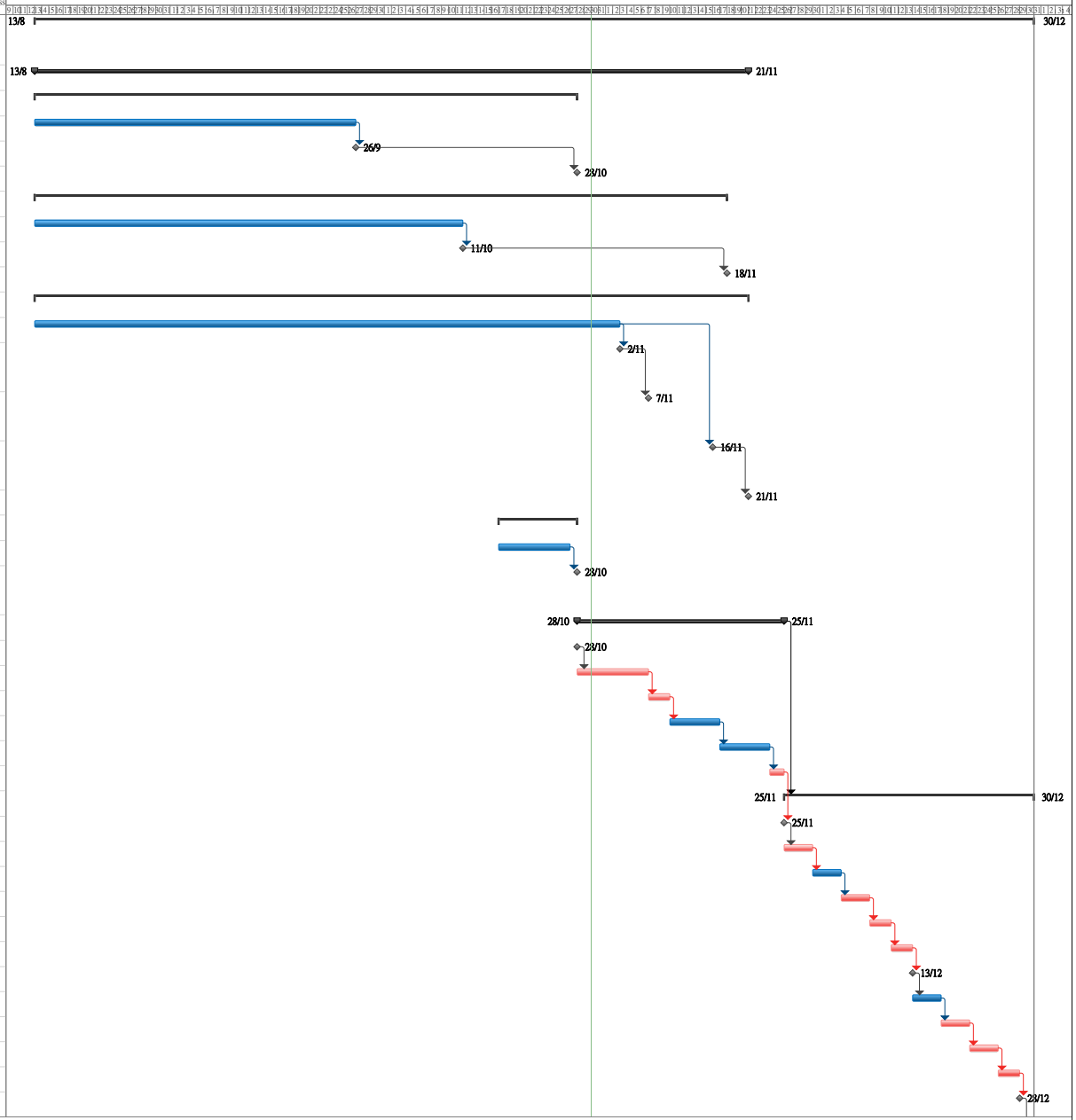
Contract NO. 002/15/PMB203
Landscaping Works at Tak Yuet Lau for Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road (Phase 2) (Programme No. 12GB)

Working Programme

	31/8-5/9	7/9-12/9	14/9-19/9	21/9-26/9	28/9-30/9
YEAR 2015					
DESCRIPTION					
Import of Soil Mix					
Setting Out					
Hydroseeding					
Planting of trees					
Staking support the new planted tree					
Start Tree Monitoring					
Planting of shrubs					
Mulching					
Dress up the site					
Completion of Maintenance period	24 Months after Issuance of Completion Certificate				

Note: This tentative programme was prepared prior to commencement of works. Actual works were subject to delays such as bad weather and completed in October 2015.

ID	Task Name	Duration	Start	Finish	Predecess.
1	**Works Order Period (Demolition Works of Vehicle Inspection Shelter and Shek Chung Au Check Post at Sha Tau Kok)**	**140 days**	**Thu 13/8/15**	**Wed 30/12/15**	
2	**Preparation Works**	**100 days**	**Thu 13/8/15**	**Sat 21/11/15**	
3	**Temporary Traffic Arrangement (TTA)**	**76 days**	**Thu 13/8/15**	**Wed 28/10/15**	
4	Preparation of TTA Submission	45 days	Thu 13/8/15	Sat 26/9/15	
5	Submission of TTA to TD & RMO	0 days	Sat 26/9/15	Sat 26/9/15	4
6	TTA Approval and Application of Road Work Advice	0 days	Wed 28/10/15	Wed 28/10/15	5
7	**Tree Pruning Proposal**	**97 days**	**Thu 13/8/15**	**Wed 18/11/15**	
8	Preparation of Tree Pruning Proposal	60 days	Thu 13/8/15	Sun 11/10/15	
9	Submission of Tree Pruning Proposal	0 days	Sun 11/10/15	Sun 11/10/15	8
10	Approval of Tree Pruning Proposal	0 days	Wed 18/11/15	Wed 18/11/15	9
11	**Demolition Method Statement**	**100 days**	**Thu 13/8/15**	**Sat 21/11/15**	
12	Preparation of Demolition Method Statement	82 days	Thu 13/8/15	Mon 2/11/15	
13	Submission of Demolition Method Statement (C&ED and HKPF Check Post)	0 days	Mon 2/11/15	Mon 2/11/15	12
14	Approval of Demolition Method Statement (C&ED and HKPF Check Post)	0 days	Sat 7/11/15	Sat 7/11/15	13
15	Submission of Demolition Method Statement (Vehicle Inspection Shelter)	0 days	Mon 16/11/15	Mon 16/11/15	12
16	Approval of Demolition Method Statement (Vehicle Inspection Shelter)	0 days	Sat 21/11/15	Sat 21/11/15	15
17	**Underground Utility Survey**	**11 days**	**Sat 17/10/15**	**Wed 28/10/15**	
18	Cable Detection	10 days	Sat 17/10/15	Mon 26/10/15	
19	Submission of Underground Services Detection Equipment and Utilities Survey	0 days	Wed 28/10/15	Wed 28/10/15	18
20	**Removal of Existing C&ED and HKPF Check Post**	**29 days**	**Wed 28/10/15**	**Wed 25/11/15**	
21	Implementation of TTA (Stage 1)	0 days	Wed 28/10/15	Wed 28/10/15	
22	Hoarding / Barriers Erection	10 days	Wed 28/10/15	Fri 6/11/15	21
23	Removal of Building Services Installation, Equipment and Furniture	3 days	Sat 7/11/15	Mon 9/11/15	22
24	Demolition of Canopy and Roof Slabs	7 days	Tue 10/11/15	Mon 16/11/15	23
25	Demolition of Beams, Walls and Columns to Ground Level	7 days	Tue 17/11/15	Mon 23/11/15	24
26	Reinstatement of Pavement to Existing Ground Level	2 days	Tue 24/11/15	Wed 25/11/15	25
27	**Removal of Vehicle Inspection Shelter**	**35 days**	**Wed 25/11/15**	**Wed 30/12/15**	**20**
28	Implementation of TTA (Stage 2)	0 days	Wed 25/11/15	Wed 25/11/15	26
29	Tree Pruing	4 days	Thu 26/11/15	Sun 29/11/15	28
30	Removal of Roof Panels and Purlines	4 days	Mon 30/11/15	Thu 3/12/15	29
31	Removal of Roof Beams	4 days	Fri 4/12/15	Mon 7/12/15	30
32	Removal of Columns	3 days	Tue 8/12/15	Thu 10/12/15	31
33	Removal of Footings to Ground Level	3 days	Fri 11/12/15	Sun 13/12/15	32
34	Implementation of TTA (Stage 3)	0 days	Sun 13/12/15	Sun 13/12/15	33
35	Removal of Roof Panels and Purlines	4 days	Mon 14/12/15	Thu 17/12/15	34
36	Removal of Roof Beams	4 days	Fri 18/12/15	Mon 21/12/15	35
37	Removal of Columns	4 days	Tue 22/12/15	Fri 25/12/15	36
38	Removal of Footings to Ground Level	3 days	Sat 26/12/15	Mon 28/12/15	37
39	Implementation of TTA (Stage 4)	0 days	Mon 28/12/15	Mon 28/12/15	38

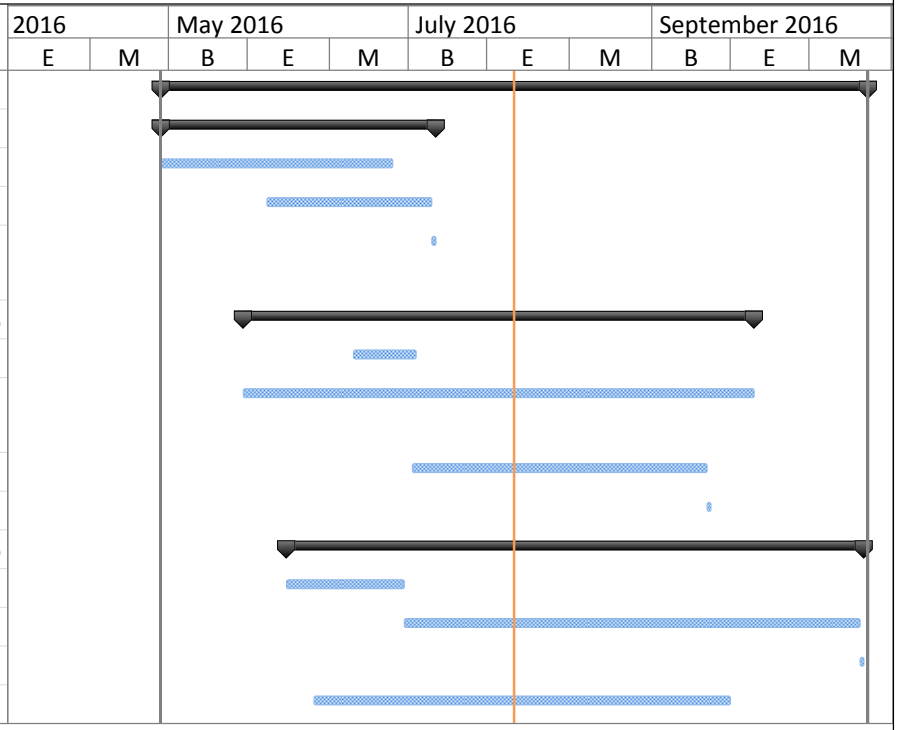


ID	Task Name	Duration	Start	Finish	Predecess.
40	Reinstatement of Pavement to Existing Ground Level and Removal of Traffic Signs and Light and Water Tank behind	2 days	Tue 29/12/15	Wed 30/12/15	39

LANON Development Limited
ASD Contract TCC 508

ASD011794-Demolition of Existing Security Facilities from Lo Wu to Sha Tau Kok

ID	Task Name	Duration	Start	Finish
1	**Works Order Commencement Date**	**180 days**	**Fri 29/04/16**	**Tue 25/10/16**
2	**Ping Che Checkpost**	**70 days**	**Fri 29/04/16**	**Thu 07/07/16**
3	Submission and approval	59 days	Fri 29/04/16	Sun 26/06/16
4	Demolition Works	42 days	Thu 26/05/16	Wed 06/07/16
5	Handover of carriageway and footpath to HyD, DLO	1 day	Thu 07/07/16	Thu 07/07/16
6	**Lin Ma Hang**	**130 days**	**Fri 20/05/16**	**Mon 26/09/16**
7	Submission and approval	16 days	Fri 17/06/16	Sat 02/07/16
8	Application and Construction Works (Cable diversion)	130 days	Fri 20/05/16	Mon 26/09/16
9	Demolition Works	75 days	Sat 02/07/16	Wed 14/09/16
10	Handover of work area to HyD, DLO	1 day	Thu 15/09/16	Thu 15/09/16
11	**Sha Ling Checkpost**	**147 days**	**Tue 31/05/16**	**Mon 24/10/16**
12	Submission and approval	30 days	Tue 31/05/16	Wed 29/06/16
13	Demolition Works	116 days	Thu 30/06/16	Sun 23/10/16
14	Handover to of works area to HyD, DLO	1 day	Mon 24/10/16	Mon 24/10/16
15	**Miscellaneous Works**	106 days	Tue 07/06/16	Tue 20/09/16

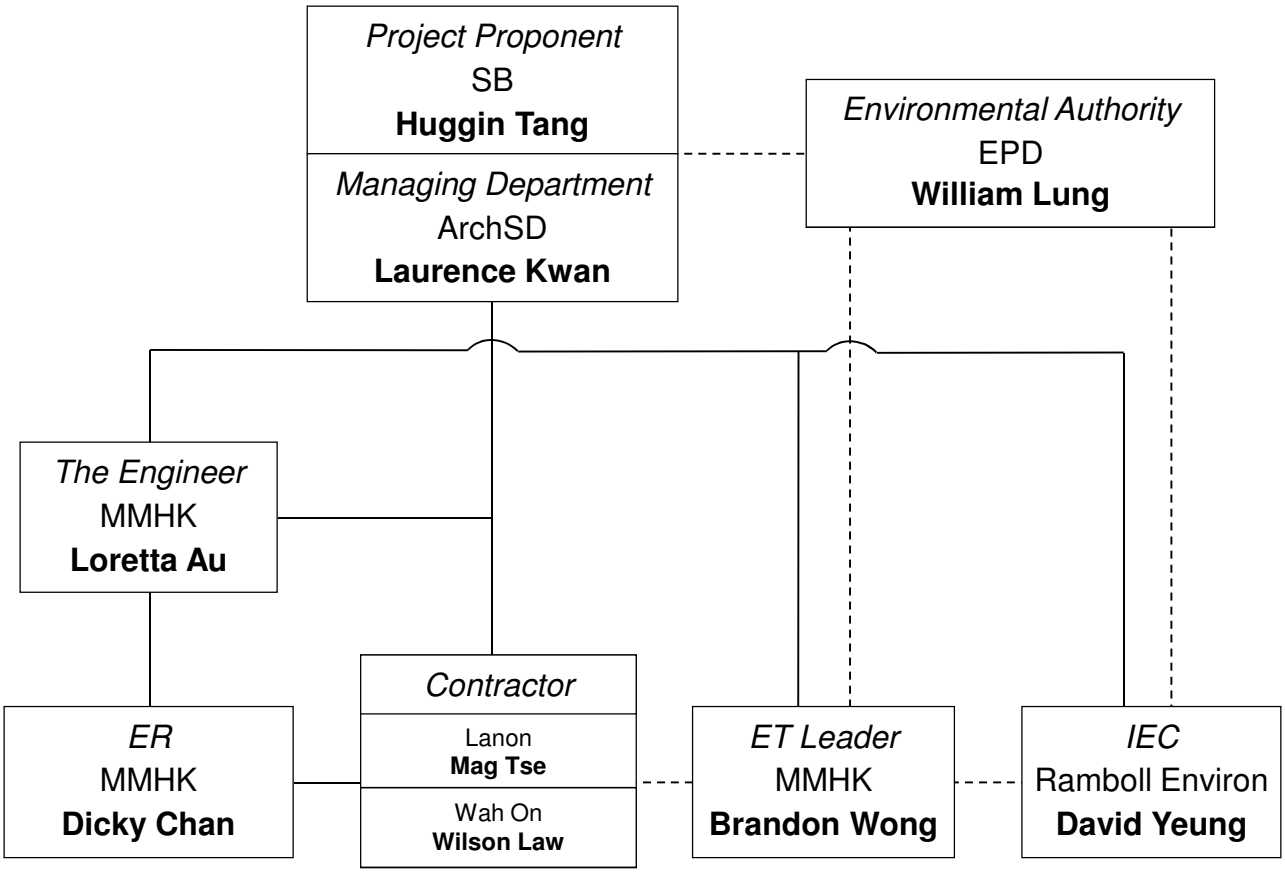


Project: ASD011794_0067
Date: Thu 28/07/16

Task

Summary

B. Project Organisation Chart



Key Personnel Contact List

Role	Department / Company	Name	Telephone No.
Project Proponent	Security Bureau (SB)	Mr. Huggin Tang	2810 3523
Managing Department	Architectural Services Department (ArchSD)	Mr. Laurence Kwan	2867 3871
Environmental Authority	Environmental Protection Department (EPD)	Mr. William Lung	2835 1065
The Engineer	Mott MacDonald Hong Kong Limited (MMHK)	Ms. Loretta Au	2828 5807
Engineer's Representative (ER)	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Dicky Chan	2683 1172
Independent Environmental Checker (IEC)	Ramboll Environ Hong Kong Limited (Ramboll Environ)	Mr. David Yeung	3465 2888
Environmental Team (ET) Leader	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Brandon Wong	2828 5875
The Contractor / Project Manager	Lanon Development Limited (Lanon)	Mr. Mag Tse	9161 4727
The Contractor / Project Manager	Wah On Garden Landscaping Limited (Wah On)	Mr. Wilson Law	9046 6205

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 *Measurements in L_{eq} (30min)*	When one documented complaint is received	75 dB(A) For educational institutions 70 dB(A) (65dB(A) during examinations)

D. Event and Action Plans

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

EVENT	ACTION ET Leader	IEC	ER	Contractor
Action Level	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.	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.	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.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	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.	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.	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.	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.

E. Schedule of Mitigation Measures from the EIA

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: • 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 hardcores; • 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	C	✔

Legend: (1) C - During Construction
(2) ✔ - Implemented
P - Partially Implemented
× - Not Implemented
REC - Rectified by Contractor
(REC) - Partially Rectified by Contractor
! - Pending Contractor's Rectification Action
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	The following good site practical should be implemented: • 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 Noise Sensitive Receivers (NSRs) as is practical; • Unused equipment should be turned off. Powered Mechanical Equipment (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	C	✔
3.8.1 -3.8.3	4.8.2 -4.8.3	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. With construction / demolition work undertaken at a distance of 60m or less to the NSRs, below mitigation measures should be included: **Level 1 – Use of Quiet Plant and Movable Noise Barrier** • The Contractor shall obtain particular models of plant that are quieter than standards given in the Technical Memorandum on Noise from Construction Work other than Percussive Piling (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	C	✔

Legend: (1) C - During Construction

(2) ✔ - Implemented; P - Partially Implemented; × - Not Implemented; REC - Rectified by Contractor; (REC) - Partially Rectified by Contractor; ! - Pending Contractor's Rectification Action; 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	Good site practices in addition to the implementation of mitigation measures would minimize the impact to the surrounding environment. *General Prevention and Precaution Measures:* • 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	C	✔
4.7.2 - 4.7.3	5.3.2 - 5.3.3	**Concreting Work** 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. 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.	Contractor	C	N/A
4.7.4	5.3.4	**Soil Excavation and Stockpiling** 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.	Contractor	C	4

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	**Site Depot** 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. 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.	Contractor	C	N/A
4.7.7	5.3.7	**Construction of Checkpoint** Sewage system should be constructed to divert domestic sewage, which will be generated from the sanitary facilities provided in the new checkpoint at Sha Tau Kok, to public sewer connected to government sewage treatment facilities.	Contractor	C	N/A

Legend: (1) C - During Construction
(2) ✔ - Implemented
P - Partially Implemented
× - Not Implemented
REC - Rectified by Contractor
(REC) - Partially Rectified by Contractor
! - Pending Contractor's Rectification Action
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	**Site Clearance** 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.	Contractor	C	N/A
5.6.10 - 5.6.12	6.3.8	**Construction and Demolition Materials** 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. 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. 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.	Contractor	C	✔
5.6.13 - 5.6.14	6.3.9 - 6.3.13	**Chemical Waste** 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: Containers used for the storage of chemical wastes should: • 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, The storage area for chemical wastes should: • be clearly labelled and used solely for the storage of	Contractor	PL	N/A

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		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 whichever is the greatest; • 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: • 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	C	✔
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	C	✔

Legend: (1) C - During Construction
PL - During Construction Planning
(2) ✔ - Implemented
P - Partially Implemented
× - Not Implemented
REC - Rectified by Contractor
(REC) - Partially Rectified by Contractor
! - Pending Contractor's Rectification Action
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	C		✔
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	C		✔
Table 6.39 - Table 6.45	7.2	**Disturbance to Wetland-Dependent Birds, Raptors, Terrestrial Birds and Egretry** • 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 egretry to ardeid non-breeding season (from August to February).	Contractor	C		✔

Legend: (1) C - During Construction
(2) ✔ - Implemented
P - Partially Implemented
× - Not Implemented
REC - Rectified by Contractor
(REC) - Partially Rectified by Contractor
! - Pending Contractor's Rectification Action
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	• 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	C1	✔
Table 7-13 CP1	Table 9-1	• 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	BC	✔
Table 7-13 CP1	Table 9-1	• 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	C1	✔
Table 7-13 CP1	Table 9-1	• 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	C1	✔
Table 7-13 CP1	Table 9-1	• 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	C1	✔
Table 7-13 CP1	Table 9-1	• The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered.	Project Landscape Architect / Contractor	C1	N/A
Table 7-13 CP1	Table 9-1	• The rectification and repair of damaged vegetation following the construction phase to its 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	C1	✔
Table 7-13 CP1	Table 9-1	• 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	C1	✔
Table 7-13 CP1	Table 9-1	• 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	C1	✔
Table 7-13 CP1	Table 9-1	• 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	C1	✔
		Preservation of Existing Topsoil			
Table 7-13 CP2	Table 9-1	• Topsoil disturbed during the construction phase should be tested using a standard soil testing	Contractor	C1	✔

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		methodology and where it is found to be worthy of retention stored for re-use.			
Table 7-13 CP2	Table 9-1	• 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	C1	✔
Table 7-13 CP2	Table 9-1	• 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	C1	✔
		Permanent and Temporary Works Areas			
Table 7-13 CP3	Table 9-1	• Where appropriate to the final design the landscape of these works areas should be restored following the completion of the construction phase.	Contractor	C1	✔
Table 7-13 CP3	Table 9-1	• 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	C1	✔
		Mitigation Planting			
Table 7-13 CP4	Table 9-1	• Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase.	Contractor	C1	✔
Table 7-13 CP4	Table 9-1	• Use of native plant species predominantly in the planting design for the buffer areas.	Contractor	C1	✔
Table 7-13 CP4	Table 9-1	• 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	C1	✔
		Transplantation of Existing Trees			
Table 7-13 CP5	Table 9-1	• 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	BC1	✔
		Design of the Fence and associated Structures			
Table 7-14 OP1	Table 9-2	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: 1. Integrated design approach – the boundary fence should 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	ArchSD	D	✔

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		check points should be away from landscape and visually sensitive areas such wetland, fishpond and agricultural field. 2. Building massing - the proposed use of simple 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. 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. 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. 5. Responsive lighting design – Aesthetic design of architectural and track lighting with following glare design measures: – 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	• Utilise native to Hong Kong will be utilized within the buffer planting areas.	Contractor	D	✔
Table 7-14 OP2/3	Table 9-2	• 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	D	✔
Table 7-14 OP2	Table 9-2	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	Contractor	D	✔

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		should also be considered on engineering structures.			
Table 7-14 OP2	Table 9-2	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 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.	Contractor	D	✔

Legend: (1) C1 - Throughout Construction Phase
BC - Before Construction Phase Commences
BC1 - Prior to the Commencement of the Proposed Works
D - Throughout Design Phase
(2) ✔ - Implemented
P - Partially Implemented
× - Not Implemented
REC - Rectified by Contractor
(REC) - Partially Rectified by Contractor
! - Pending Contractor's Rectification Action
N/A - Not Applicable

F. EM&A Schedule

Environmental Monitoring and Audit Schedule for August 2016

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

Noise Monitoring
* Site Audit by Environmental Team (ET) for all subject works
** Site Audit with Independent Environmental Checker (IEC) for all subject works
Public Holiday

Tentative Environmental Monitoring and Audit Schedule for September 2016

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

Noise Monitoring
* Site Audit by Environmental Team (ET) for all subject works
** Site Audit with Independent Environmental Checker (IEC) for all subject works
Public Holiday

G. Calibration Certificates

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 604025 Page 1 of 2 Pages

Customer : Mott MacDonald Hong Kong Limited

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

Order No. : Q61489 **Date of receipt :** 16-May-16

Item Tested

Description : Acoustic Calibrator

Manufacturer : Castle **I.D.** : --

Model : GA607 **Serial No.** : 040162

Test Conditions

Date of Test : 30-May-16 **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:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	505317	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	601604	NIM-PRC & SCL-HKSAR
S041	Universal Counter	506951	SCL-HKSAR
S206	Sound Level Meter	506958	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), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Kin Wong

Approved by : Steve Kwan

Date: 30-May-16

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

E

Calibration Certificate

Results :

1. **Level Accuracy**

UUT Setting (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94.0	94.2	± 0.3 dB

Uncertainty : ± 0.2 dB

2. **Frequency Accuracy**

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 942 Class 1 Spec.
1.000	1.0002	± 2 %

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

3. **Level Stability** : 0.0 dB
IEC 942 Class 1 Spec.: ± 0.1 dB
Uncertainty : ± 0.01 dB

4. **Total Harmonic Distortion** : < 0.9 %
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 : 1008 hPa.

---------- END ----------

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **604024** Page 1 of 3 Pages

Customer : Mott MacDonald Hong Kong Limited

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

Order No. : Q61489 **Date of receipt :** 16-May-16

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion **I.D.** : --

Model : NL-31 **Serial No.** : 01262786

Test Conditions

Date of Test : 27-May-16 **Supply Voltage** : --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01, IEC 651, IEC 804.

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:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C147450	SCL-HKSAR
S240	Sound Level Calibrator	601604	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), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Kin Wong

Approved by : Steve Kwan

Date: 27-May-16

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

E

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	94.0
		Slow		93.9
	L_C	Fast		94.0
	Lp	Fast		94.2
30 – 120	L_A	Fast	94.0	93.9
		Slow		93.9
	L_C	Fast		94.0
	Lp	Fast		94.2
30 – 120	L_A	Fast	114.0	114.0
		Slow		113.9
	L_C	Fast		114.0
	Lp	Fast		114.2

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 : ± 0.01 dB

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	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	- -	
110	84.0	84.1	+0.1	
100	74.0	74.1	+0.1	
90	64.0	64.2	+0.2	
80	54.0	54.2	+0.2	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	+0.1	± 0.4 dB
	94.0	94.0 (Ref.)	- -	
	95.0	95.0	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	-39.9	- 39.4 dB, ± 1.5 dB
63 Hz	-26.3	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.3	+ 1.2 dB, ± 1 dB
4 kHz	+1.4	+ 1.0 dB ,± 1 dB
8 kHz	+0.3	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-4.0	- 6.6 dB, + 3 dB ~- ∞

Uncertainty : ± 0.1 dB

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	40.0	

Uncertainty : ± 0.1 dB

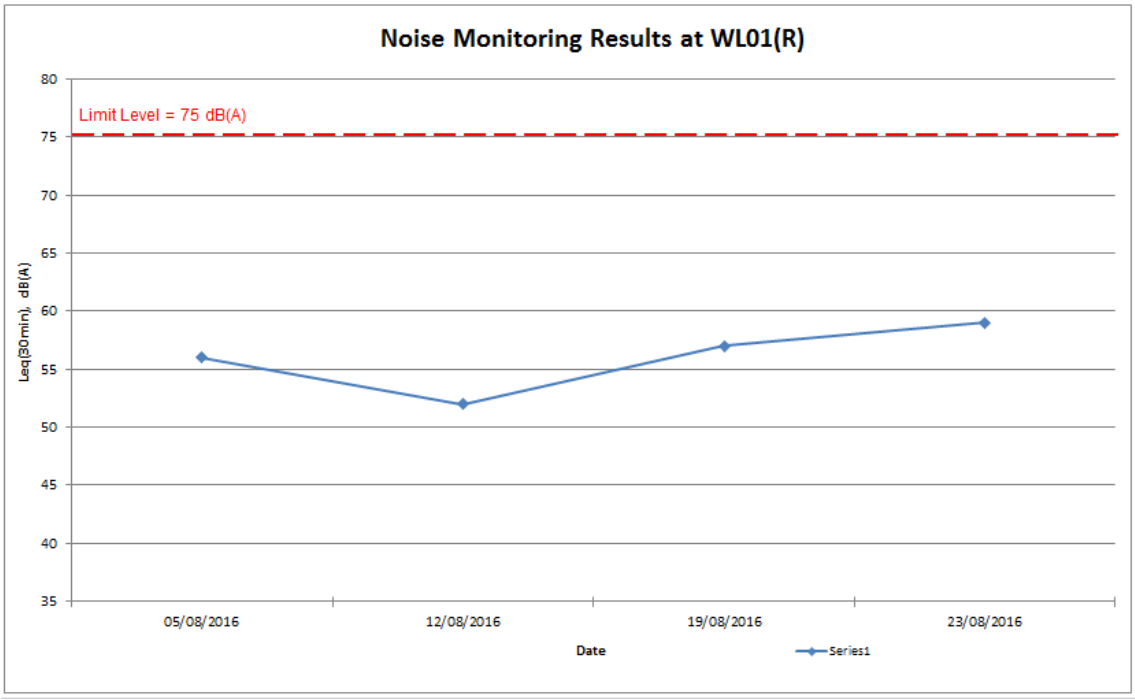
Remarks:
1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1004 hPa
4. The UUT's internal calibration was performed before the calibration.

---------- END ----------

H. Noise Monitoring Results and Graphical Presentation

Daytime Noise Monitoring Results at Station WL01(R)

Date	Weather Conditions	Wind Speed, m/s	Noise Level for 30-min, dB(A)					Major Construction Noise Sources	Other Noise Sources during monitoring	Remarks
			Start	End	Leq	L10	L90			
05-Aug-16	Cloudy	1.1	10:38	11:08	56	58	56	Demolition work at Lin Ma Hang	Dog barks, Road traffic **(not Project-related)**	Nil
12-Aug-16	Cloudy	1.4	10:35	11:05	52	54	51	Nil	Dog barks, Road traffic **(not Project-related)**	No demolition or construction work at Project site
19-Aug-16	Sunny	1.1	10:50	11:20	57	59	50	Nil	Dog barks, Road traffic **(not Project-related)**	No demolition or construction work at Project site
23-Aug-16	Sunny	1.4	13:25	13:55	59	62	45	Nil	Dog barks, Road traffic **(not Project-related)**	No demolition or construction work at Project site
				Min.	**52**					
				Max.	**59**					



I. Monthly Waste Flow Table

Table I.1: Monthly Summary Waste Flow Table for Reporting Month (from April 2015)

	Actual Quantities of Inert C&D Materials Generated Monthly (in '000 m^3)										Actual Quantities of C&D Wastes Generated Monthly									
Month	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-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
May-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Jun-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Sub-total	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Jul-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Aug-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Sep-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Oct-15	-	0.0065	-	0	-	0	-	0	-	0.0065	-	0	-	0	-	0	-	0	-	0
Nov-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Dec-15		0.0189	-	0	-	0	-	0	-	0.0189	-	0	-	0	-	0	-	0	-	0
Sub-total	-	0.0254	-	0	-	0	-	0	-	0.0254	-	0	-	0	-	0	-	0	-	0
Jan-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Feb -16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Mar-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Apr-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
May-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Jun-16	-	0.052	-	0	-	0	-	0	-	0.052	-	0	-	0	-	0	-	0	-	0
Sub-total	-	0.0774	-	0	-	0	-	0	-	0.0774	-	0	-	0	-	0	-	0	-	0
Jul-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Aug-16	-	0.020	-	0	-	0	-	0	-	0.020	-	0	-	0	-	0	-	0	-	0
Total	-	0.0974	-	0	-	0	-	0	-	0.0974	-	0	-	0	-	0	-	0	-	0

J. Complaint Log

Table J.1: Complaint Log for the Reporting Month

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

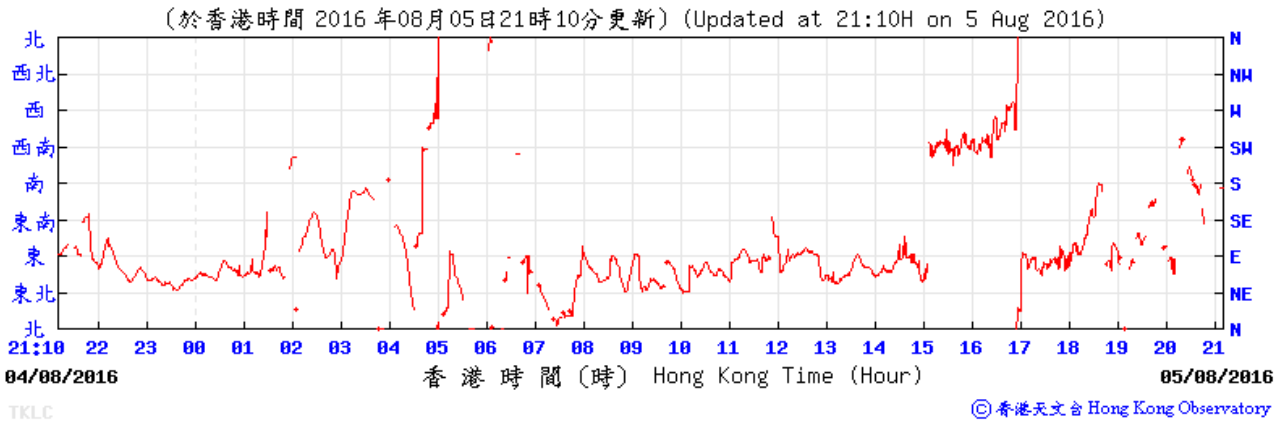
Note: No environmental complaint was received In August 2016.

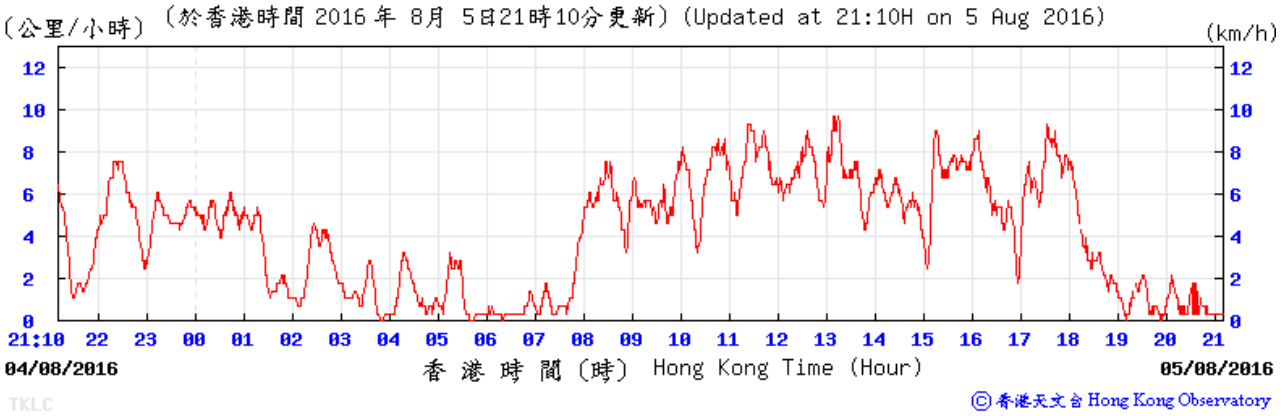
K. Weather Information from Hong Kong Observatory

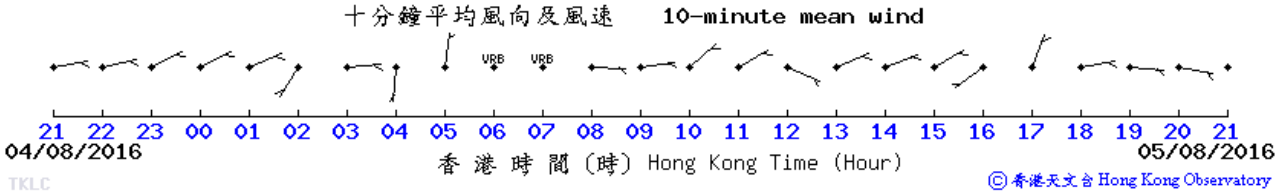
This Appendix presents wind data obtained from the nearest Hong Kong Observatory monitoring station, at Ta Kwu Ling, during noise impact monitoring days.

Wind Data for Ta Kwu Ling

5 Aug 2016

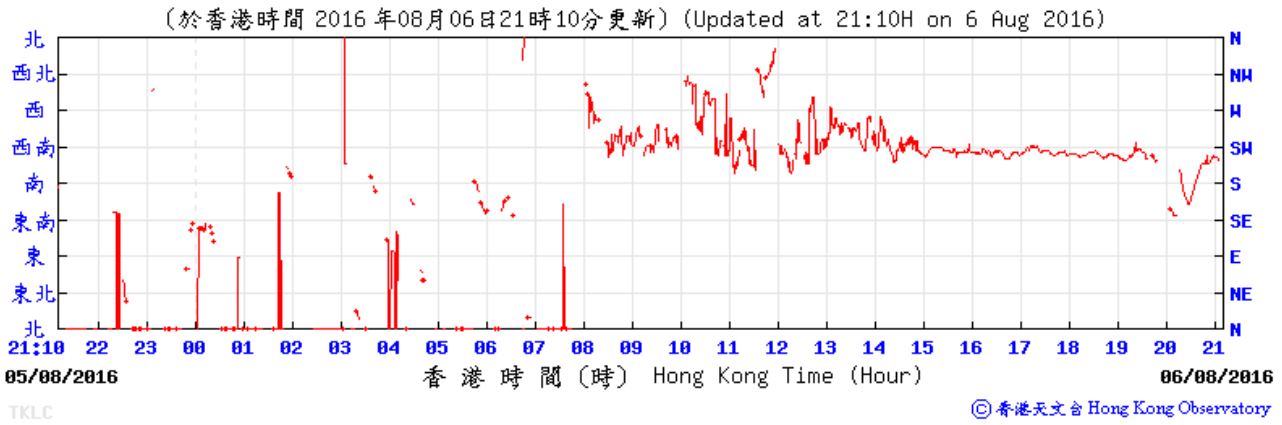


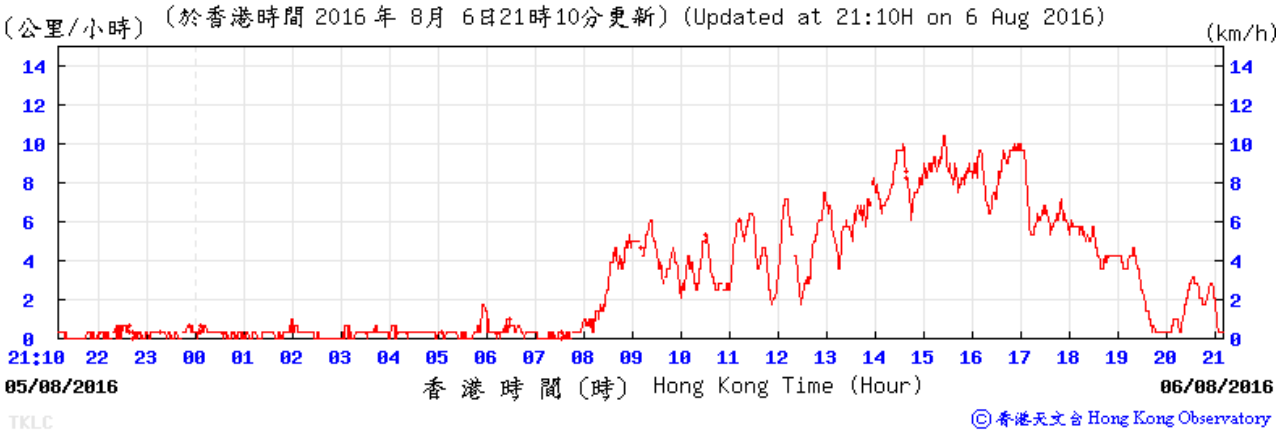


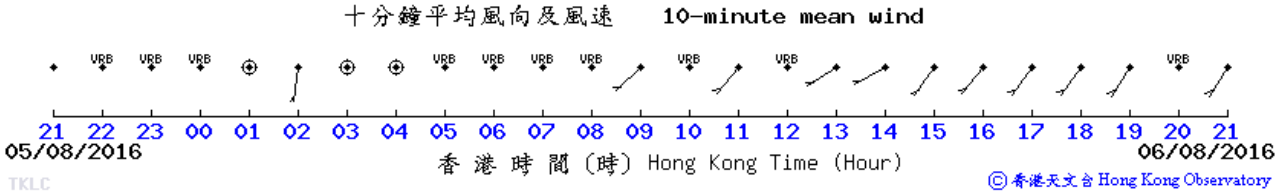


Wind Data for Ta Kwu Ling

6 Aug 2016

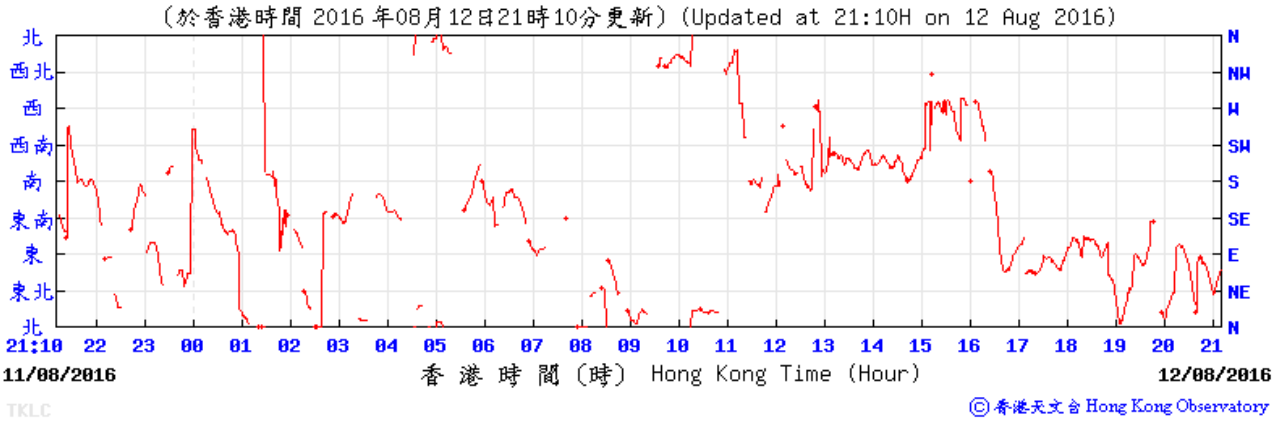


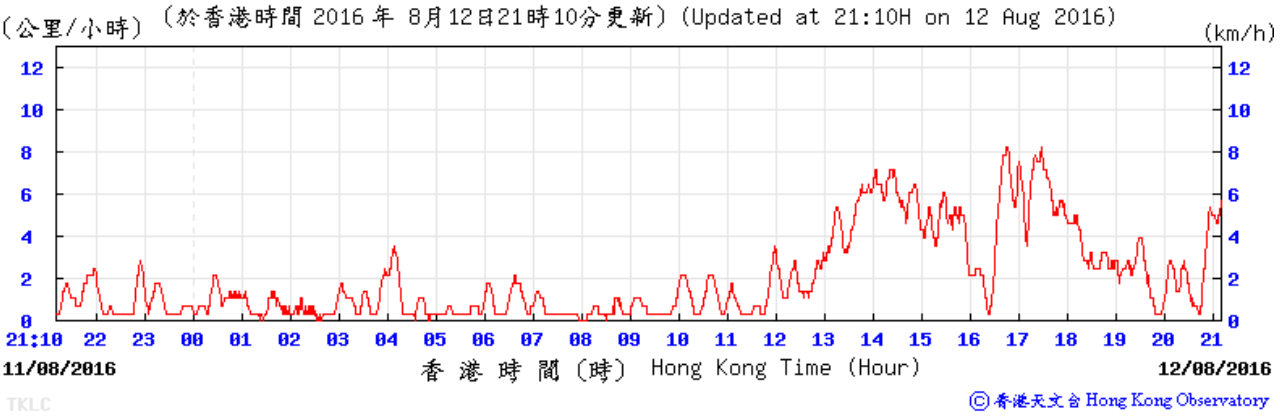


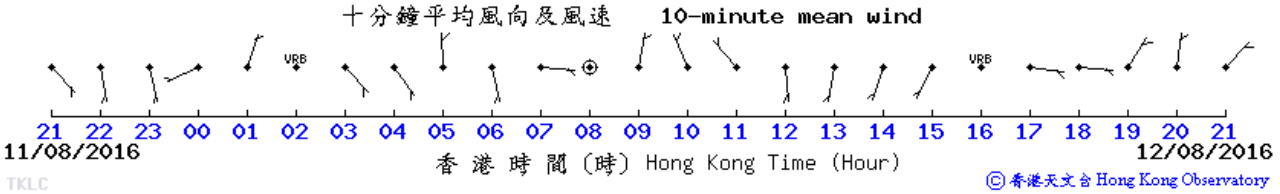


Wind Data for Ta Kwu Ling

12 Aug 2016

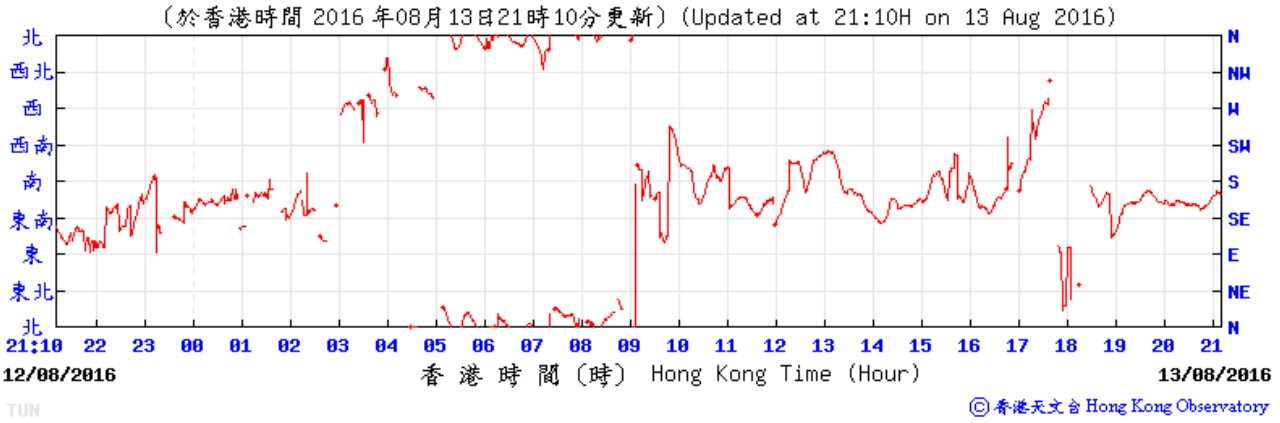


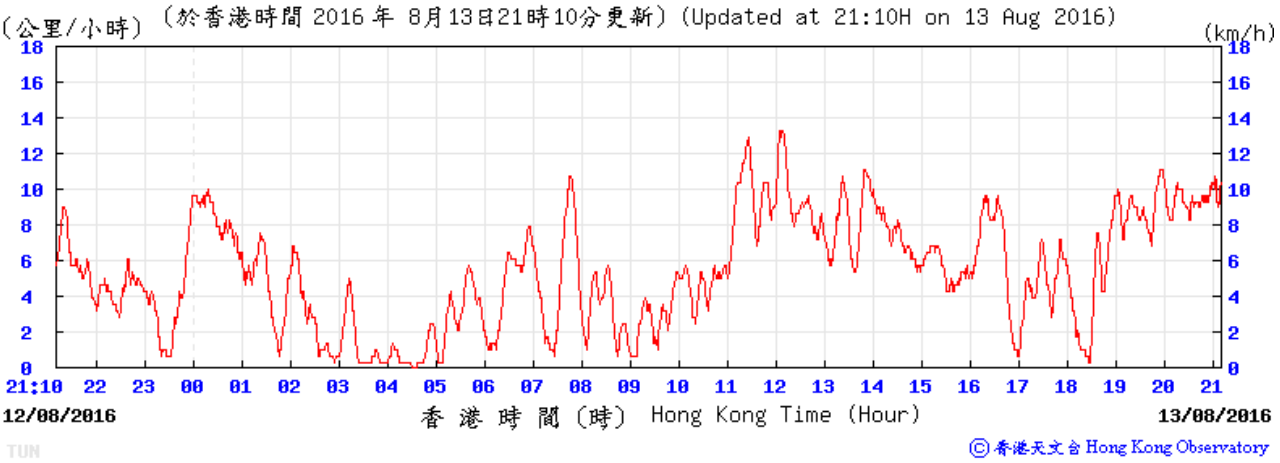


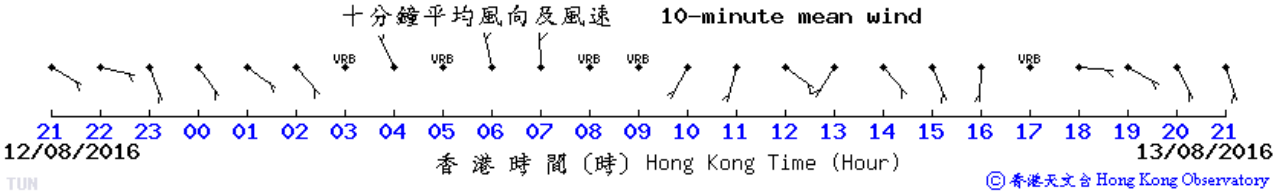


Wind Data for Ta Kwu Ling

13 Aug 2016

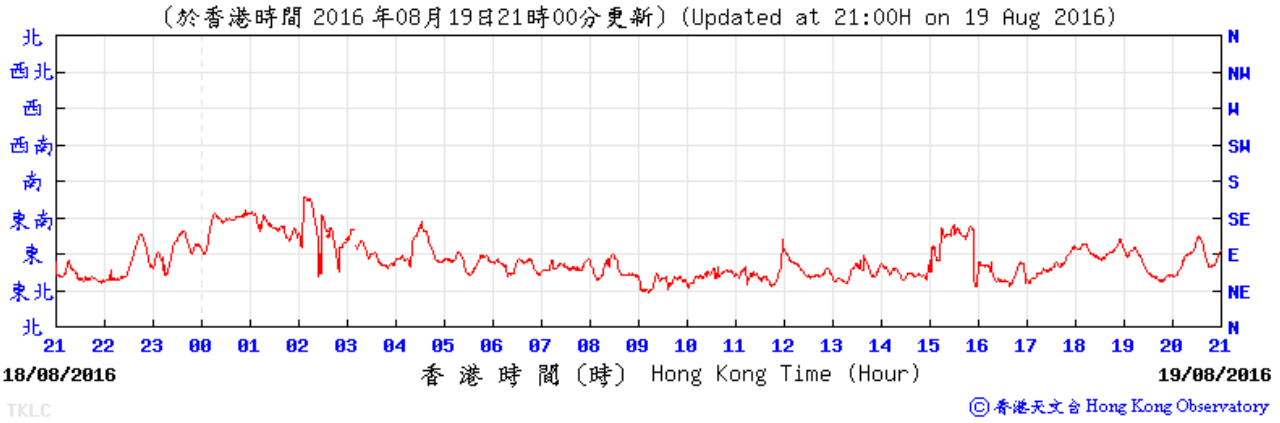


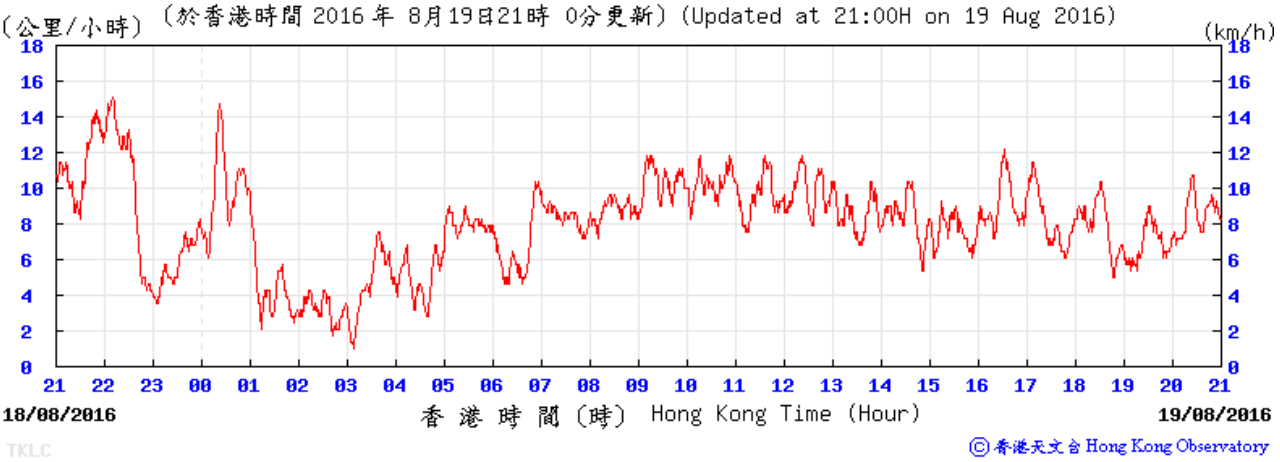


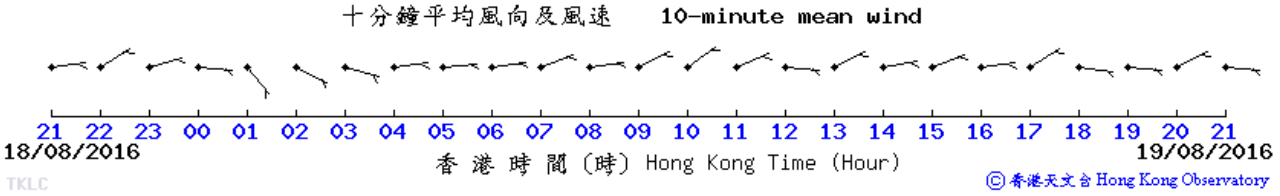


Wind Data for Ta Kwu Ling

19 Aug 2016

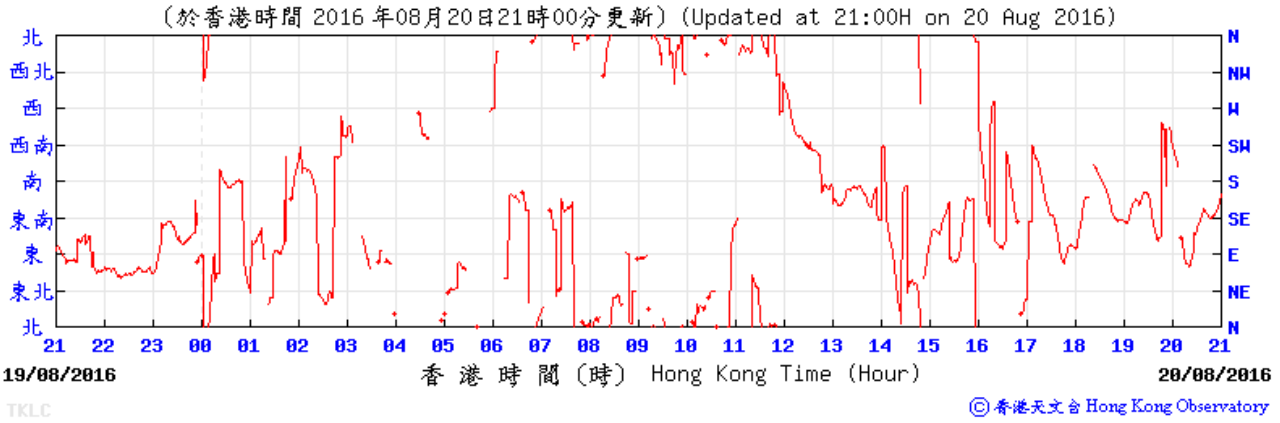


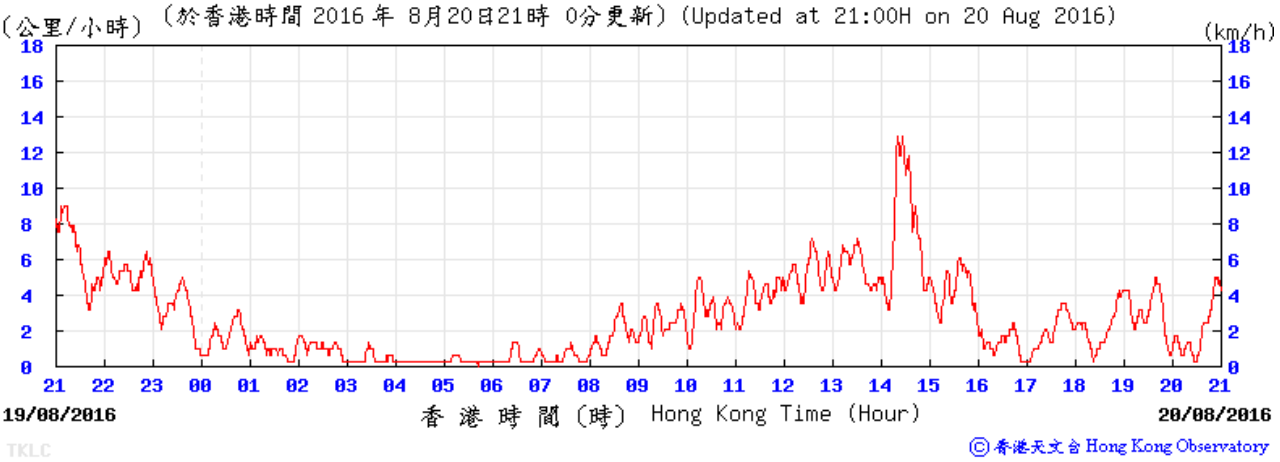


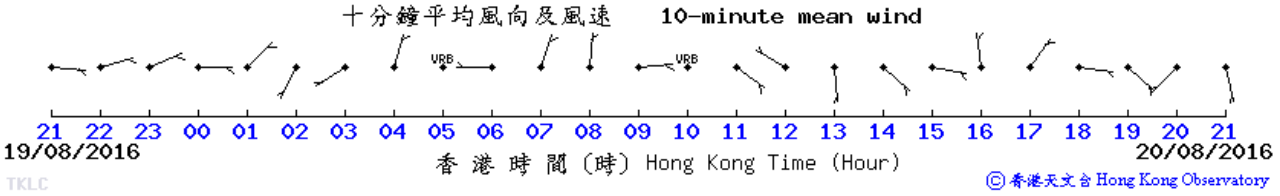


Wind Data for Ta Kwu Ling

20 Aug 2016

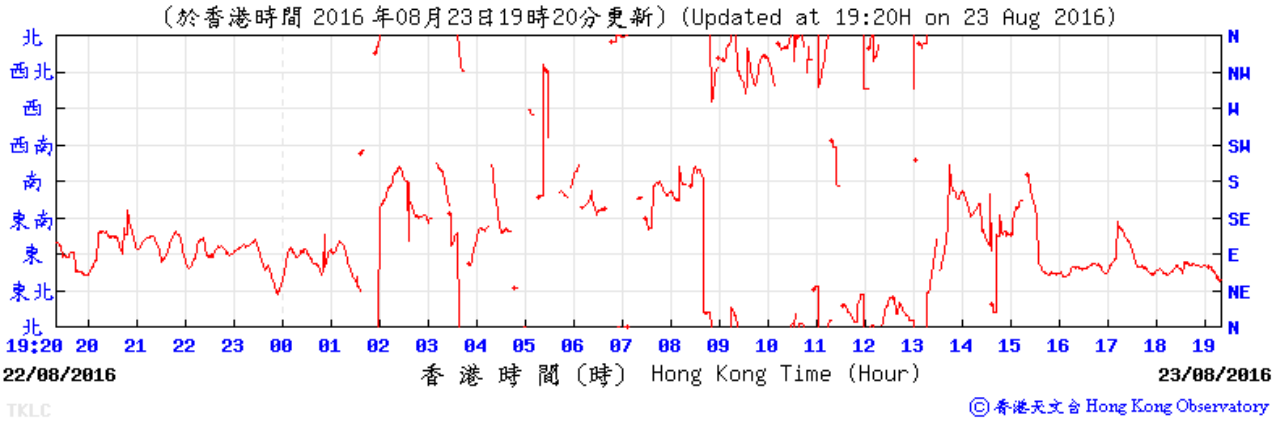


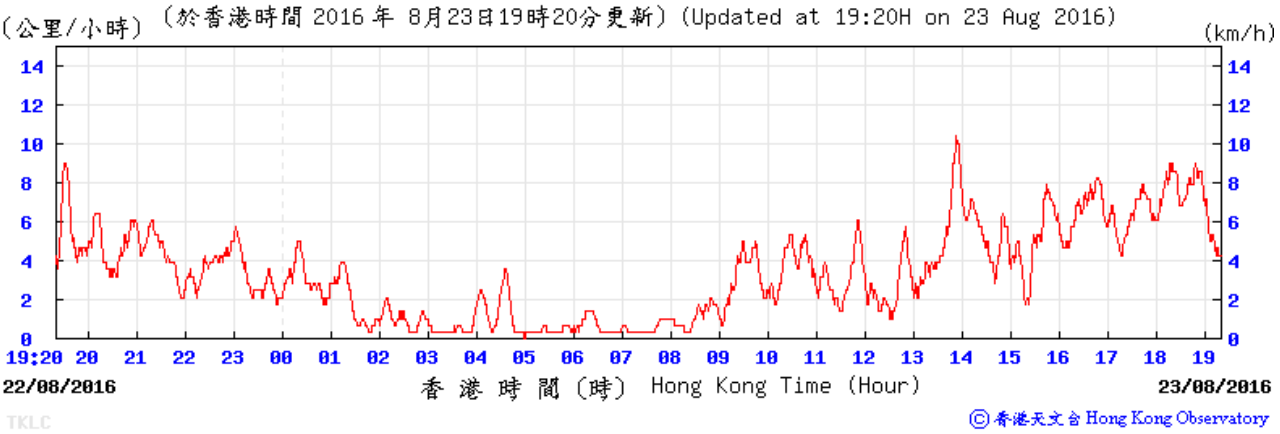


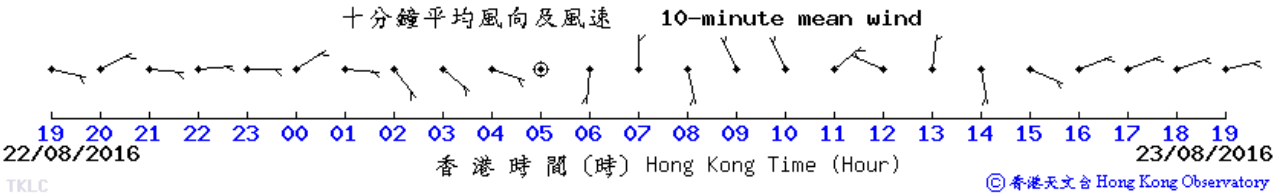


Wind Data for Ta Kwu Ling

23 Aug 2016

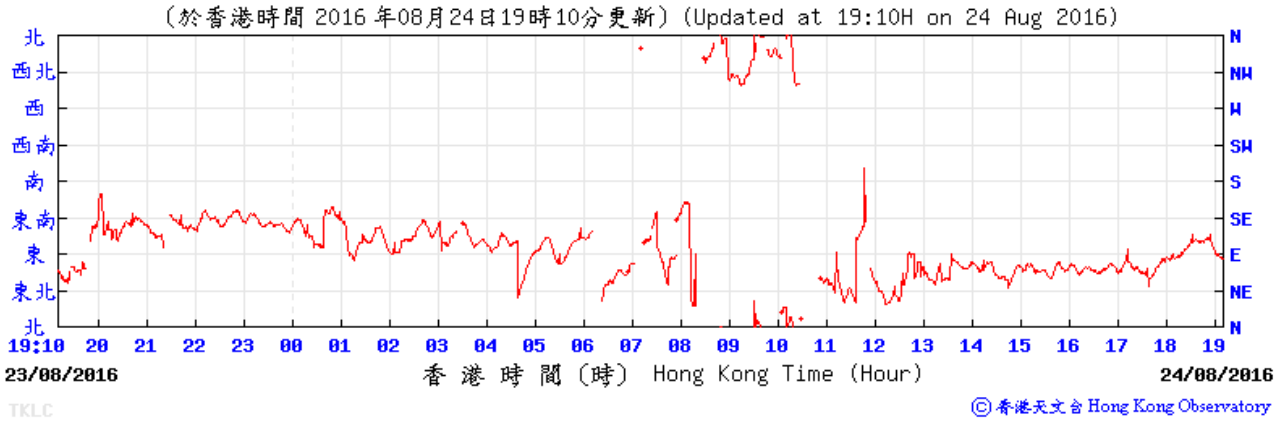


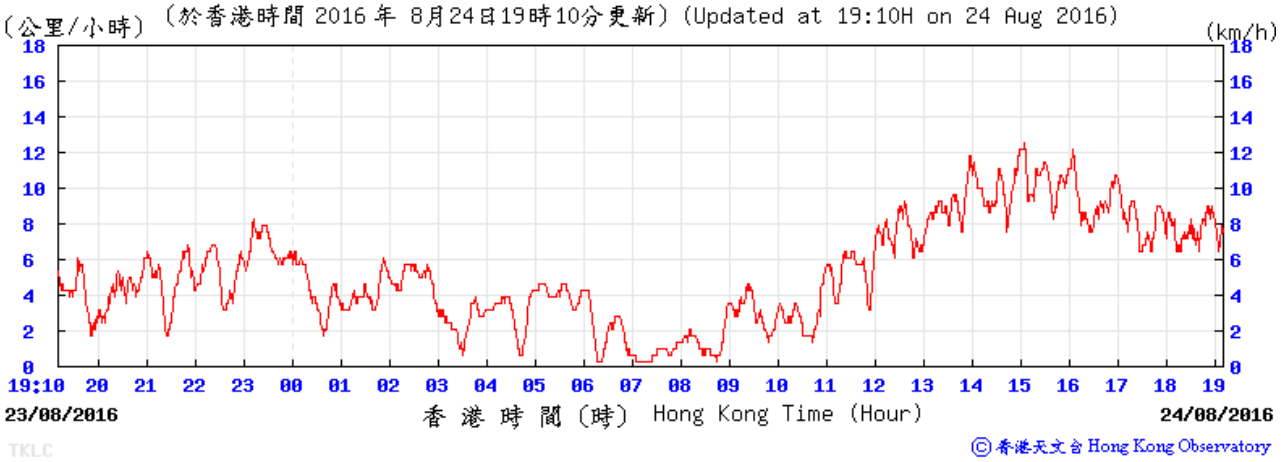


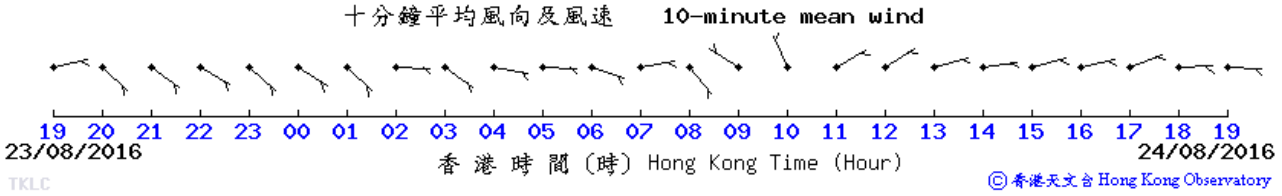


Wind Data for Ta Kwu Ling

24 Aug 2016







EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG, AUGUST 2016 (Table 1)

Date August	Mean Pressure (hPa)	Air Temperature			Mean Dew Point Temperature (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)				
1	998.8	31.6	29.5	26.8	24.9	76	85	4.6
2	995.9	29.5	27.1	25.1	25.0	88	93	121.0
3	1006.3	27.8	26.8	26.1	25.5	93	86	17.3
4	1008.7	28.6	26.9	26.1	26.0	94	82	20.9
5	1008.3	32.3	29.3	27.0	26.0	83	58	Trace
6	1005.0	33.2	30.0	27.4	25.4	77	36	-
7	1002.8	33.4	30.4	28.2	26.4	80	61	-
8	1003.0	33.4	30.5	28.6	26.3	79	83	-
9	1001.8	32.7	29.2	26.1	26.1	83	83	33.5
10	1002.6	29.3	26.7	24.7	25.1	91	90	39.8
11	1003.2	29.9	27.2	25.2	24.8	87	85	42.1
12	1001.3	29.4	28.1	26.9	25.5	86	86	0.4
13	999.8	32.3	28.8	27.1	25.9	84	71	Trace
14	998.3	29.4	27.3	25.8	25.4	90	89	25.7
15	997.4	28.4	26.6	25.6	25.3	93	88	19.1
16	996.0	26.9	26.2	25.5	25.4	96	88	49.9
17	993.7	28.0	26.5	25.3	25.8	96	89	40.9
18	996.3	28.7	27.0	25.9	25.9	94	88	50.9
19	1003.0	31.3	28.2	26.5	26.4	90	84	10.5
20	1004.7	32.4	29.2	27.4	26.8	88	74	3.8
21	1003.2	31.2	27.4	24.5	25.0	87	58	39.9
22	1004.7	33.0	29.3	27.3	25.8	82	27	-
23	1004.8	33.4	29.7	27.2	24.3	74	19	-
24	1003.8	33.5	30.1	27.9	25.0	75	42	-
25	1004.2	34.4	30.4	28.1	25.8	77	34	-
26	1004.6	33.6	30.4	28.1	24.7	72	34	-
27	1006.4	33.2	29.7	27.0	25.6	79	74	3.5
28	1006.4	31.0	27.6	25.4	24.1	82	82	8.7
29	1007.2	28.0	26.7	26.2	22.0	76	87	Trace
30	1007.6	31.2	28.0	26.1	21.8	69	77	-
31	1006.3	31.5	28.6	26.6	24.2	78	84	0.2
Mean/Total	1002.8	31.0	28.4	26.5	25.2	84	72	532.7
Normal*	1005.2	31.1	28.6	26.6	25.0	81	69	432.2
Station	Hong Kong Observatory							

EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG, AUGUST 2016 (Table 2)

Date August	Number of hours of Reduced Visibility# (hours)	Total Bright Sunshine (hours)	Daily Global Solar Radiation (MJ/m^2)	Total Evaporation (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1	2	1.9	9.19	N.A.	290	21.3
2	0	0.9	7.57	0.9	190	52.3
3	0	0.2	6.95	3.2	120	14.3
4	0	0.8	6.43	2.9	060	23.4
5	0	8.5	22.66	4.6	050	11.1
6	0	11.3	25.59	6.2	250	20.4
7	0	9.7	23.29	5.2	250	22.3
8	0	8.2	21.84	5.4	240	17.9
9	0	4.5	10.16	N.A.	260	10.9
10	0	0.8	4.95	1.1	070	8.0
11	0	3.1	8.30	0.9	240	9.0
12	0	0.4	10.05	1.3	250	11.0
13	0	9.0	22.25	4.8	070	12.0
14	0	0.7	10.34	3.7	060	26.7
15	0	0.5	7.88	2.1	040	16.5
16	0	-	3.67	0.7	100	19.3
17	0	0.8	7.86	5.4	080	32.9
18	0	1.3	9.67	1.4	120	34.2
19	0	5.2	19.58	3.5	070	19.9
20	0	4.9	14.63	7.7	240	6.8
21	0	5.2	14.51	4.8	230	12.0
22	0	10.0	24.58	5.3	070	14.7
23	0	10.6	23.03	5.2	090	5.0
24	0	11.0	24.02	4.6	070	10.9
25	0	10.7	23.68	6.4	060	11.7
26	0	10.6	23.84	6.8	220	10.9
27	1	6.2	15.55	4.4	080	8.3
28	4	1.1	10.05	4.2	010	19.9
29	0	0.9	6.53	2.1	050	27.1
30	0	5.0	16.93	3.4	030	12.0
31	0	4.5	17.15	6.4	210	8.8
Mean/Total	7	148.5	14.60	114.6&	060	17.1
Normal*	50.6§	188.9	15.63	134.9	230	19.4
Station	Hong Kong International Airport	King's Park			Waglan Island^	

The minimum pressure recorded at the Hong Kong Observatory was 984.5 hectopascals at 0342 HKT on 2 August.

The maximum air temperature recorded at the Hong Kong Observatory was 34.4 degrees C at 1449 HKT on 25 August.

The minimum air temperature recorded at the Hong Kong Observatory was 24.5 degrees C at 0253 HKT on 21 August.

The maximum gust peak speed recorded at Waglan Island was 121 kilometres per hour from 210 degrees at 0523 HKT on 2 August.

The maximum 1-minute mean rainfall rate recorded at the Hong Kong Observatory was 151 millimetres per hour at 1222 HKT on 9 August.

Reduced visibility refers to visibility below 8 kilometres when there is no fog, mist or precipitation.

- The visibility readings at the Hong Kong International Airport are based on hourly observations by professional meteorological observers in 2004 and before, and average readings over the 10-minute period before the clock hour of the visibility meter near the middle of the south runway from 2005 onwards. The change of the data source in 2005 is an improvement of the visibility assessment using instrumented observations following the international trend.

- Before 10 October 2007, the number of hours of reduced visibility at the Hong Kong International Airport in 2005 and thereafter displayed in this web page was based on hourly visibility observations by professional meteorological observers. Since 10 October 2007, the data have been revised using the average visibility readings over the 10-minute period before the clock hour, as recorded by the visibility meter near the middle of the south runway.

^ In case the data are not available from Waglan Island, observations of Cheung Chau or other nearby weather stations will be incorporated in computing the Prevailing Wind Direction and Mean Wind Speed.

* 1981-2010 Climatlogical Normal, unless otherwise specified

§ 1997-2015 Mean value

& Data incomplete