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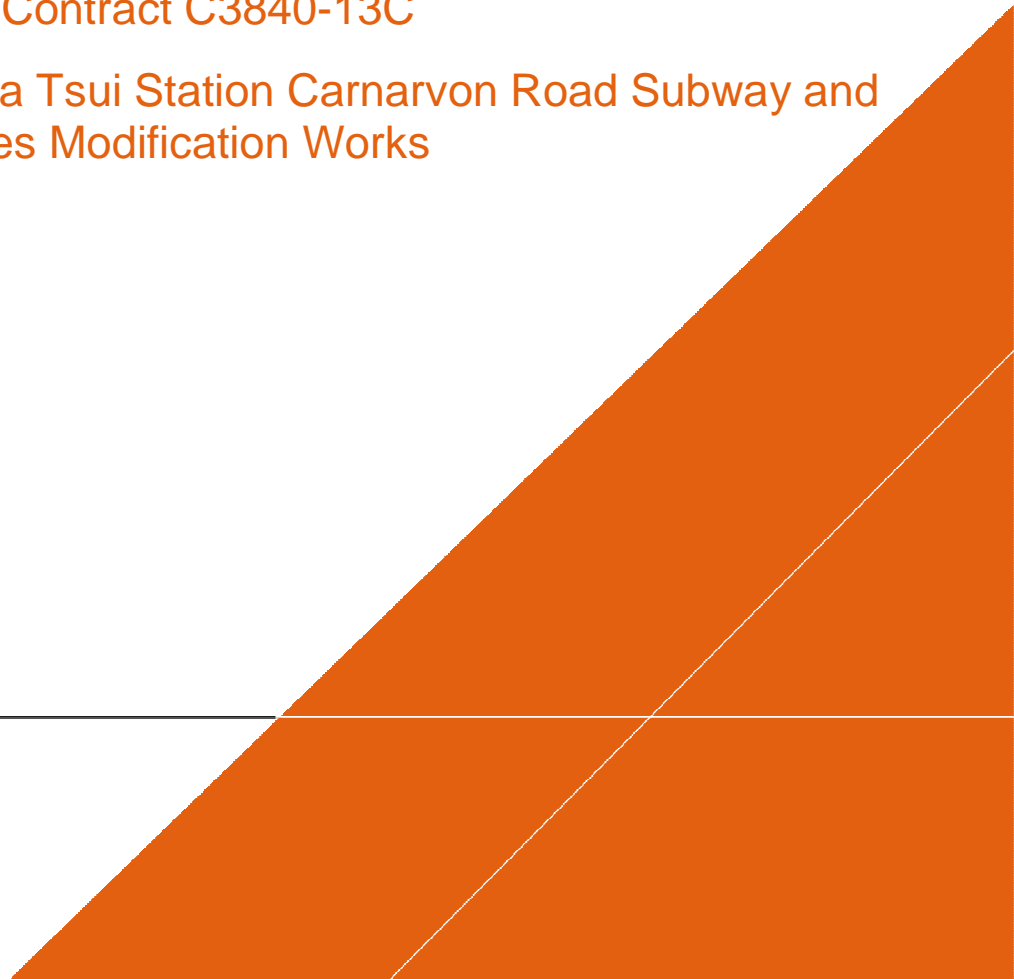
Maeda Corporation



# QUARTERLY EM&A REPORT (JUNE TO AUGUST 2017)

MTRCL Contract C3840-13C

Tsim Sha Tsui Station Carnarvon Road Subway and  
Entrances Modification Works



Your Ref:  
Our Ref: 60453136.40032976/2017000424E

**By Email and Post**

MTR Corporation Limited  
Fo Tan Railway House  
No. 9, Lok King Street, Fo Tan  
Shatin, N.T.,  
Hong Kong

Attn.: Mr. Alfa Liu

3 October 2017

Dear Sirs

**Consultancy Agreement A130-13  
Independent Environmental Checker for CRS and LTS  
CRS - Verification for 14th Quarterly Environmental Monitoring and Audit (EM&A) Report  
(June 2017 to August 2017) (Report No.: EB001340R0581)**

We refer to the 14th Quarterly EM&A Report (June 2017 to August 2017) received under cover of the email from the Environmental Team, Arcadis Design & Engineering Limited, dated on 27 September 2017.

Further to our comments provided on 28 and 29 September 2017 and subsequent amendment of the Report, we have no further comment and have verified the captioned report (Report No.: EB001340R0581).

Should you have any queries, please feel free to contact the undersigned at 3922 9366.

Yours faithfully  
**AECOM Consulting Services Ltd**

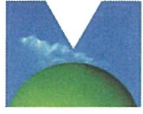


Y. W. Fung  
Independent Environmental Checker

LLMC/wwsc

cc Arcadis Design & Engineering Limited  
Maeda Corporation

(Attn.: Mr. F. N. Wong) via email  
(Attn.: Ms. Cecilia Lee) via email



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# QUARTERLY EM&A REPORT (JUNE TO AUGUST 2017)

MTRCL Contract C3840-13C

Tsim Sha Tsui Station Carnarvon Road Subway and  
Entrances Modification Works

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**Report No** EB001340R0581

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# EXECUTIVE SUMMARY

## Breaches of Action and Limit Levels

- ES01 No Notice of Exceedance (NOE) and the associated investigation and follow-up actions were required as the environmental monitoring results registered no exceedances of Action/ Limit Levels of air quality and construction noise during the Reporting Period.
- ES02 No deficiencies or non-compliance of environmental mitigation measures or adverse environmental impacts were recorded during the Reporting Period. However, during the joint site inspection on 18 July 2017, chemical containers were found without drip trays. As preventive action to avoid possible spillage of the chemicals was promptly taken by the Contractor upon notification, situation was rectified in-situ and the case was hence closed. No corrective actions were therefore required during the Reporting Period.

## Environmental Complaints

- ES03 No environmental complaint was recorded during the Reporting Period.

## Notification of Summons & Successful Prosecutions

- ES04 No notification of summons and successful prosecutions were recorded during the Reporting Period.

## Reporting Changes

- ES05 No major reporting changes were made during the Reporting Period.

## Future Key Issues

### *General*

- ES06 Full implementation of the environmental mitigation measures, which are required in the EM&A Plan and summarized in Implementation Schedule, are recommended. Whenever necessary, proper maintenance and improvement of the implemented mitigation measures are reminded.

### *Construction Noise*

- ES07 Particular attention should be paid to construction noise mitigation measures, especially during piling works during the coming construction period to ensure full compliance with statutory and non-statutory requirements and guidelines. Proactive review of working methods, careful selection and arrangement of the noisy equipment as well as effective noise mitigation measures are strongly recommended.

### *Water Quality*

- ES08 In addition, compliance with water quality mitigation measures remains one of the key environmental issues within the construction period, especially when water usage is high.

### *Air quality*

- ES09 Furthermore, implying of construction dust suppression measures are recommended during dusty activities under dry and windy conditions.
- ES10 Construction dust suppression measures including decking over the excavation areas, watering of exposed site surface and covering of all excavated and stockpiles of dusty material by impervious sheeting or similar materials are reminded.

# 1 INTRODUCTION

## 1.1 Project Background

- 1.1.1 In order to improve the appearance of Carnarvon Road Entrance D1 and D2 of Tsim Sha Tsui (hereafter referred as 'TST') Station and to provide a more comfortable walking environment nearby, MTR Corporation Limited (hereafter referred as 'MTRC' or 'the Corporation') has commissioned Maeda Corporation (hereinafter referred as 'MC') the contract ***MTR Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works*** (hereafter referred as 'the Project'). The Project is proposed to rebuild the existing Entrance D1 and D2 and construct a new Entrance D3 at the basement B2 level of the K11 Art Mall to connect to the TST station by a subway, which extends from the Entrance D1 and D2 and runs approximately 80m along Carnarvon Road and across the Bristol Avenue to the Entrance D3. The project was commenced in March 2014 and is anticipated to be completed by end of 2018.
- 1.1.2 The existing TST Station had been in operation before the Environmental Impact Assessment Ordinance (hereafter referred as 'EIAO') came into effect on 1 April 1998. It constitutes an exempted Designated Project (hereinafter referred as 'DP') according to Section 9(2) (g) of the EIAO (Cap. 499). As the Project involves a material change to an exempted DP which may have potential environmental impacts, an environmental permit is required prior to the commencement of the modification works. The Project Profile has been developed to provide information for direct application of an environmental permit. The EP has been granted since 18 July 2012, where the Project Profile and the associated EM&A Plan are registered.
- 1.1.3 Site map, works area and locations of the environmental monitoring under the Project are illustrated in Figure 1.1 Site Location Plan of ***Appendix A***.
- 1.1.4 Management structure of the Project, including organization chart, lines of communication and contact names and telephone numbers of key personnel, is demonstrated in ***Appendix B***.
- 1.1.5 Construction programme is shown in ***Appendix C***, whereas implementation schedule for the recommended environmental mitigation measures (hereinafter referred as 'the Implementation Schedule') is summarized in ***Appendix D***, which fine tunes construction activities and shows inter-relationship with environmental protection / mitigation measures for the construction period.
- 1.1.6 This is the 14<sup>th</sup> quarterly EM&A report (hereinafter referred as 'This Report') covering construction period from 1<sup>st</sup> June to 31<sup>st</sup> August 2017 (hereinafter referred as 'the Reporting Period').
- 1.1.7 This Report has been written in accordance with the Environmental Monitoring and Audit Plan (hereinafter referred as 'the EM&A Plan') enclosed in the Project Profile – MTR Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works, which is registered in the Environmental Permit No. EP-440/2012 (hereinafter referred as 'the EP') (Register No.: PP-462/2012).

## 1.2 Environmental Status

- 1.2.1 As required in the EP, AECOM Consulting Services Limited (formerly known as "URS Hong Kong Limited") has been appointed as the Independent Environmental Checker under the Project (hereinafter referred as 'the IEC'), whereas Arcadis Design & Engineering Limited (hereinafter referred as 'Arcadis') (formerly known as 'Hyder Consulting Limited') has been appointed as the Environmental Team under the Project (hereinafter referred as 'the ET').
- 1.2.2 According to the EP Condition 3.2 (a) under Environmental Monitoring and Audit (EM&A) during the Construction Period, baseline monitoring has been completed and the required Baseline Monitoring Report has been submitted to EPD on 14 February 2014 prior to commencement of the works under the Project.

- 1.2.3 Status of relevant environmental permits, licences, and/or notifications on environmental protection for the Project is summarized in **Table 1-3-1**. They are detailed in **Appendix E**.

**Table 1-3-1 Summary of Status of Environmental Licenses and Permits**

<b>Item</b>	<b>Description</b>	<b>License/Permit Status</b>
1	Air Pollution Control (Construction Dust)	Notification Ref. 403252 dated 02 Jun 2016 has superseded Notification Ref. 365953 acknowledged on 21 Oct 2013.
2	Water Pollution Control Ordinance (Discharge License)	The discharge license Ref No. WT0019722-2014 granted on 01 Sep 2014 has superseded the discharge license Ref No. WT00018229-2014.
3	Billing Account for Disposal of Construction Waste	A/C Ref. 7018523 granted on 25 Oct 2013
4	Chemical Waste Producer Registration	Registration Ref. 5213-2214-M2446-16 granted on 4 Mar 2014
5	Construction Noise Permit	CNP No. GW-RE0064-17 approved on 6 February 2017 for operation of 4 submersible water pumps (electric) from 15 February to 14 August 2017.  CNP No. GW-RE0600-17 approved on 24 July 2017 for operation of 4 submersible water pumps (electric) from 15 August 2017 to 14 February 2018

## 1.3 Construction Activities

- 1.3.1 Construction activities undertaken during the Reporting Period are summarized in **Table 1-4-1**:

**Table 1-4-1 Construction Activities Undertaken during the Reporting Period**

<b>Item</b>	<b>Description</b>
1	Demolition the existing subway
2	Installation of strut and waling for C&C tunnel
3	Portal frame and steel rib installation for the mined tunnel
4	Construction of vertical blinding
5	Excavation of the mined tunnel
6	Excavation of C&C tunnel
7	Construction of C&C tunnel
8	Construction of the ABWF works
9	Connection of the E&M & BS works with TST station and the construction tunnel.
10	Preparation works for K11 breakthrough

## 2 EM&A REQUIREMENTS

### 2.1 Air Quality

2.1.1 Monitoring of 24-Hour Total Suspended Particulates (hereinafter referred as '24-Hr TSP') is required to be conducted on a weekly basis during construction period of the Project.

2.1.2 In case of non-compliance with the 24-Hr TSP criteria, the Event and Action Plan presented in **Appendix F** shall be triggered, i.e., a more frequent monitoring exercise adopting 1-Hr TSP monitoring undertaken when the highest dust impact occurs shall be conducted within 24 hours after the 24-Hr TSP exceedance is obtained. This additional 1-Hr TSP monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified.

#### *Action and Limit Levels*

2.1.3 The Action and Limit levels (hereinafter referred as 'the A/L Levels) at K11 have been established in the Baseline Monitoring Report in accordance with the derivation criteria specified in Section 3.7 of the EM&A Plan, which are summarized in **Table 2-1-1** as follows:

**Table 2-1-1 Derivation of Action and Limit Levels for Air Quality at K11,  $\mu\text{g}/\text{m}^3$**

Parameter	Action Level	Limit Level
24-Hr TSP	For baseline level $\leq 200 \mu\text{g}/\text{m}^3$ , Action level = (130% of baseline level + Limit level)/2	260
	For baseline level $> 200 \mu\text{g}/\text{m}^3$ , Action level = Limit level	
1-Hr TSP	For baseline level $\leq 384 \mu\text{g}/\text{m}^3$ , Action level = (130% of baseline level + Limit level)/2	500
	For baseline level $> 384 \mu\text{g}/\text{m}^3$ , Action level = Limit level	

2.1.4 The established A/L Levels for 24-Hr and 1-Hr TSP are summarized in Table 2-1-2 as follows:

**Table 2-1-2 Action & Limit Levels for Air Quality at K11,  $\mu\text{g}/\text{m}^3$**

Parameter	Action Level	Limit Level
24-Hr TSP	221.6	260
1-Hr TSP	373	500

#### *Event and Action Plan*

2.1.5 In case exceedances of Action and/or Limit levels for air quality occur, Event and Action Plan for Air Quality enclosed in **Appendix F** will be implemented.

#### *Environmental Mitigation Measures for Air Quality*

2.1.6 Although most of the construction works would be carried out underground, appropriate dust mitigation measures as stipulated in the EP, Project Profile, related environmental regulation including Air Pollution Control (Construction Dust) Regulation as well as those recommended in the Implementation Schedule should be implemented to control fugitive dust emission. The following key dust suppression measures are recommended:

- a) Decking over the excavation areas;
- b) Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;



- c) Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;
  - d) Cover all excavated or stockpiles of dusty material by impervious sheeting or spraying with water to maintain the entire surface wet;
  - e) Provision of vehicle washing facilities at the exit points of the site; and
- 2.1.7 Provision of tarpaulin covering for any dusty materials on a vehicle leaving the site. details of the implementation schedule for the required environmental mitigation measures are presented in **Appendix D**.

## 2.2 Construction Noise

### *Monitoring Parameters and Frequency*

2.2.1 **Table 2-2-1** summarizes the monitoring parameters and frequency for construction noise.

**Table 2-2-1 Noise Monitoring Parameters and Frequency**

Parameters	Frequency
Leq in 30 minutes	Once a week

### *Action and Limit Levels*

2.2.2 The Action and Limit levels (hereinafter referred as 'the A/L Levels) at K11 have been established in the Baseline Monitoring Report. They are summarized in Table 2-2-2 as follows:

**Table 2-2-2 Action and Limit Levels for Construction Noise**

Time Period	Action Level	Limit Level
0700-1900 hours on normal weekdays	When one valid documented complaint is received.	75

### *Event and Action Plan*

2.2.3 In case exceedances of Action and/or Limit levels for construction noise occur, the Event and Action Plan enclosed in **Appendix F** will be implemented.

### *Mitigation Measures for Construction Noise*

2.2.4 Although no residual noise impact would be generated after the proposed mitigation measures are in place, the general construction noise control measures stipulated in the EP, Project Profile as well as those recommended in the Implementation Schedule should be fully implemented in order to minimize noise impacts during the construction phase. They are summarized as follows:

- a) The Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted;
- b) The statutory and non-statutory requirements and guidelines shall be complied with;
- c) Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work;
- d) Working methods to minimize the noise impact on the surrounding NSRs shall be formulated and executed, and the implementation of these methods shall be monitored by experienced personnel with suitable training;

- e) Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical;
- f) Unused equipment shall be turned off;
- g) PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;
- h) All plant and equipment shall be maintained regularly; and
- i) Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable.

2.2.5 Details of the implementation schedule for the mitigation measures are presented in **Appendix D**.

## 2.3 Monitoring Schedules

2.3.1 Monitoring schedules for 24-Hr TSP and construction noise for the Reporting Period and the next Reporting Period are prepared and submitted to MTRC, IEC and MC prior to implementation via e-mail and/ or facsimile for ease of necessary inspection. Where amendment is necessary under ad hoc conditions, including actual and broadcast adverse weather, accidental instrument failures, etc., advanced notification is given at least 24 hours prior to implementation or as practical as possible.

# 3 MONITORING RESULTS

## 3.1 Air Quality

### *Monitoring Results*

3.1.1 24-Hr TSP monitoring during the Reporting Period was conducted following the agreed monitoring schedule.

3.1.2 24-Hr TSP results of the Reporting Period are summarized in the following **Table 3-1-1**. Graphical plots of the parameter are illustrated in **Appendix H**.

**Table 3-1-1 Summary of 24-Hr TSP Monitoring Results,  $\mu\text{g}/\text{m}^3$**

<b>Monitoring Date</b>	<b>24-Hr TSP</b>	<b>A/L Levels</b>	
1 June 2017	42.4	<b>Action Level: 221.6</b>	<b>Limit Level: 260</b>
5 June 2017	21.6		
12 June 2017	27.1		
19 June 2017	30.2		
26 June 2017	25.8		
3 July 2017	26.8		
10 July 2017	20.4		
17 July 2017	19.2		
24 July 2017	22.1		
1 August 2017	35.7		
7 August 2017	19.0		
14 August 2017	24.4		
21 August 2017	87.2		
28 August 2017	24.3		
<b>Mean (Min – Max)</b>	<b>30.4 (19.0-87.2)</b>		

## Discussion

- 3.1.3 **Table 3-1-1** demonstrates that all 24-Hr TSP results of the Reporting Period were fluctuated below the A/L Level, there were no Action Level or Limit Level exceedances recorded during the Reporting Period.
- 3.1.4 No Notice of Exceedances (hereinafter referred as 'NOE') and the associated NOE Investigation and remedial actions were required during the Reporting Period.

## 3.2 Construction Noise

### Monitoring Results

- 3.2.1 Construction noise monitoring during the Reporting Period was conducted following the agreed monitoring schedule.
- 3.2.2 Construction noise monitoring results of the Reporting Period are summarized in the following **Table 3-2-1**. Graphical plots of the parameter are illustrated in **Appendix H**.
- 3.2.3 Weather condition, including wind speeds and directions, during the monitoring period are recorded and shown in **Appendix G**.

**Table 3-2-1 Summary of Construction Noise Monitoring Results at K11, dB(A)**

Monitoring Date	Leq (30 min)	A/L Levels
1-Jun-17	69.2	<p><b>Action Level:</b> Any documented complaint Against construction noise.</p> <p><b>Limit Level: 75 dB(A)</b></p>
6-Jun-17	68.5	
14-Jun-17	69.8	
22-Jun-17	69.1	
27-Jun-17	69.7	
4-Jul-17	68.2	
11-Jul-17	67.9	
19-Jul-17	68.2	
25-Jul-17	72.9	
1-Aug-17	68.5	
8-Aug-17	67.7	
15-Aug-17	68.5	
22-Aug-17	65.5	
29-Aug-17	66.5	
<b>Mean (Min – Max)</b>	<b>68.9 (65.5-72.9)</b>	

## Discussion

- 3.2.4 No environmental complaint against construction noise was registered during the Reporting Period, whereas Table 3-2-1 demonstrates that all construction noise results of the Reporting Period fell below the Limit Level of the parameter.
- 3.2.5 Neither NOE nor NOE investigation and the associated remedial actions were required during the Reporting Period.
- 3.2.6 The Contractor was reminded to pay extra attention to noisy construction activities within the Reporting Month and the coming month. The ET will liaise closely with the Contractor on any unusual level of noise recorded in the upcoming month.

- 3.2.7 It is re-instated that adequate mitigation measures should be implemented during the noisy construction activities in order to alleviate noise nuisance generated from the Project related construction activities.

### *Weather Conditions*

- 3.2.8 No weather conditions and any other factors were identified to have significant effects on the monitoring results of air quality and construction noise during the Reporting Period.
- 3.2.9 Weather information during the Reporting Period which is extracted from Hong Kong Observatory King's Park Weather Station is enclosed for reference in **Appendix G**.

## 3.3 Conclusions and Recommendations

### *Conclusions*

- 3.3.1 No exceedances of A/L Levels of air quality and no exceedances of Action Level of construction noise were registered during the Reporting Period.
- 3.3.2 No air quality related complaint was recorded during the Reporting Period.

### *Recommendations*

- 3.3.3 Full implementation of the environmental mitigation measures, which are required in the EM&A Plan and summarized in Implementation Schedule of Appendix D, is recommended. Where necessary, proper maintenance and improvement of the implemented mitigation measures are reminded.
- 3.3.4 Construction dust shall be suppressed during dusty construction activities under dry and windy conditions.
- 3.3.5 Construction noise shall be eliminated to avoid adverse impacts on the nearby sensitive receivers.

## 4 ENVIRONMENTAL AUDIT

### 4.1 Site Inspection

- 4.1.1 Weekly site inspections during the Reporting Period are conducted by MTRC, MC and ET, whereas monthly site inspections of the Reporting Period were jointly conducted by the IEC, MTRC, MC and ET. The site inspection follows strictly the agreed Site Inspection Checklist, which covers all the site audit requirements stipulated in the EM&A Plan, PS and all relevant environmental laws.
- 4.1.2 The completed Site Inspection Checklists are distributed to all relevant parties upon completion of the site inspection for agreement and signature of the relevant parties and, where appropriate, for implementation of the recommended corrected actions to promptly rectify the situation.
- 4.1.3 There were 13 site inspections conducted within the Reporting Period. Deficiencies or findings of the site audits and the associated follow up actions are summarized in **Table 4-1-1**:
- 4.1.4 No deficiencies or non-compliance of environmental mitigation measures or adverse environmental impacts were recorded during the Reporting Period. However, during the joint site inspection on 18 July 2017, chemical containers were found without drip trays. As preventive action to avoid possible spillage of the chemicals was promptly taken by the Contractor upon notification, situation was rectified in-situ and the case was hence closed. No corrective actions were therefore required during the Reporting Period.

**Table 4-1-1 Summary of Findings and Follow-Up Actions of the Site Inspection**

Date	Deficiencies or findings	Follow-Up Action
06 - June -2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b>	
13 - June -2017	No deficiency was observed on site.	Not required.
	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
20 - June -2017	<b>Observation(s) on the day of inspection</b>	
	No deficiency was observed on site.	Not required.
	<b>Follow-up item(s)</b>	
27 - June -2017	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b>	
	No deficiency was observed on site.	Not required.
04 - July -2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b>	
11 - July -2017	No deficiency was observed on site.	Not required.
	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b>	
	No deficiency was observed on site.	Not required.

Table 4-1-1 (Continued)

18 - July -2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b> Chemical containers were found without drip trays. As preventive action to avoid possible spillage of the chemicals was promptly taken by the Contractor upon notification, situation was rectified in-situ and the case was hence closed.	Not required.
25 - July -2017	<b>Follow-up item(s)</b>	
	No follow-up item.	<b>Not required.</b>
	<b>Observation(s) on the day of inspection</b> No deficiency was observed on site.	<b>Not required.</b>
01 - August - 2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b> No deficiency was observed on site.	Not required.
08 - August - 2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b> No deficiency was observed on site.	Not required.
15 - August - 2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b> No deficiency was observed on site.	Not required.
22 -August -2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b> No deficiency was observed on site.	Not required.
30 -August -2017	<b>Follow-up item(s)</b>	
	No follow-up item.	Not required.
	<b>Observation(s) on the day of inspection</b> No deficiency was observed on site.	Not required.

## 4.2 Compliance with Legal/ Contractual Requirements

- 4.2.1 Construction activities under the Project must comply with all environmental protection and pollution control laws in Hong Kong, as well as the contractual requirements of the Project. **Table 4-2-1** summarizes breaches of legal and contractual requirements.

**Table 4-2-1 Summary of Breaches of Legal and Contractual Requirements**

Month	No. of Breaches	Cumulative no. of Breaches
June 2017	0	0
July 2017	0	0
August 2017	0	0

## 4.3 Environmental Complaints

- 4.3.1 Environmental complaints are handled following closely the flow chart of complaint response procedure which is enclosed in **Appendix I**.
- 4.3.2 No complaint was received during the Reporting Period.
- 4.3.3 Environmental complaints registered during the Reporting Period and cumulative statistics of environmental complaints are summarized in **Table 4-3-1** below:

**Table 4-3-1 Summary of Complaint**

Month	No. of Complaint	Cumulative no. from March 2014 to the Reporting Period
June 2017	0	5
July 2017	0	5
August 2017	0	5

## 4.4 Notification of Summons/Successful Prosecutions

- 4.4.1 Notification of summons and successful prosecutions registered during the Reporting Period are summarized in **Table 4-4-1** below:

**Table 4-4-1 Summary of Summon and Successful Prosecutions**

Month	Number of Issue	Cumulative no. from March 2014 to the Reporting Period
June 2017	0	0
July 2017	0	0
August 2017	0	0

## 5 WASTE MANAGEMENT

### 5.1 Waste Management

- 5.1.1 Despite small scale of the Project and the amount of C&D material that needs to be hauled off site and disposed of is anticipated not to be significant, 3-R waste management i.e. Reduce, Reuse and Recycle, is adopted in order to minimize adverse environmental impacts to be generated from construction of the Project.
- 5.1.2 Waste management under the Project is performed in accordance with the Waste Management Plan, which has been prepared for implementation of the construction waste mitigation measures in compliance with the requirements stipulated in the EM&A Plan, PS, Waste Disposal Ordinance and the associated subsidiary regulations.

### 5.2 Waste Management Record

- 5.2.1 Updated waste management status is detailed in **Appendix J**, where the 3-R status of the construction waste generated from construction of the Project during the Reporting Period is presented.

## 6 FUTURE ENVIRONMENTAL ISSUES

### 6.1 Key Environmental Issues

- 6.1.1 Future key environmental issues include:
- 1) Air quality in particular construction dust during dusty construction activities on site, e.g. handling of dusty materials under dry and windy conditions, under dry and windy conditions;
  - 2) Construction noise during noisy activities; and
  - 3) Site surface water run-off and construction wastewater discharge.

### 6.2 Mitigation Measures

- 6.2.1 To avoid potential adverse environmental impacts of the future key environmental issues stated above, full implementation of the mitigation measures as stipulated in the Implementation Schedule shown in **Appendix D** is required.
- 6.2.2 Mitigation measures for air quality, construction noise and water quality implemented to date shall be properly maintained.
- 6.2.3 Where appropriate, improvement of the implemented mitigation measures is reminded to ensure effectiveness of the mitigation measures.
- 6.1.1 Future key environmental issues include:
- 1) Air quality, in particular construction dust during dusty construction activities, e.g. handling of dusty materials under dry and windy conditions;
  - 2) Construction noise during noisy activities; and
  - 3) Site surface water run-off and construction wastewater discharge.



## 7 COMMENTS AND RECOMMENDATIONS

### 7.1 Conclusion

- 7.1.1 No deficiencies or non-compliance of environmental mitigation measures or adverse environmental impacts were recorded during the Reporting Period. However, during the joint site inspection on 18 July 2017, chemical containers were found without drip trays. As preventive action to avoid possible spillage of the chemicals was promptly taken by the Contractor upon notification, situation was rectified in-situ and the case was hence closed. No corrective actions were therefore required during the Reporting Period.
- 7.1.2 In addition, no remedial actions were required as no notification of summons and successful prosecutions were reported during the Reporting Period.

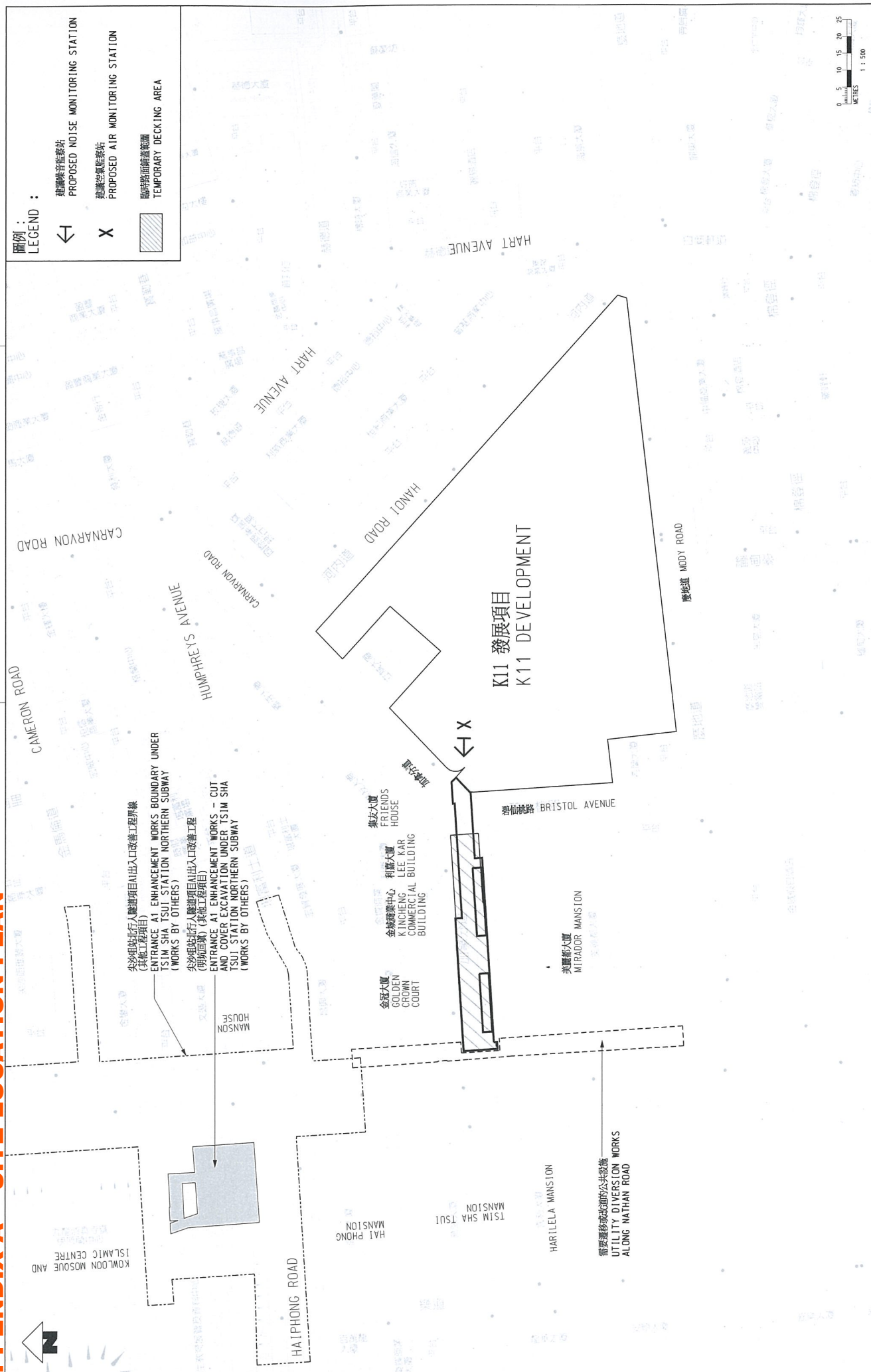
### 7.2 Recommendations

- 7.2.1 Full implementation of the environmental mitigation measures stipulated in the EM&A Plan and summarized in **Implementation Schedule** of **Appendix D**, are recommended. Where necessary, proper maintenance and improvement of the implemented mitigation measures are reminded.
- 7.2.2 As some noisy construction activities will be conducted during the Reporting Period, adequate mitigation measures should be implemented in order to alleviate noise nuisance.
- 7.2.3 In addition, suppression of construction dust is required during dusty construction activities, especially dry and windy conditions.
- 7.2.4 Furthermore, monitoring of site water runoff is reminded to prevent any direct water discharge off site, especially when water usage is high during the construction period. When necessary, the Contractor is reminded to apply additional precautionary measures to prevent any possible environmental deficiency.

# APPENDICES

<b>APPENDIX A</b>	<b>SITE LOCATION PLAN</b>
<b>APPENDIX B</b>	<b>MANAGEMENT STRUCTURE</b>
<b>APPENDIX C</b>	<b>CONSTRUCTION PROGRAMME</b>
<b>APPENDIX D</b>	<b>IMPLEMENTATION SCHEDULE</b>
<b>APPENDIX E</b>	<b>STATUS OF ENVIRONMENTAL LICENSES AND PERMITS</b>
<b>APPENDIX F</b>	<b>EVENT AND ACTION PLAN</b>
<b>APPENDIX G</b>	<b>WEATHER INFORMATION EXTRACTED FROM HK OBSERVATORY</b>
<b>APPENDIX H</b>	<b>MONITORING RESULTS AND PLOTS</b>
<b>APPENDIX I</b>	<b>FLOW CHART FOR HANDLING ENVIRONMENTAL COMPLAINTS</b>
<b>APPENDIX J</b>	<b>WASTE MANAGEMENT RECORDS</b>

# APPENDIX A SITE LOCATION PLAN



**圖例 :**  
 建議噪音監察站 PROPOSED NOISE MONITORING STATION  
 建議空氣監察站 PROPOSED AIR MONITORING STATION  
 臨時路面鋪設範圍 TEMPORARY DECKING AREA



**CONSULTANCY AGREEMENT NO. NEX/1049**  
**DETAILED DESIGN FOR CARNARVON ROAD SUBWAY**  
**AIR AND NOISE MONITORING LOCATIONS**  
**空氣及噪音監察站位置**

**MTR**  
**TST STATION CARNARVON ROAD SUBWAY**  
 由港鐵有限公司  
 委託 Mott MacDonald Ltd  
 進行工程設計及監工

**Mott MacDonald**

DRAWN	DESIGNED	HO
CHECKED	---	---
APPROVED	---	---
DATE	---	---

BY	DATE	APPROVED	HO
---	---	---	---

REV	DATE	APPROVED	BY	DESCRIPTION
A	---	---	---	PROJECT PROFILE

REV	DATE	APPROVED	BY	DESCRIPTION
---	---	---	---	---

PLANT DRAW: C:\MTR\A3\_BM\COLL\DH  
 MODEL NAME: D:\G44  
 PLOTTED BY: H57494  
 PRINTED BY: H57494  
 08/02/12 16:49:22

FILE NAME: A:\72593\K11\PROJ\TST STATION\K11\A3\_BM\COLL\DH  
 3/14/09

# APPENDIX B MANAGEMENT STRUCTURE

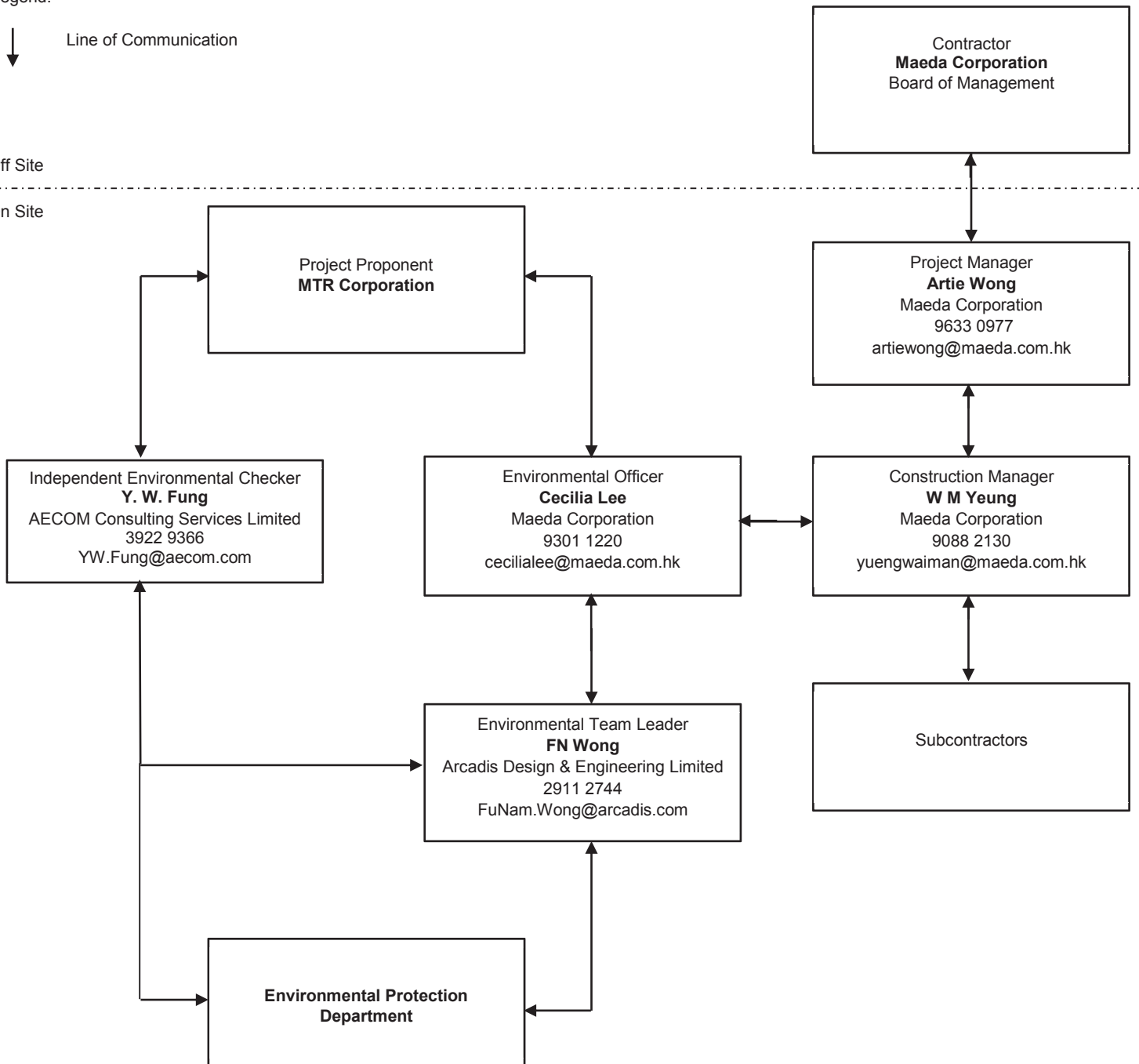
## Project Organization Chart in Environmental Management (Rev.04)

Legend:

↓ Line of Communication

Off Site

On Site



Note: In Compliance with

i) Clause.1.3 of Environmental Monitoring and Audit Manual (Appendix VII of Project Profile PP462/2012)

**APPENDIX C**

**CONSTRUCTION PROGRAMME**









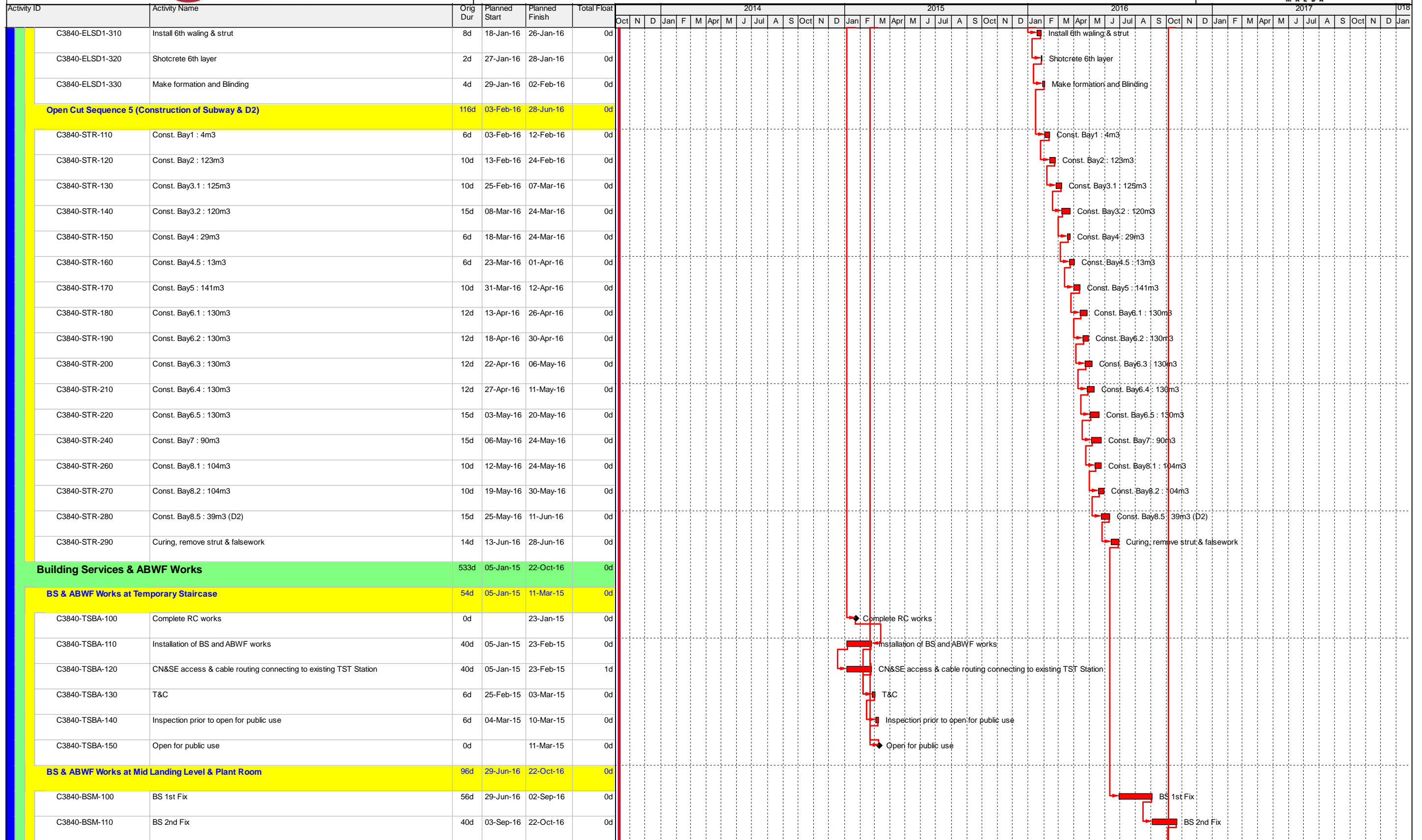








CONTRACT C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway



█ Actual Work     ◆ Milestone  
█ Remaining Work  
█ Critical Remaining Work

Data Date: 11-Oct-13

**Preliminary Master Programme**

Extract Critical Path 2

Maeda/P/PMP/2

Date	Revision	Checked	Approved
27-Feb-14	REV 2	BG	AW



## APPENDIX D IMPLEMENTATION SCHEDULE (1 of 2)

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to Implement the measure	Relevant requirements or standards for the measure to achieve
	<b>Noise Impact</b>					
S.3.1	Use of quieter plant	To minimise construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance
S.3.1	Use of noise enclosure and movable barrier <ul style="list-style-type: none"> <li>• movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME;</li> <li>• noise enclosure can achieve 15dB(A) reduction for PME;</li> <li>• A typical design barrier with a steel frame of vertical / cantilever type would be adopted and located close to the noise generating part of PME;</li> <li>• Barrier material of surface mass in excess of 7kg/m<sup>2</sup> shall be required to achieve the maximum screening effect (and minimum 10kg/m<sup>2</sup> for noise enclosure);</li> <li>• The length of barrier should generally be at least five times greater than its height and the minimum height of a barrier should be such that no part of the noise source will be visible from the noise sensitive receiver being protected.</li> </ul>	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93, Noise Control Ordinance and EIAO Guidance Note NO. 9/2010
S.3.1	General Construction Noise Control Measures <ul style="list-style-type: none"> <li>• The Code of Practice on Good Management Practice</li> </ul>	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance
	to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted; <ul style="list-style-type: none"> <li>• The statutory and non-statutory requirements and guidelines shall be complied with;</li> <li>• Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work;</li> <li>• Working methods to minimize the noise impact on the surrounding NSRs shall be formulated and executed, and the implementation of these methods shall be monitored by experienced personnel with suitable training;</li> <li>• Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical;</li> <li>• Unused equipment shall be turned off;</li> <li>• PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;</li> <li>• All plant and equipment shall be maintained regularly; and</li> <li>• Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable.</li> </ul>					
	<b>Air Quality Impact</b>					
S.3.2	Construction Dust Control Measures <ul style="list-style-type: none"> <li>• Decking will be provided subsequent to the completion of surface excavation works. The duration</li> </ul>	To minimise the dust impacts arising from the construction works	Contractor	Work site	Construction Stage	Air Pollution Control (Construction Dust) Regulation
	of decking is around 13 months after surface excavation works; <ul style="list-style-type: none"> <li>• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;</li> <li>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;</li> <li>• Cover all excavated or stockpile of dusty material by impervious sheeting or spraying with water to maintain the entire surface wet;</li> <li>• Provision of vehicle washing facilities at the exit points of the site; and</li> <li>• Provision of tarpaulin covering of any dusty materials on a vehicle leaving the site.</li> </ul>					

## APPENDIX D IMPLEMENTATION SCHEDULE (2 of 2)

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	<b>Water Quality Impact</b>					
S.3.3	<p><b>Construction Water Quality Impact Measures</b></p> <ul style="list-style-type: none"> <li>The Contractor should design and implement all the mitigation measures and practices specified in the ProPECC PN 1/94 "Construction Site Drainage" and "Recommended Pollution Control Clauses for Construction Contracts" issued by EPD.</li> <li>All runoffs arising from the construction site should be properly collected and treated to ensure the discharge standards as stipulated in WPCO are met. Silt trap and oil interceptor should be provided to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before being pumped to the public stormwater drainage system. The silt traps and oil interceptors should be cleaned and maintained regularly.</li> </ul>	To reduce water quality impact induced by the construction work	Contractor	Work Site	Construction Stage	ProPECC PN1/94; Water Pollution Control Ordinance
	<ul style="list-style-type: none"> <li>Any foul effluent should not be discharged into any public sewer and stormwater drain, unless an effluent discharge permit is obtained under the WPCO by the Contractor.</li> <li>Site toilet facilities, if needed, should be chemical toilets or should have the foul water effluent directed to a foul sewer.</li> </ul>					
	<b>Waste Management</b>					
S.3.4	<p><b>Construction Waste Management Measures</b></p> <ul style="list-style-type: none"> <li>Excavated material should be reused on site as far as possible to minimise off-site disposal. Scrap metals or abandoned equipment should be recycled if possible.</li> <li>Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner.</li> <li>The Contractor should adopt a trip ticket system for the disposal of C&amp;D materials to any designated public filling facility and/or landfill. Independent audits of the Contractor and resident site staff will be undertaken to ensure that the correct procedures are being followed.</li> <li>Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> <li>All general refuse should be segregated and stored in enclosed bins or compaction units and waste separation facilities for paper, aluminium cans, plastic bottles etc. should be provided to facilitate reuse or</li> </ul>	To adopt waste management measures in the way of avoiding, minimising, reusing and recycling so as to reduce waste generation	Contractor	Work Site	Construction Stage	Waste Disposal Ordinance (Cap. 54); Waste Disposal (Chemical Waste) (General) Regulation; ETWB TCW No. 31/2004; ETWB TCW No. 19/2005.
	recycling of materials and their proper disposal.					
	<b>Landscape and Visual Impact</b>					
S.3.5	<p><b>Landscape and Visual Measures</b></p> <ul style="list-style-type: none"> <li>Screening of construction works by hoardings/noise barriers around works area with visually unobtrusive colours</li> </ul>	To reduce visual impact by construction works.	Contractor	Temporary Storage Area at Salisbury Road	Construction Stage	EIAO
S.3.5	<ul style="list-style-type: none"> <li>Reinstating the affected amenity planting area at Salisbury Road after the completion of works</li> </ul>	To prevent loss of planter after construction	Contractor	Temporary Storage Area at Salisbury Road	Operation Stage	ETWB TCW No. 2/2004

# APPENDIX E STATUS OF ENVIRONMENTAL LICENSES AND PERMITS



Maeda Corporation

Contract No. C3840-13C

Tsim Sha Tsui Station Carnarvon Road Subway

Last Update: 25-July-2017

## Licence Summary

Item No.	Our Ref.	Govt. Ord.	Type? (Licence / Permit / Account / Notification / Registration & etc.)	Description	Submission	Ref. No	Date of Submission (to EPD) (DD-MM-YYYY)	Date of Approval / Receipt (from EPD) (DD-MM-YYYY)	Date of Activation (DD-MM-YYYY)	Date of Expiry (DD-MM-YYYY) Green = expire next mth; Yellow = expire this wk; Red = Expired	Description	Remarks
000	000	EIAO	Permit	Environmental Permit	N/A	AEP-440/2012	N/A	N/A	18 - 07 - 2012	N/A	Baseline, Air & Noise Impact Monitoring	
001	APCO #002	APCO	Notification	Construction Dust Notification	Form NB – Notification S3(3) of APCO (Construction Dust)	403252	27 - 05 - 2016	02 - 06 - 2016	01 - 02 - 2014	31 - 10 - 2017	Demolition of a Building	Change of anticipated date of completed is notified
001	APCO #002	APCO	Notification	Construction Dust Notification	Form NB – Notification S3(3) of APCO (Construction Dust)	403252	27 - 05 - 2016	02 - 06 - 2016	01 - 08 - 2014	31 - 08 - 2018	Work carried out in any part of a tunnel that is within 100m of any exit to the open air	Change of anticipated date of completed is notified
001	APCO #002	APCO	Notification	Construction Dust Notification	Form NB – Notification S3(3) of APCO (Construction Dust)	403252	27 - 05 - 2016	02 - 06 - 2016	01 - 01 - 2016	31 - 08 - 2018	Construction of the Superstructure of a Building	Change of anticipated date of completed is notified
001	APCO #002	APCO	Notification	Construction Dust Notification	Form NB – Notification S3(3) of APCO (Construction Dust)	403252	27 - 05 - 2016	02 - 06 - 2016	01 - 11 - 2016	28 - 02 - 2019	Road Construction Work	Change of anticipated date of completed is notified
002	APCO #002	WDO	Account	Construction Waste Billing Account	EPD-211 (Form 1) Application for a Billing Account for Disposal of Construction Waste	7018523	18 - 10 - 2013	25 - 10 - 2013	25 - 10 - 2013	N/A	Disposal of C&D Waste	Application No. WFG12765
003	WPCO #002	WPCO	Licence	Water Discharge Licence	EPD-117 (Form A) Application for a Licence of Water Discharge	WT00019722-2014	24 - 07 - 2014	01 - 09 - 2014	01 - 09 - 2014	31 - 03 - 2019	Quarterly Report FlowRate 25m3/d, pH 6-9, SS 30mg/L, COD 80mg/L	
004	CWP #001	WDO	Registration	Chemical Waste Producer	EPD-129 Application for Registration as a Chemical Waste Producer	5213-2214-M2446-16	15 - 01 - 2014	04 - 03 - 2014	04 - 03 - 2014	N/A	Surplus paint, spent lubricating oil, spent battery	
005	CNP#007	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit	OSS Ref: 002058279 Permit: GW-RE0064-17	18 - 01 - 2017	06 - 02 - 2017	15 - 02 - 2017	14 - 08 - 2017	Apply for 4nos Submersible Water pump (Electric) w/ whole site area	
005	CNP#008	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit	OSS Ref: 002062679 Permit: GW-RE0600-17	12 - 07 - 2017	21 - 07 - 2017	15 - 08 - 2017	14 - 02 - 2018	Apply for 4nos Submersible Water pump (Electric) w/ whole site area	



## APPENDIX F EVENT AND ACTION PLAN (1 of 2)

Event and Action Plan for Construction Noise				
Event	ET	IEC	ER	Action Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor.</li> <li>2. Carry out investigation.</li> <li>3. Report the results of investigation to the IEC and Contractor.</li> <li>4. Discuss with the Contractor and formulate remedial measures</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analyzed result submitted by ET.</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance</li> <li>2. Notify Contractor</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC</li> <li>2. Implement noise mitigation proposals</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, EPD and Contractor, and follow other actions</li> <li>2. Identify source</li> <li>3. Repeat measurement to confirm findings</li> <li>4. Increase monitoring frequency</li> <li>5. Check Contractor's working procedures to determine possible mitigation to be implemented</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD,</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedances</li> <li>2. Notify Contractor</li> <li>3. Require Contractor to propose remedial measures</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notifications</li> <li>3. Implement the agreed proposals</li> <li>4. Revise and resubmit proposals if problem still not under control</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</li> </ol>
	<ol style="list-style-type: none"> <li>ER informed of the results</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>		abated.	

### Event and Action Plan for Air Quality

Action Level				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. If valid, inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate</li> </ol>

## APPENDIX F EVENT AND ACTION PLAN (2 of 2)

Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and EPD;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Discuss with IEC and Contractor on remedial action required;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervisor implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measure properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial action to IEC within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>
Limit Level				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform ER and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and the Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify sources;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with IEC, agree with the Contractor on</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of</li> </ol>
	<ol style="list-style-type: none"> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

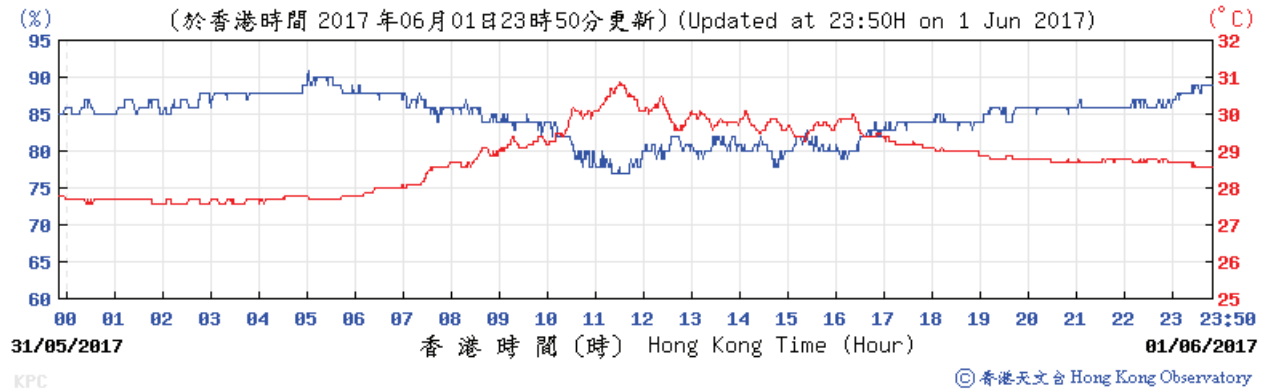
## APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (1)

<b>Daily Total Rainfall at King's Park HKO Weather Monitoring Station - June 2017</b>				
Day	Total Rainfall, mm	24-hr TSP	Noise	Remarks
1	Trace	✓	✓	The weather was fine without rainfall on site during noise monitoring.
2	Trace			
3	-			
4	Trace			
5	Trace	✓		
6	Trace		✓	The weather was fine without rainfall on site during noise monitoring.
7	4.3			
8	-			
9	1.1			
10	Trace			
11	Trace			
12	37.7	✓		
13	219.4			
14	15.6		✓	The weather was fine without rainfall on site during noise monitoring.
15	14.5			
16	13.5			
17	138.0			
18	24.2			
19	32.6	✓		
20	24.8			
21	95.9			
22	Trace		✓	The weather was fine without rainfall on site during noise monitoring.
23	10.5			
24	18.3			
25	4.2			
26	0.1	✓		
27	1.3		✓	The weather was fine without rainfall on site during noise monitoring.
28	-			
29	-			
30	-			
Mean/Total	656.0			

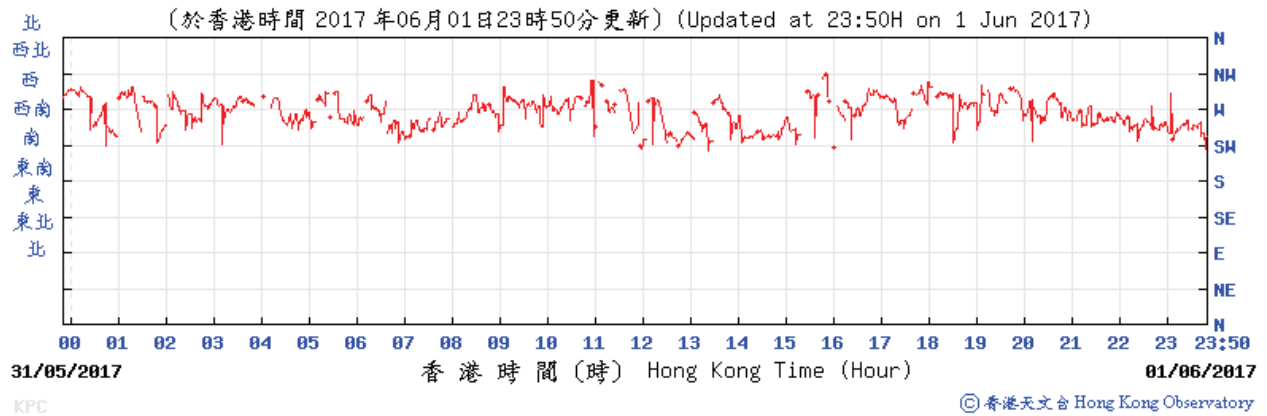
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (2)

## King's Park Weather Station – 01 June 2017

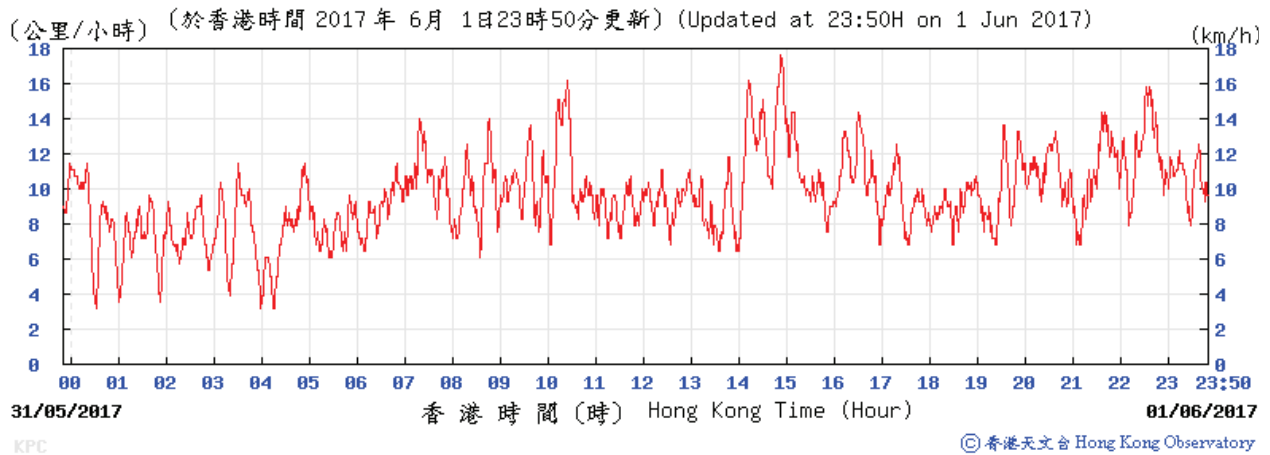
Temperature/Humidity:



Wind Direction:



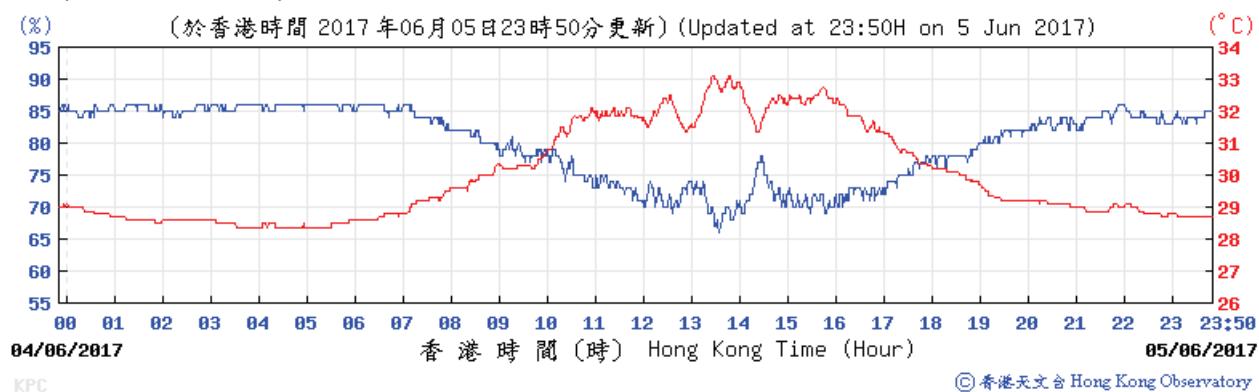
Wind Speed:



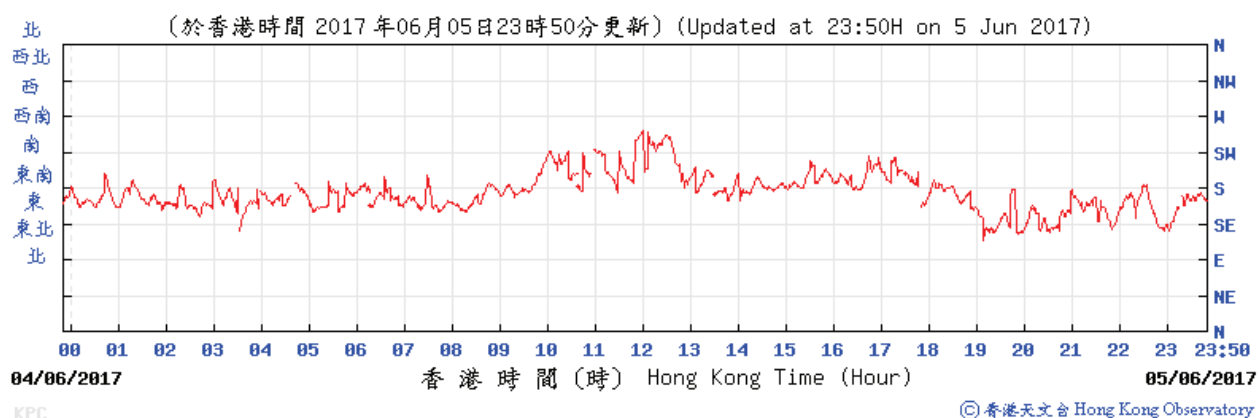
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (3)

## King's Park Weather Station – 05 June 2017

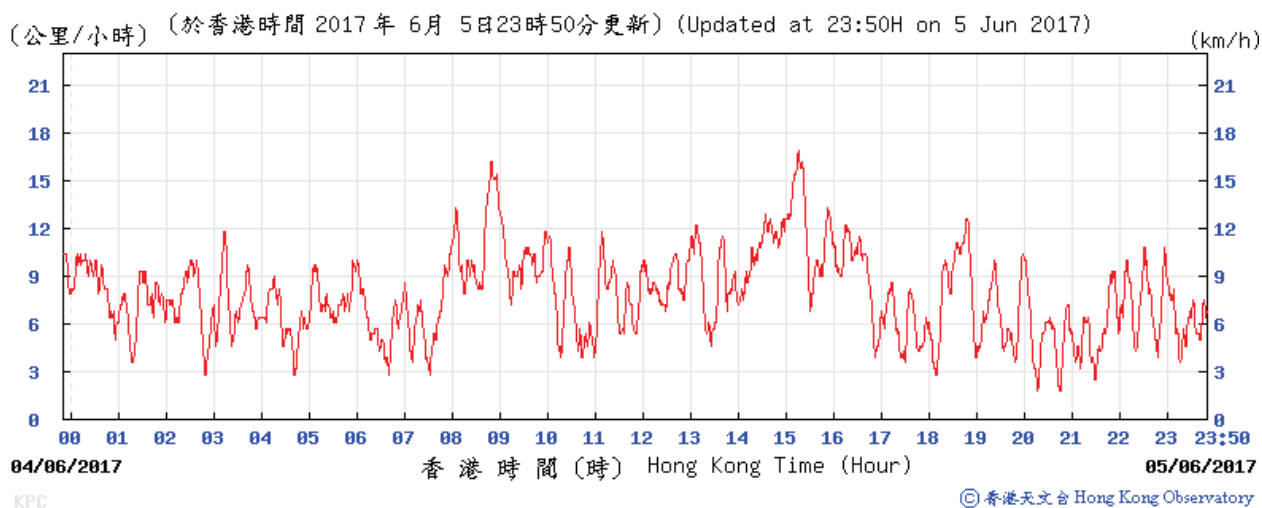
Temperature/Humidity:



Wind Direction:



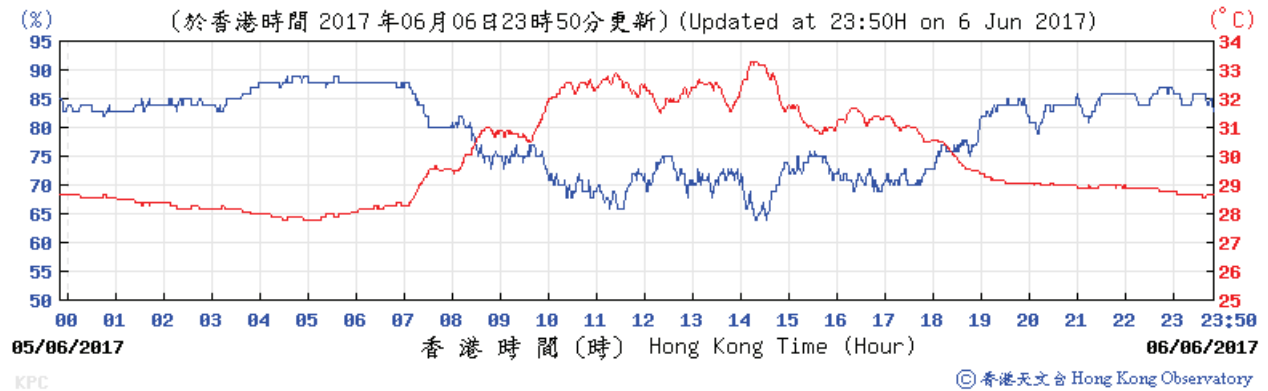
Wind Speed:



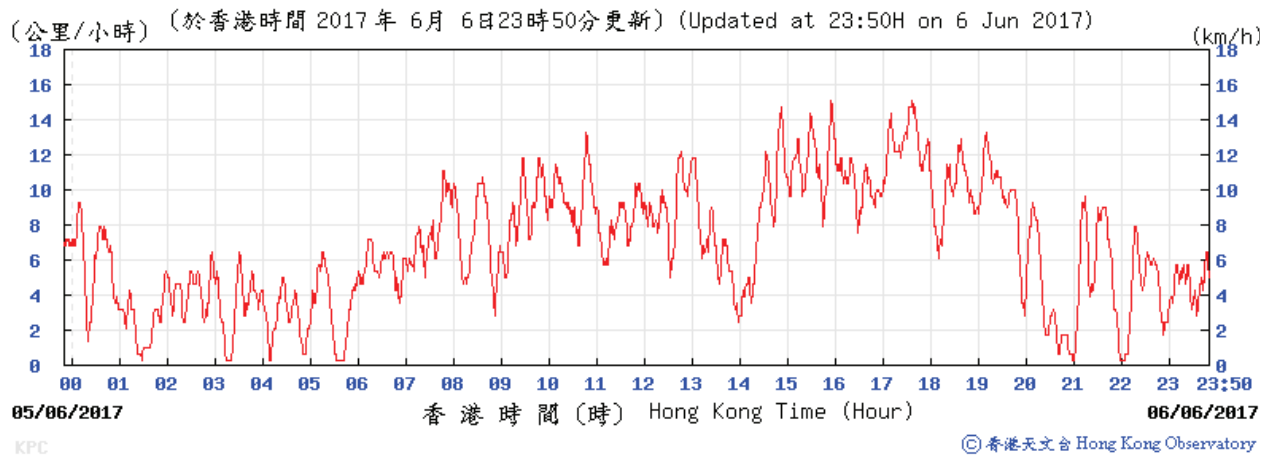
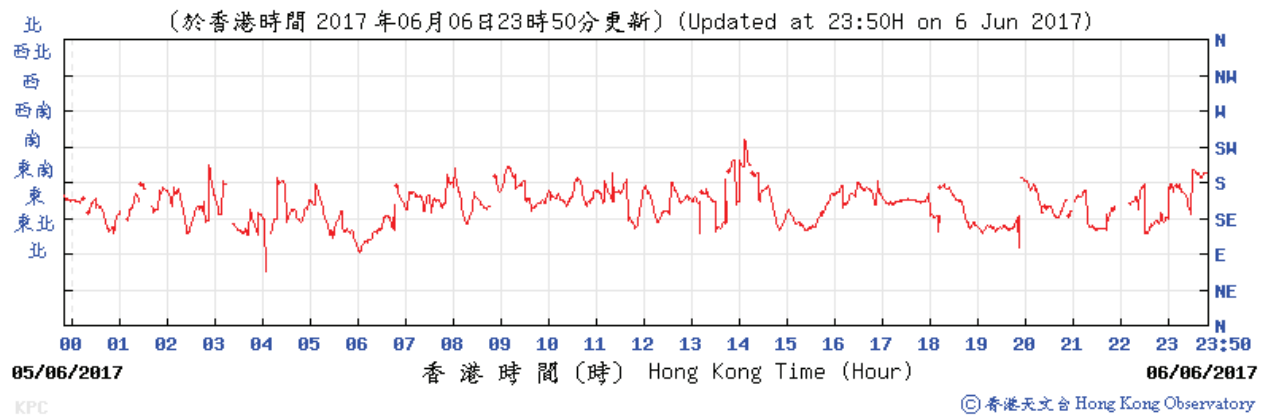
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (4)

## King's Park Weather Station – 06 June 2017

Temperature/Humidity:



Wind Direction:

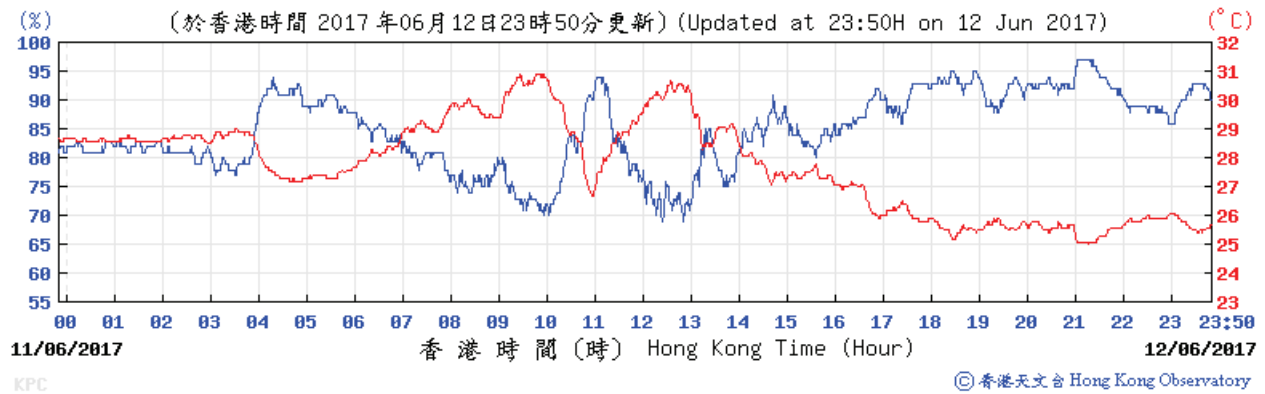


Wind Speed:

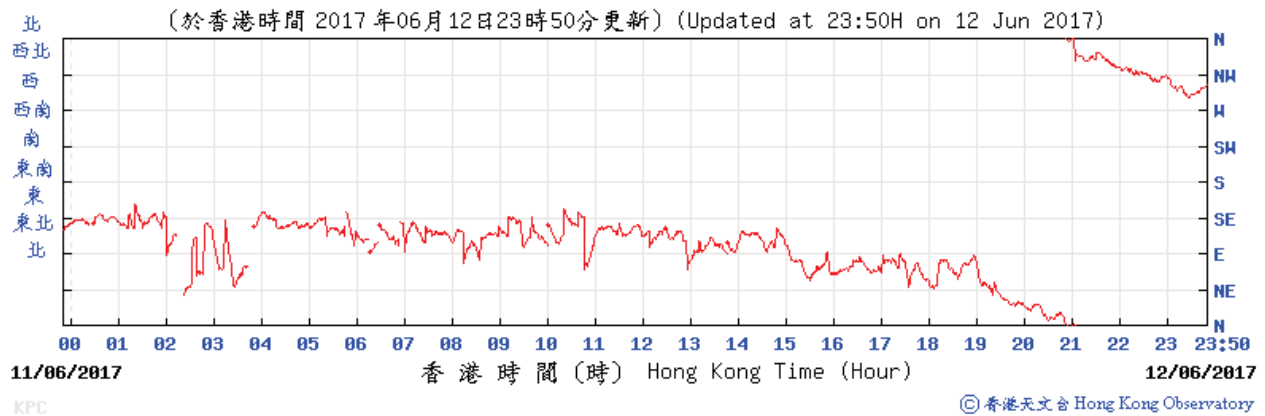
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (5)

## King's Park Weather Station – 12 June 2017

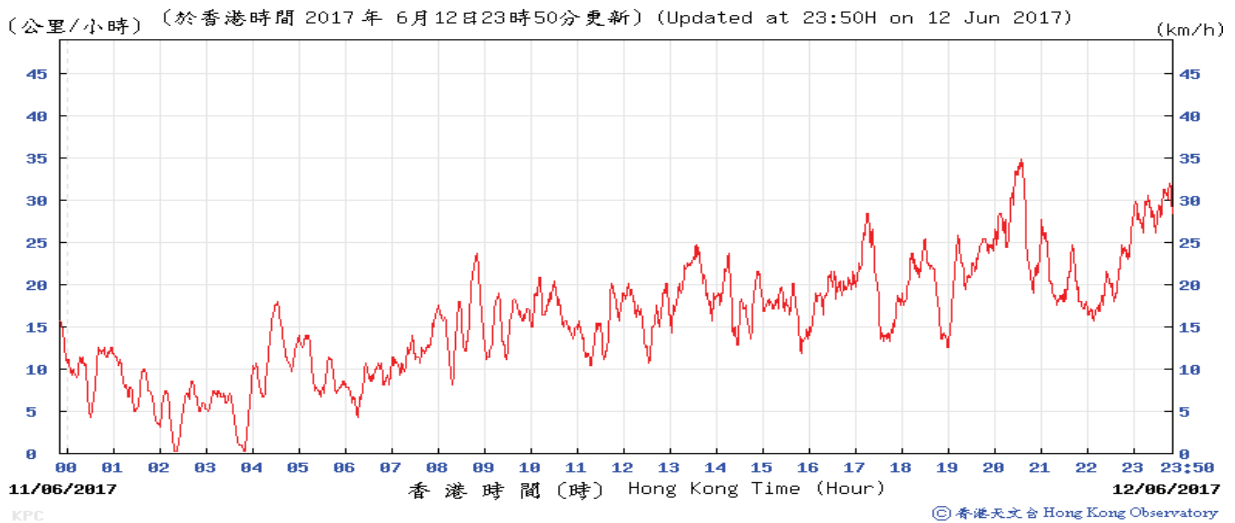
Temperature/Humidity:



Wind Direction:



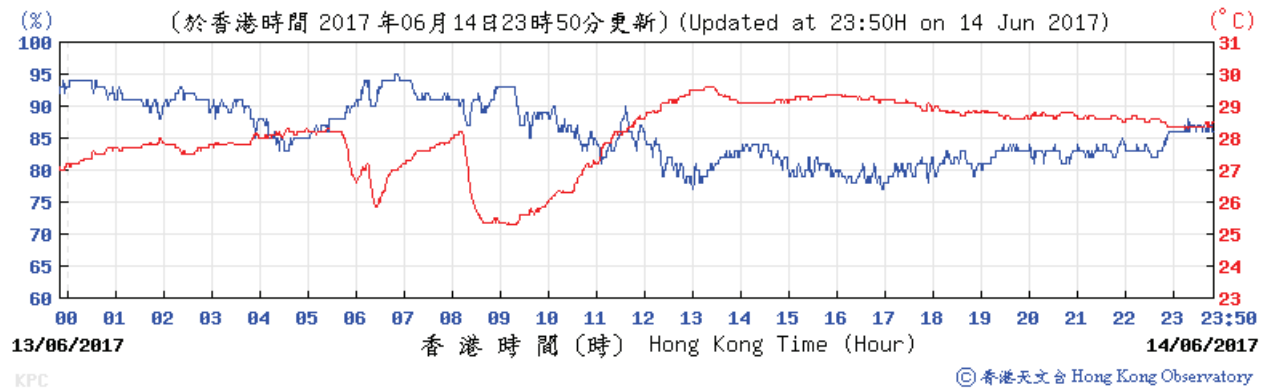
Wind Speed:



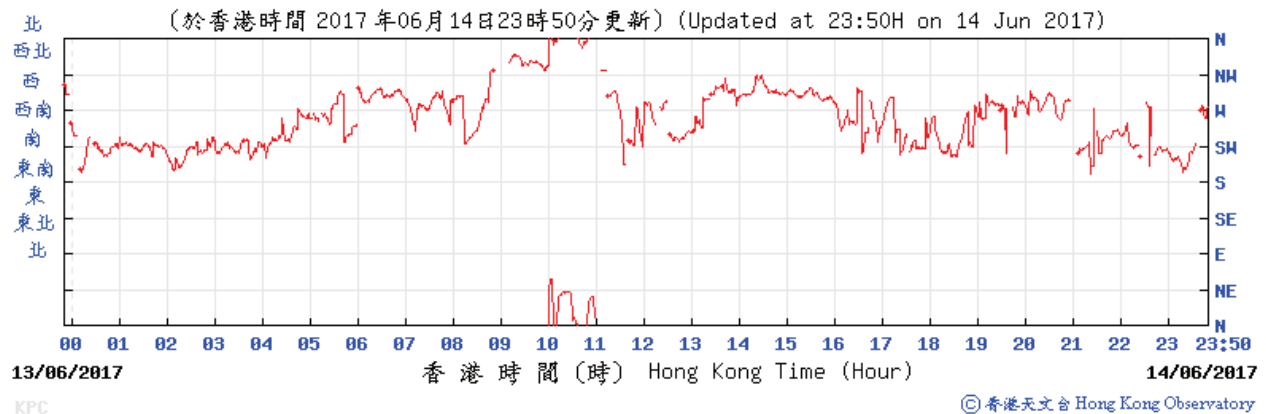
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (6)

## King's Park Weather Station – 14 June 2017

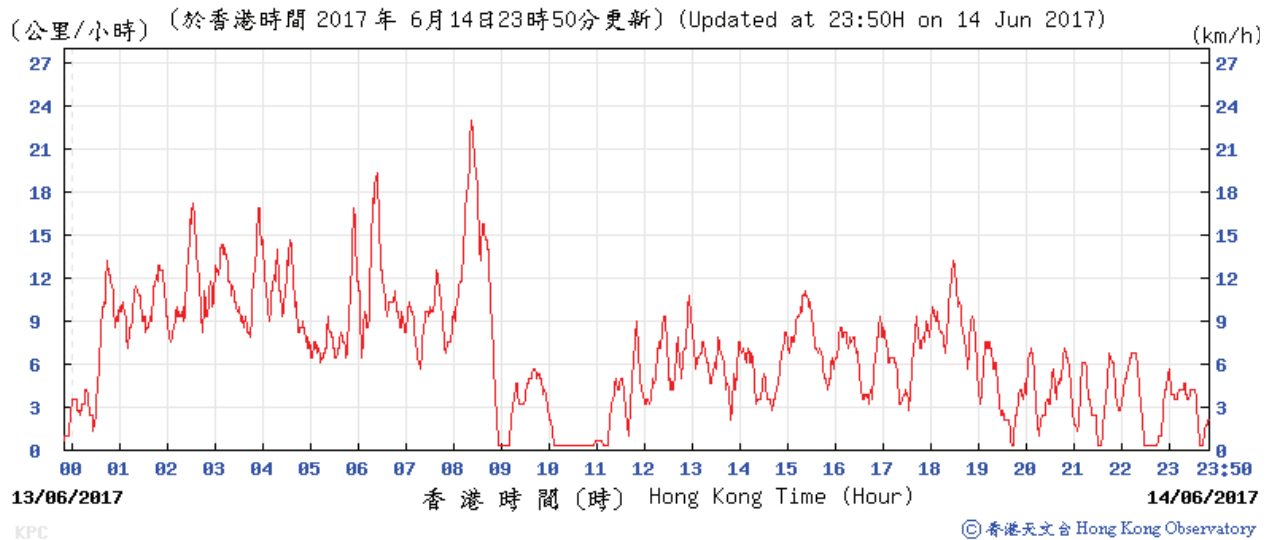
Temperature/Humidity:



Wind Direction:



Wind Speed:

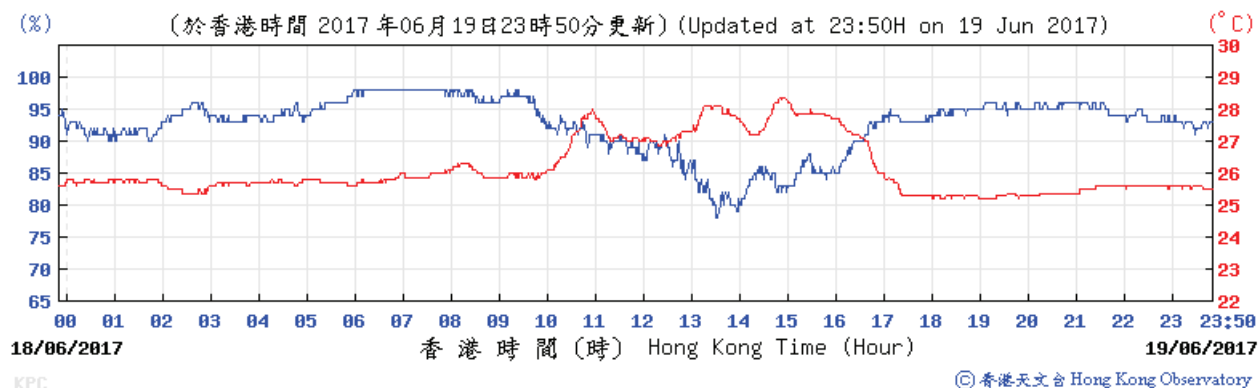




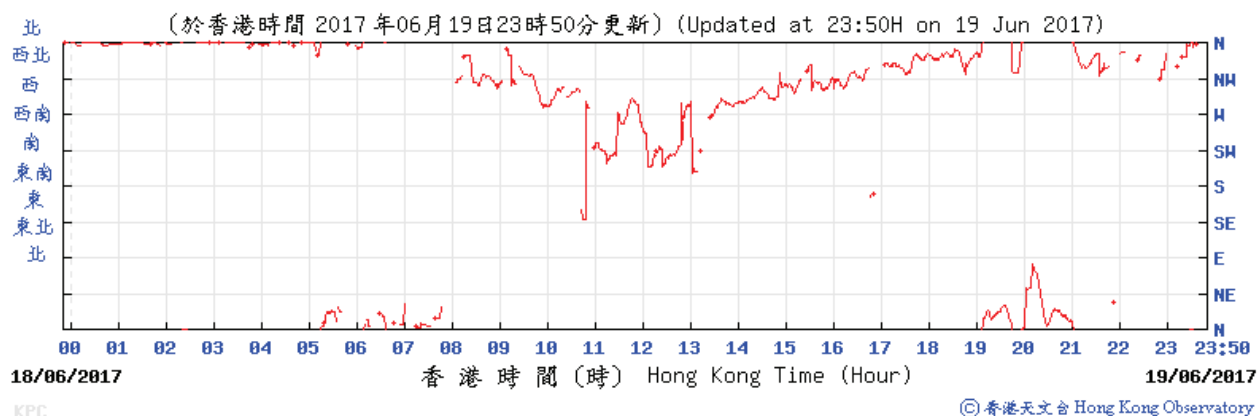
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (7)

## King's Park Weather Station – 19 June 2017

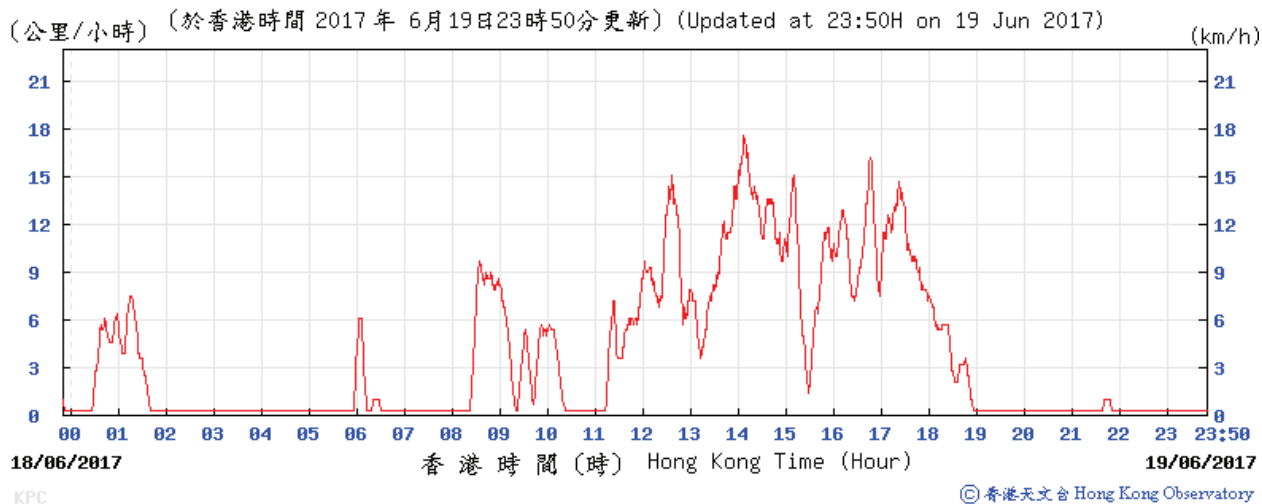
Temperature/Humidity:



Wind Direction:



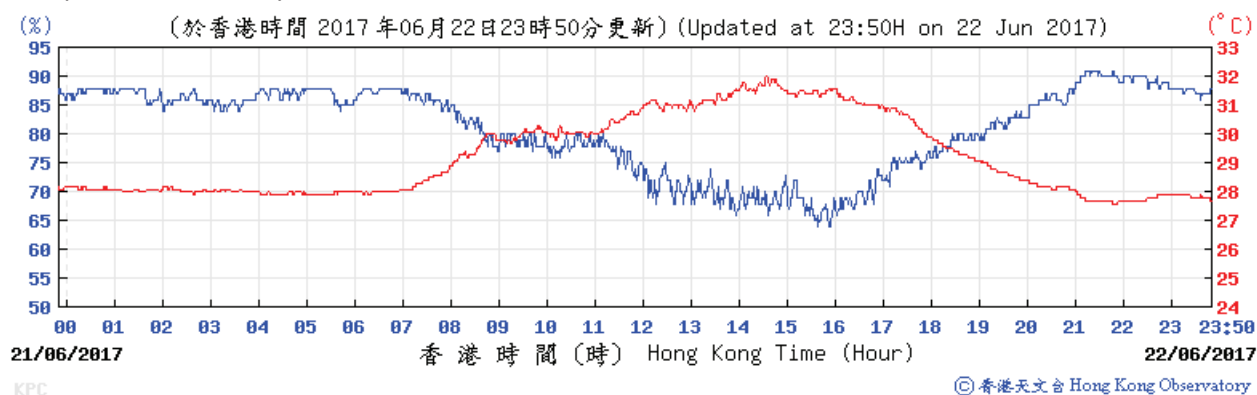
Wind Speed:



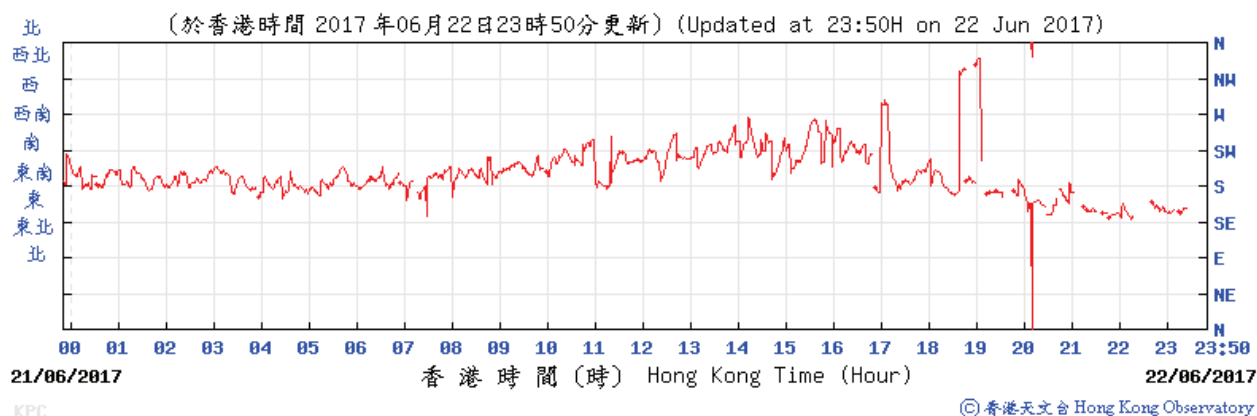
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (8)

## King's Park Weather Station – 22 June 2017

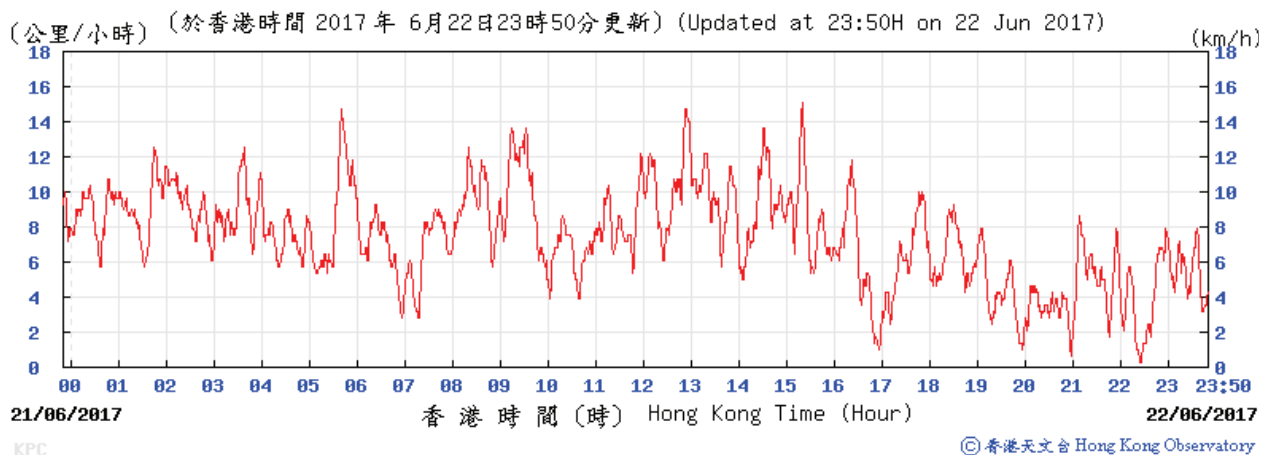
### Temperature/Humidity:



### Wind Direction:



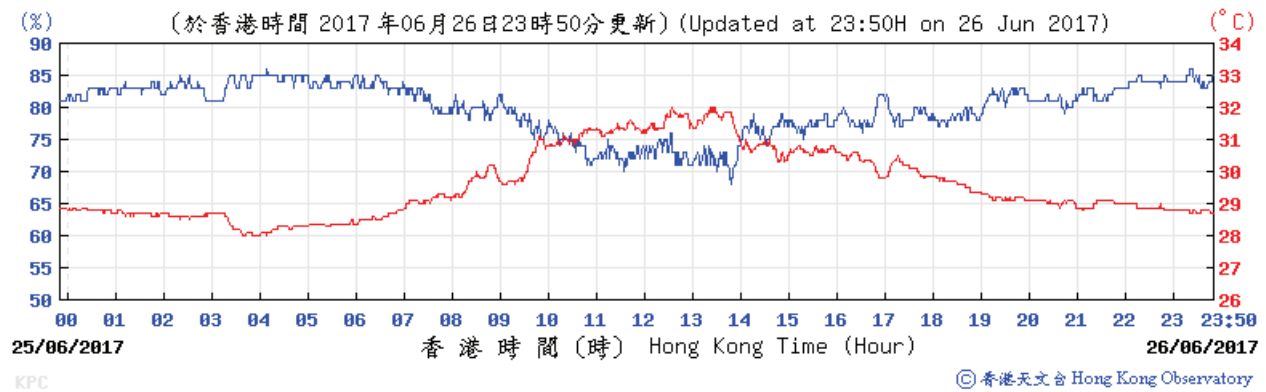
### Wind Speed:



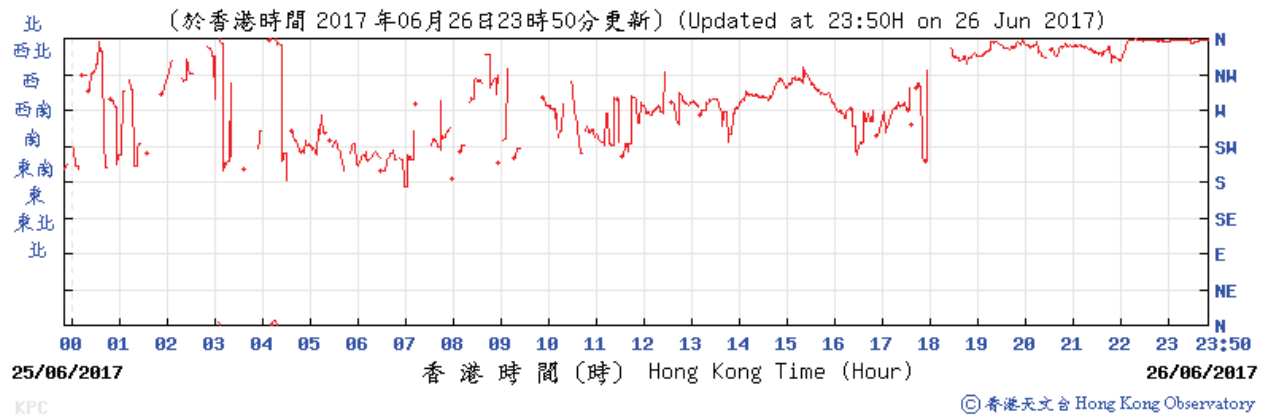
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (9)

## King's Park Weather Station – 26 June 2017

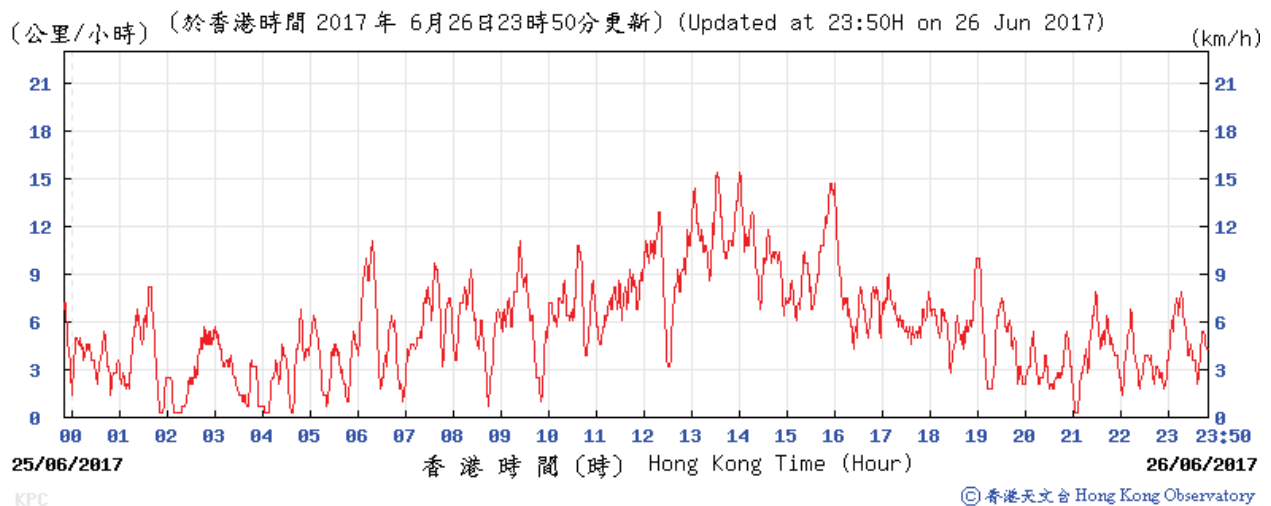
Temperature/Humidity:



Wind Direction:



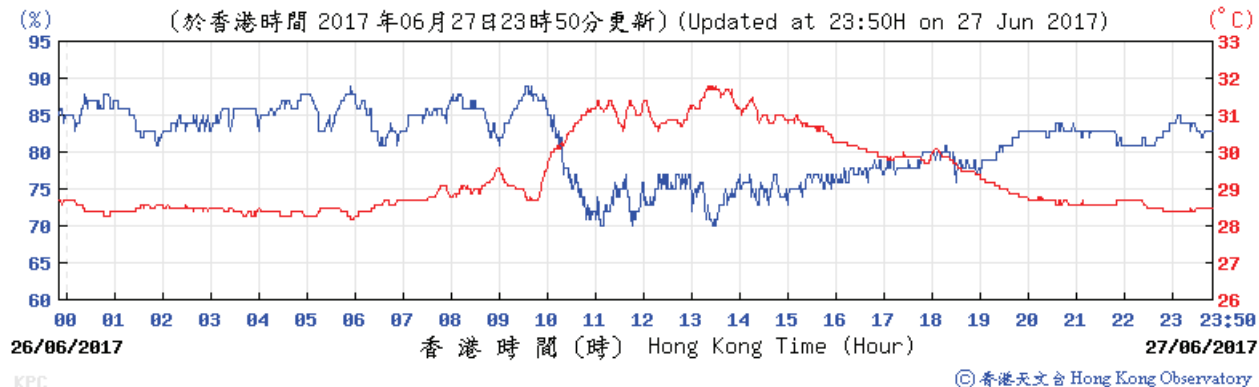
Wind Speed:



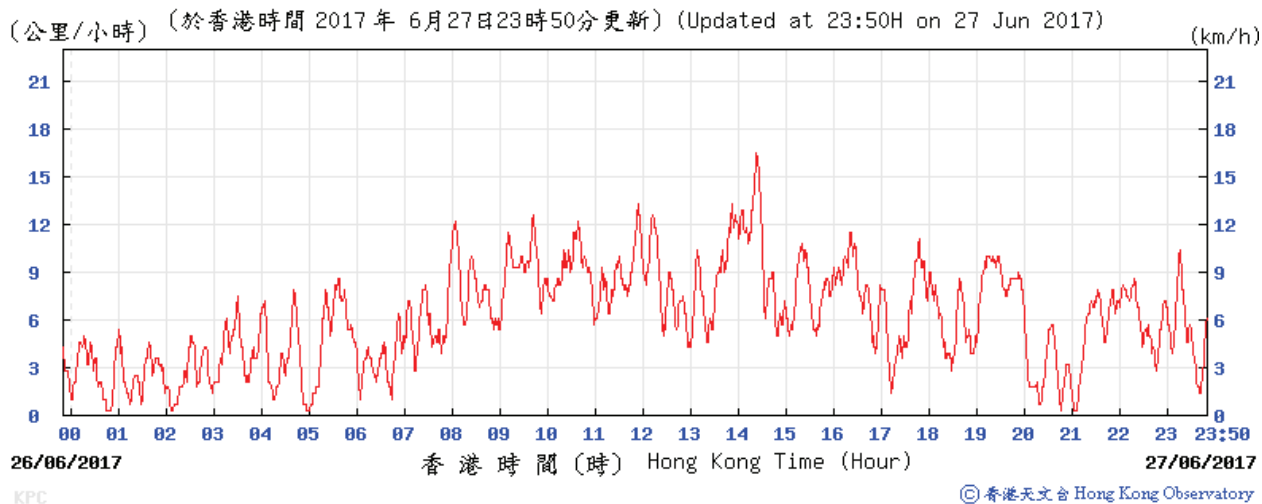
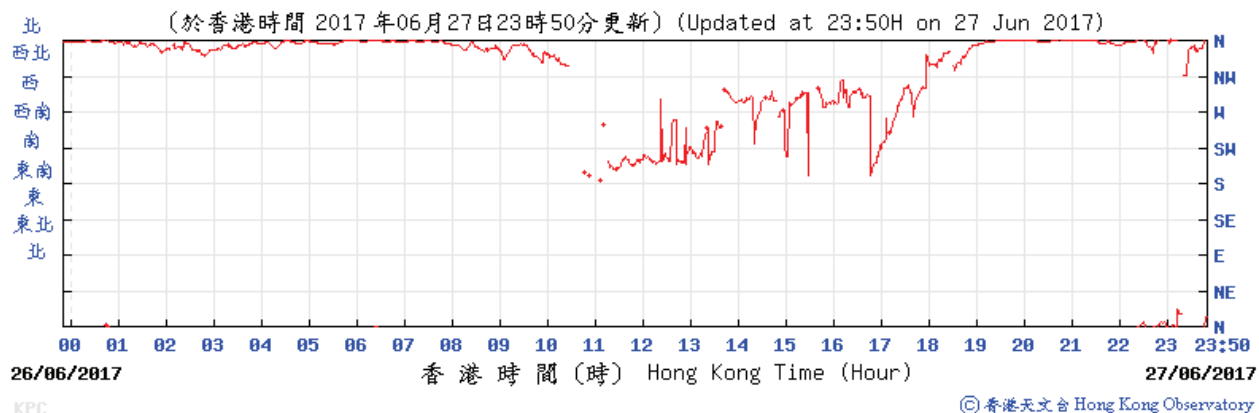
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (10)

## King's Park Weather Station – 27 June 2017

Temperature/Humidity:



Wind Direction:



Wind Speed:

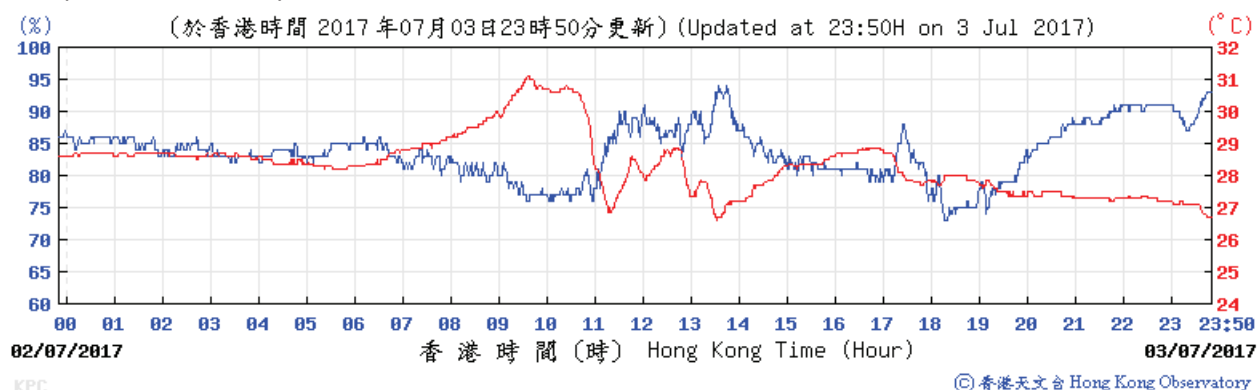
## APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (11)

<b>Daily Total Rainfall at King's Park HKO Weather Monitoring Station - July 2017</b>				
Day	Total Rainfall, mm	24-hr TSP	Noise	Remarks
1	7.4			
2	8.8			
3	8.4	✓		
4	32.3		✓	No significant rainfall within the monitoring location during noise measurement.
5	27.5			
6	16.3			
7	35.8			
8	12.8			
9	1.2			
10	0.6	✓		
11	-		✓	The weather was fine without rainfall on site during noise monitoring.
12	Trace			
13	Trace			
14	2.3			
15	8.8			
16	21			
17	184.6	✓		
18	134.3			
19	12.6		✓	No significant rainfall within the monitoring location during noise measurement.
20	2			
21	0.2			
22	3.3			
23	46.5			
24	3.3	✓		
25	Trace		✓	The weather was fine without rainfall on site during noise monitoring.
26	-			
27	Trace			
28	-			
29	-			
30	-			
31	-			
Mean/Total	570			

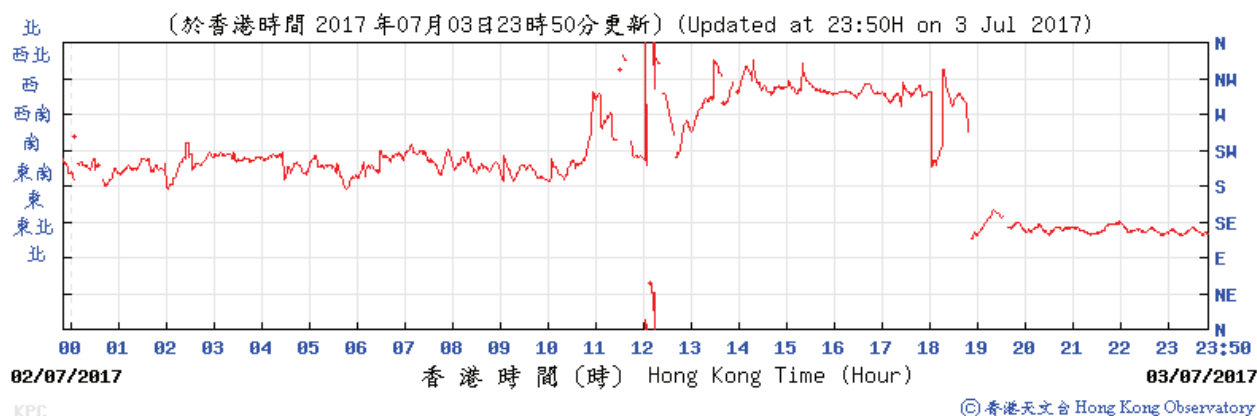
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (12)

## King's Park Weather Station – 03 July 2017

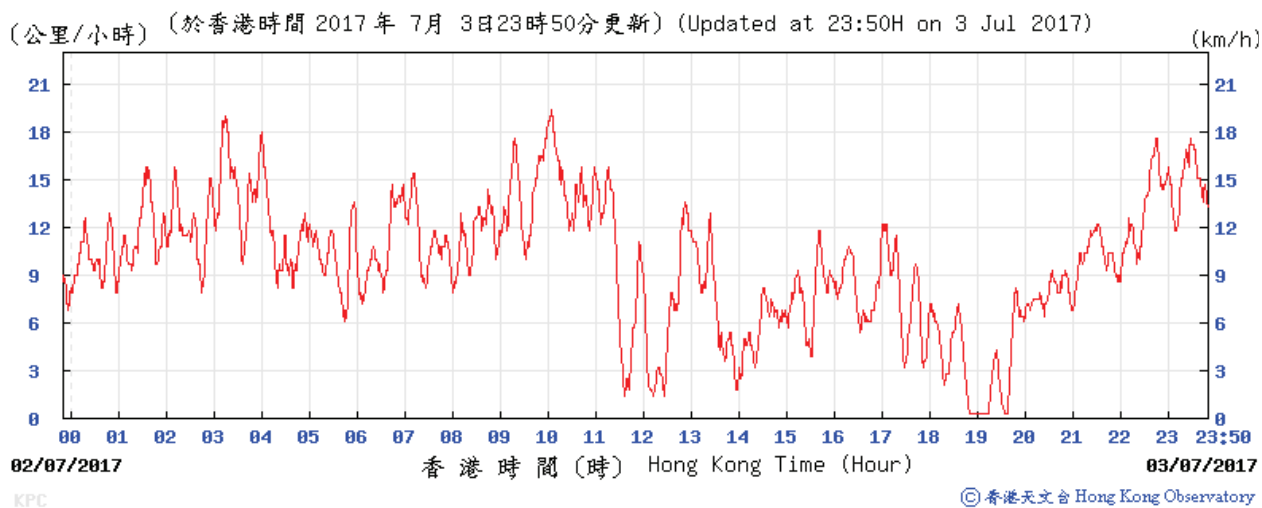
Temperature/Humidity:



Wind Direction:



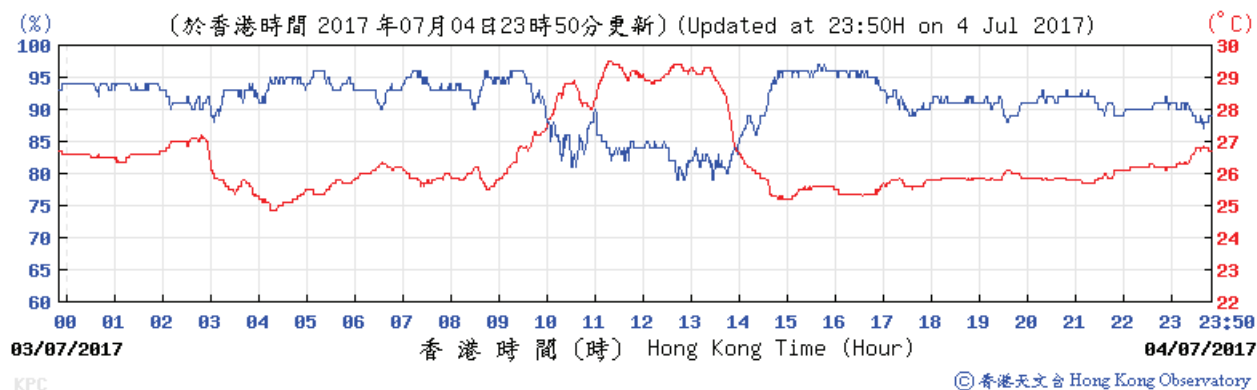
Wind Speed:



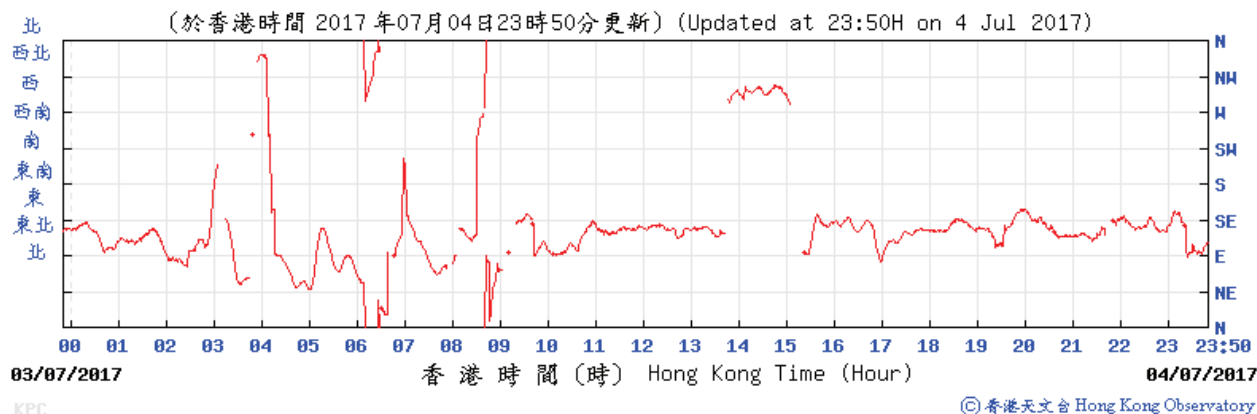
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (13)

## King's Park Weather Station – 04 July 2017

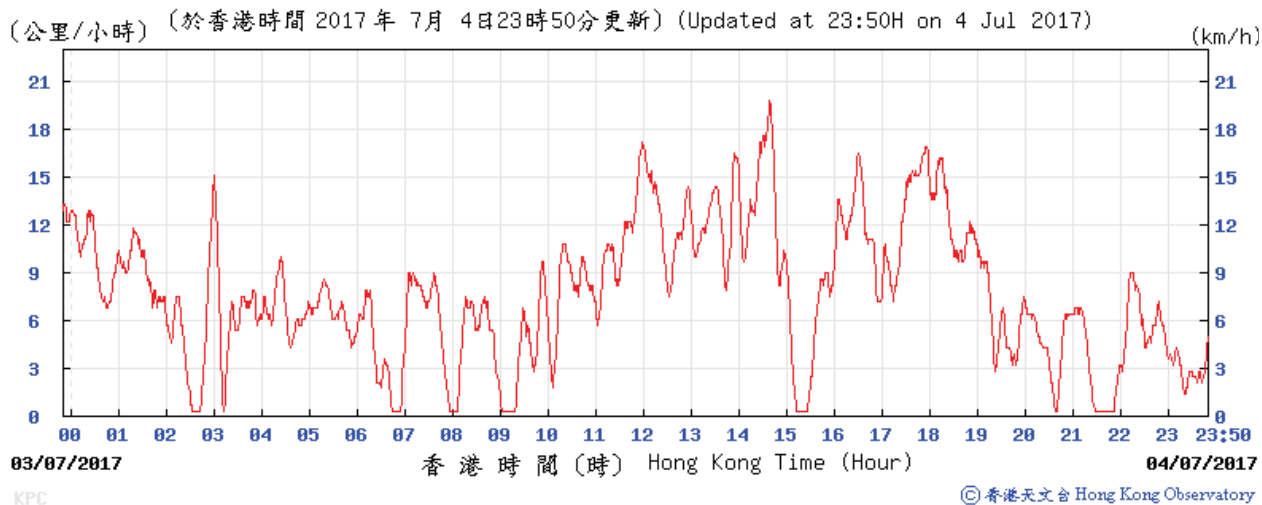
Temperature/Humidity:



Wind Direction:



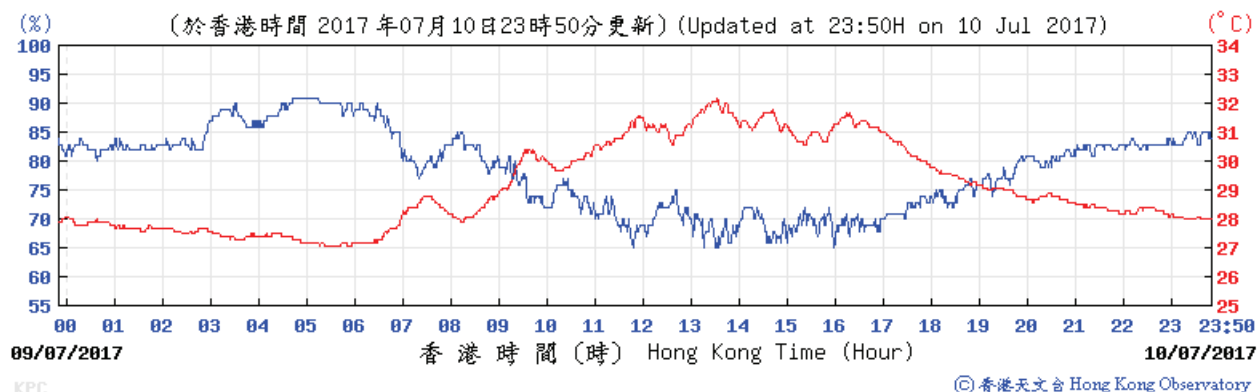
Wind Speed:



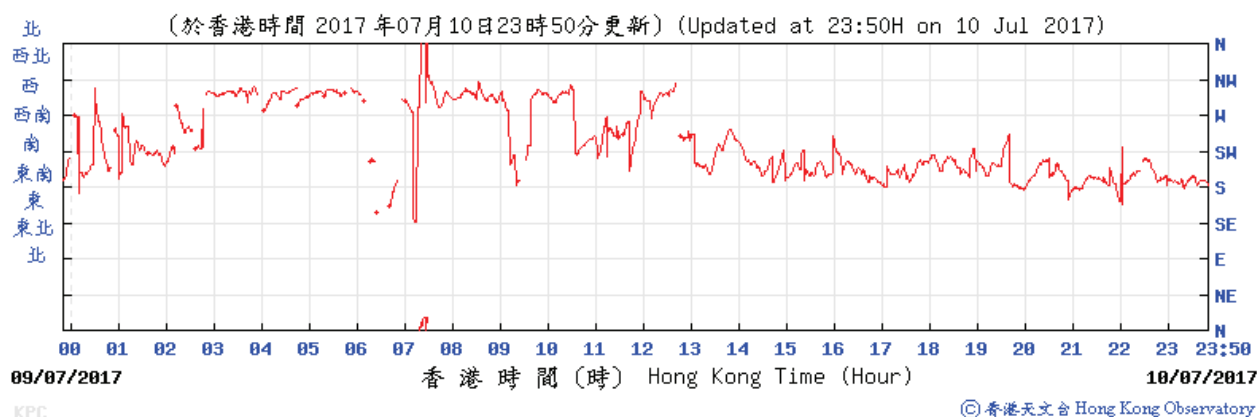
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (14)

## King's Park Weather Station – 10 July 2017

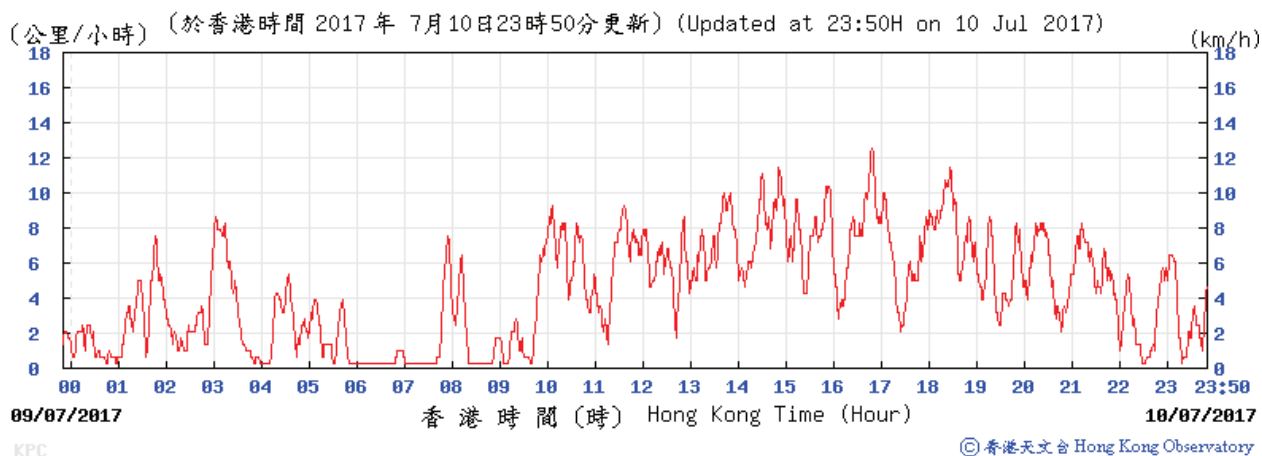
Temperature/Humidity:



Wind Direction:



Wind Speed:

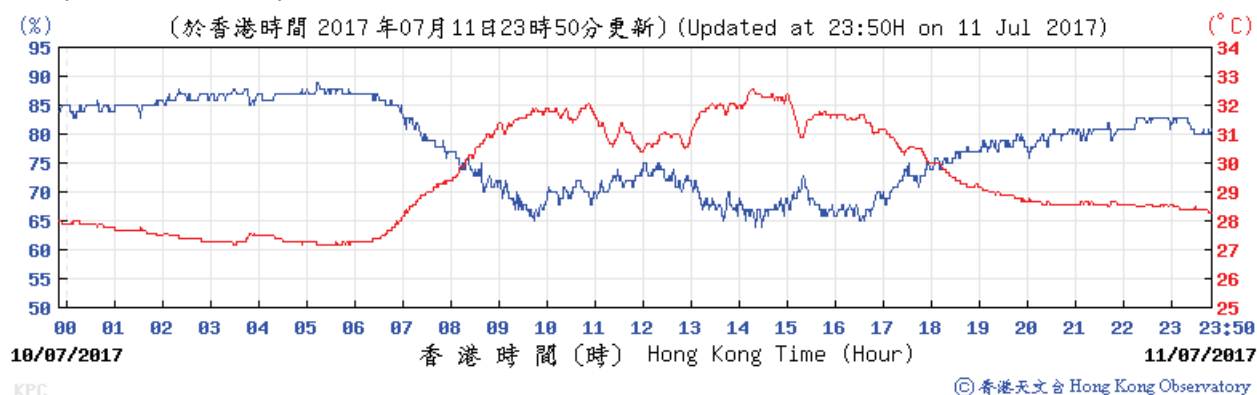




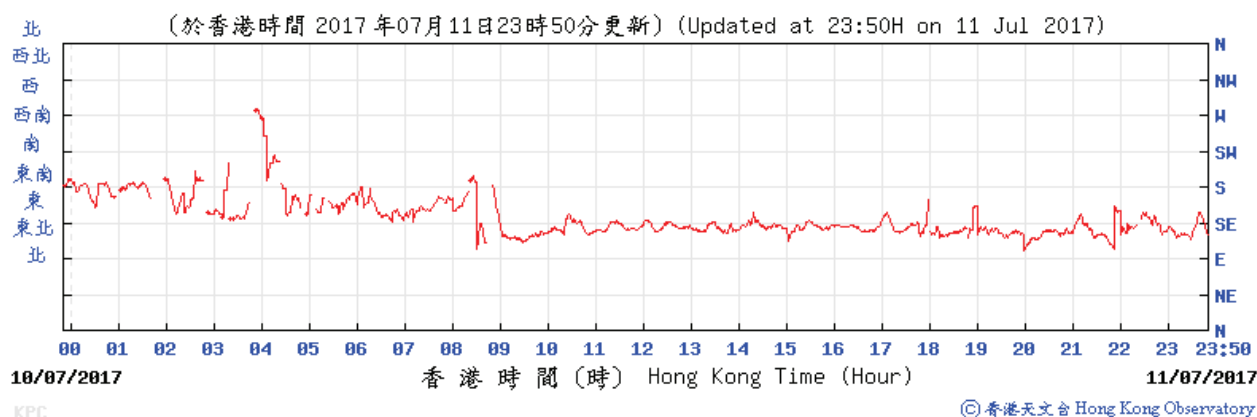
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (15)

## King's Park Weather Station – 11 July 2017

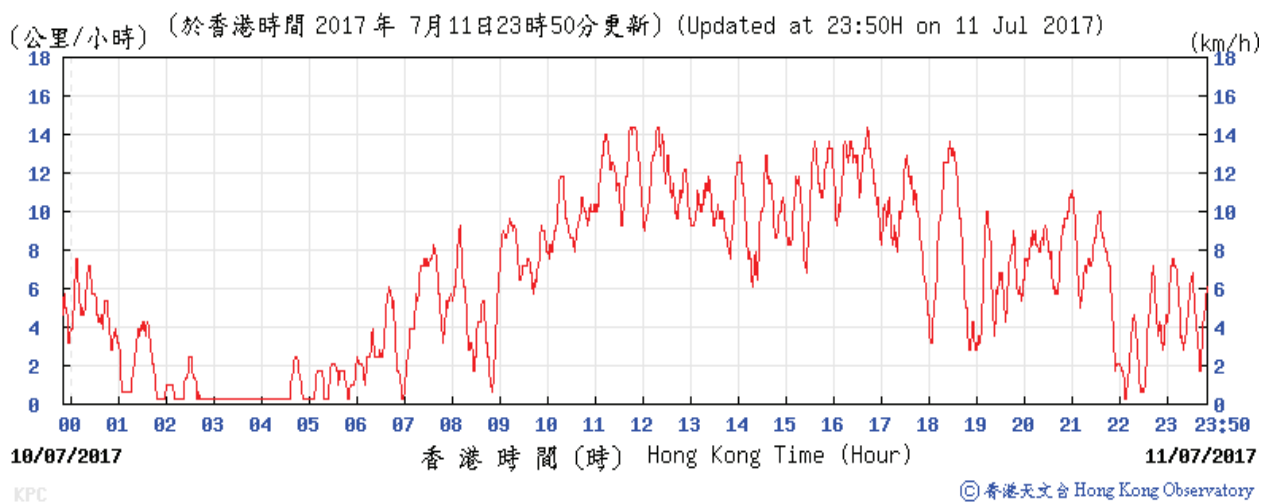
Temperature/Humidity:



Wind Direction:



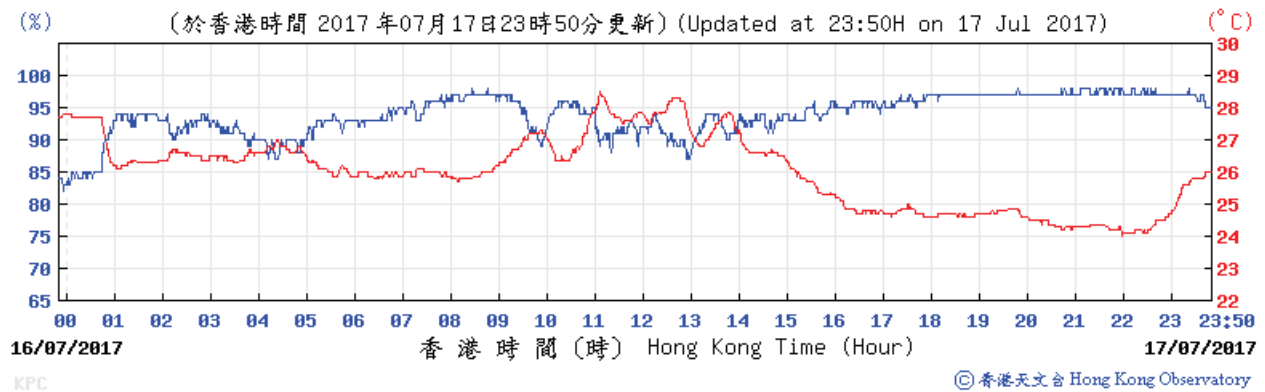
Wind Speed:



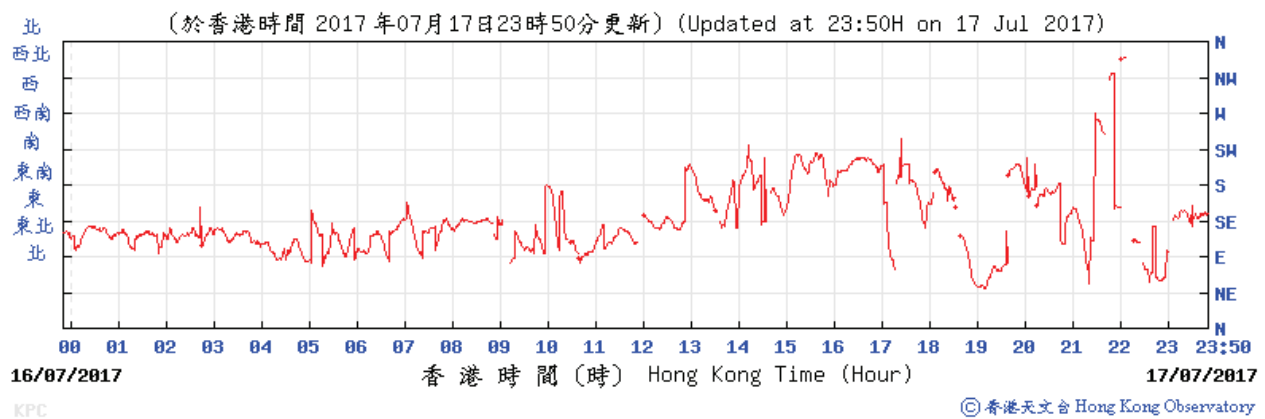
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (16)

## King's Park Weather Station – 17 July 2017

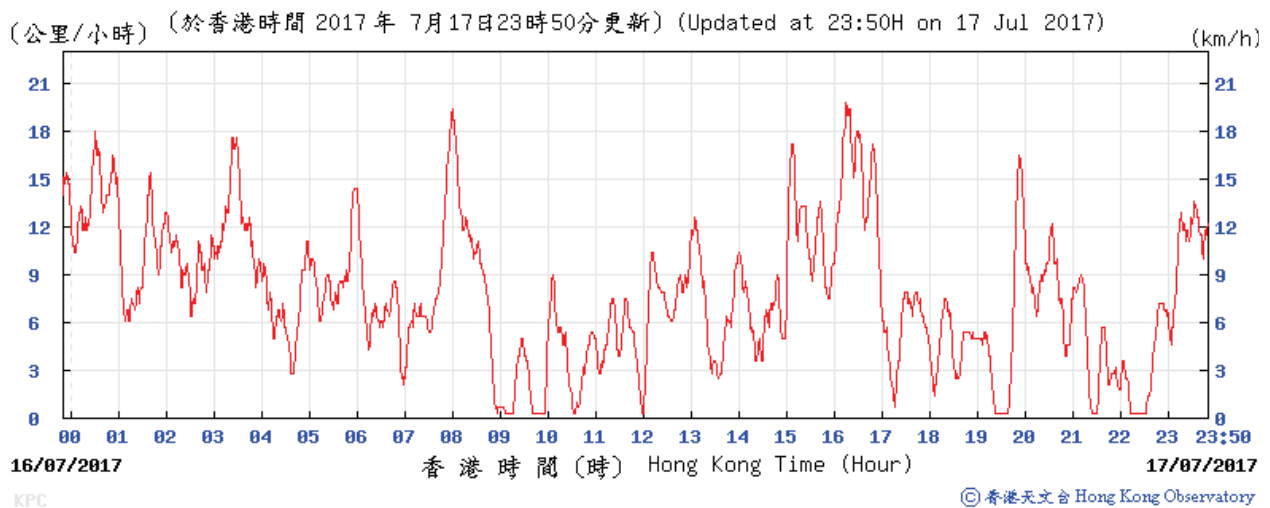
### Temperature/Humidity:



### Wind Direction:



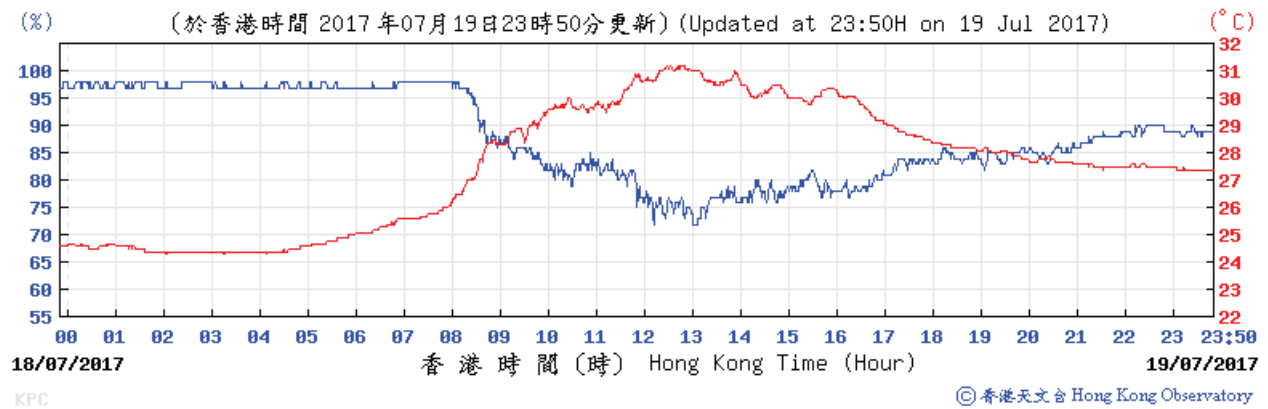
### Wind Speed:



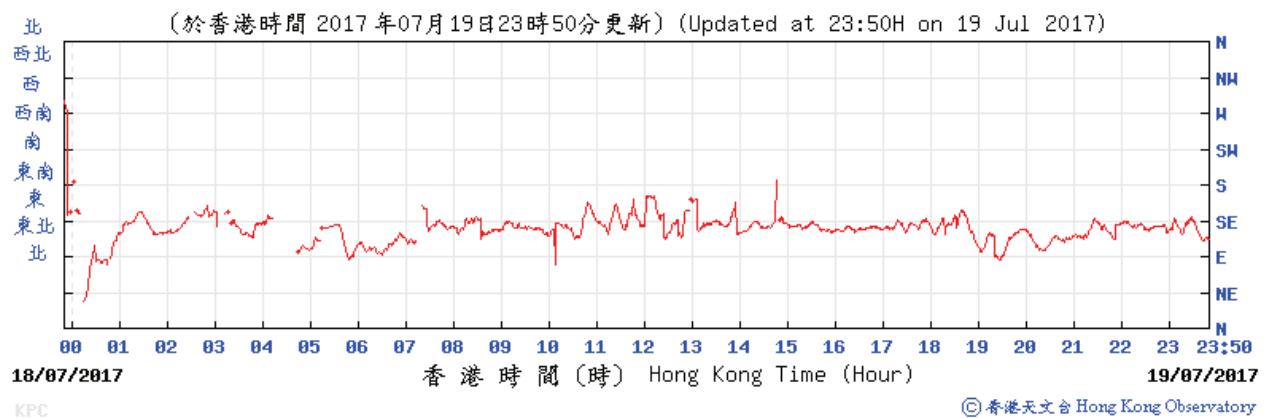
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (17)

## King's Park Weather Station – 19 July 2017

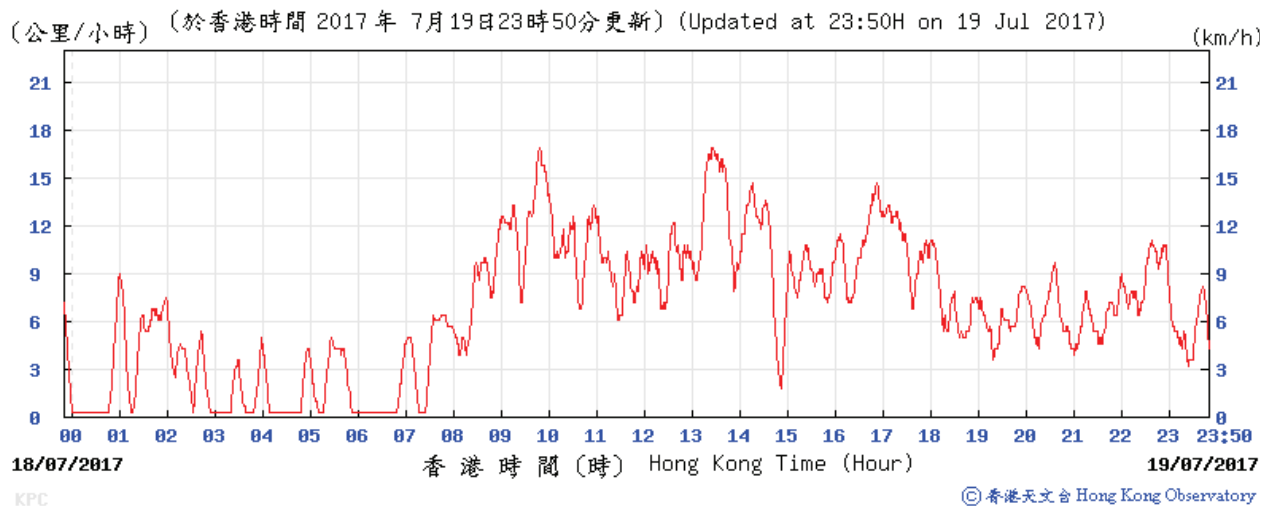
### Temperature/Humidity:



### Wind Direction:



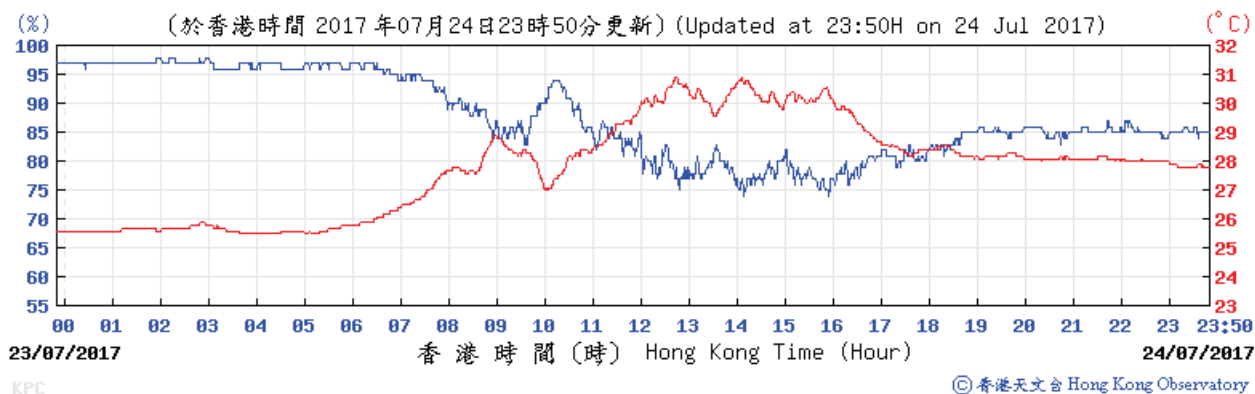
### Wind Speed:



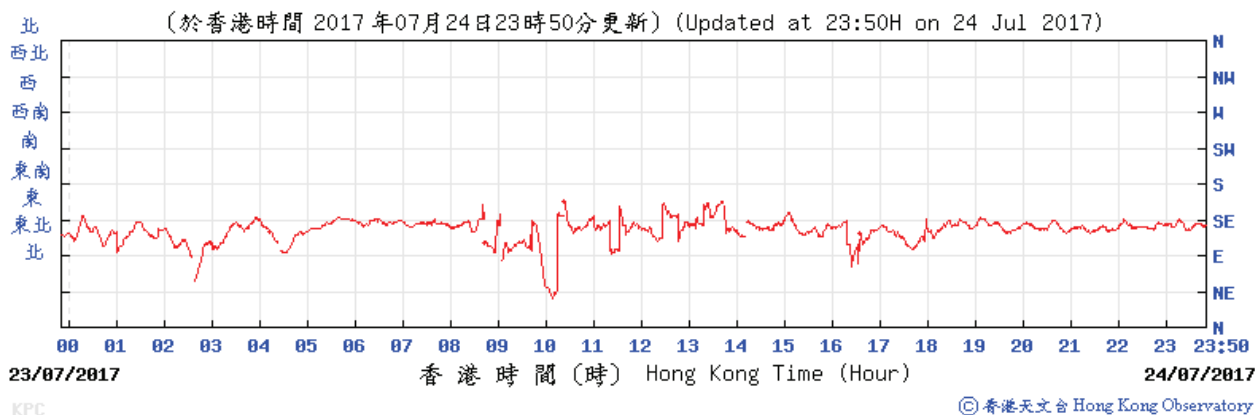
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (18)

## King's Park Weather Station – 24 July 2017

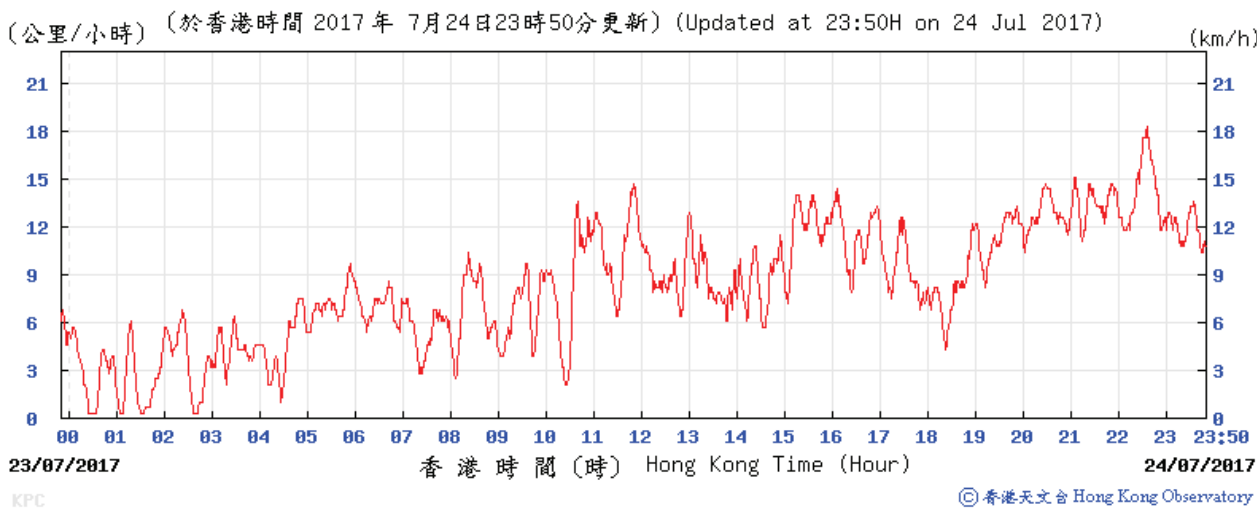
Temperature/Humidity:



Wind Direction:



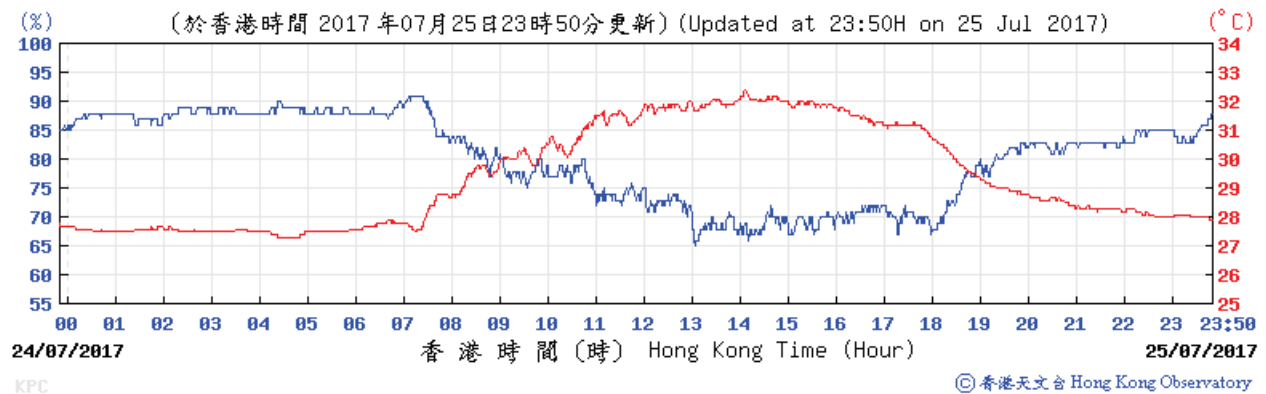
Wind Speed:



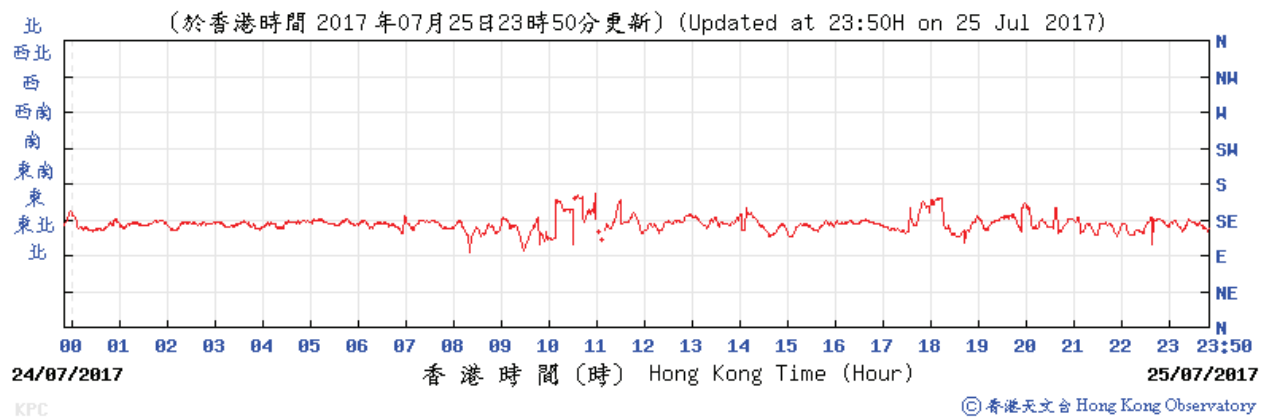
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (19)

## King's Park Weather Station – 25 July 2017

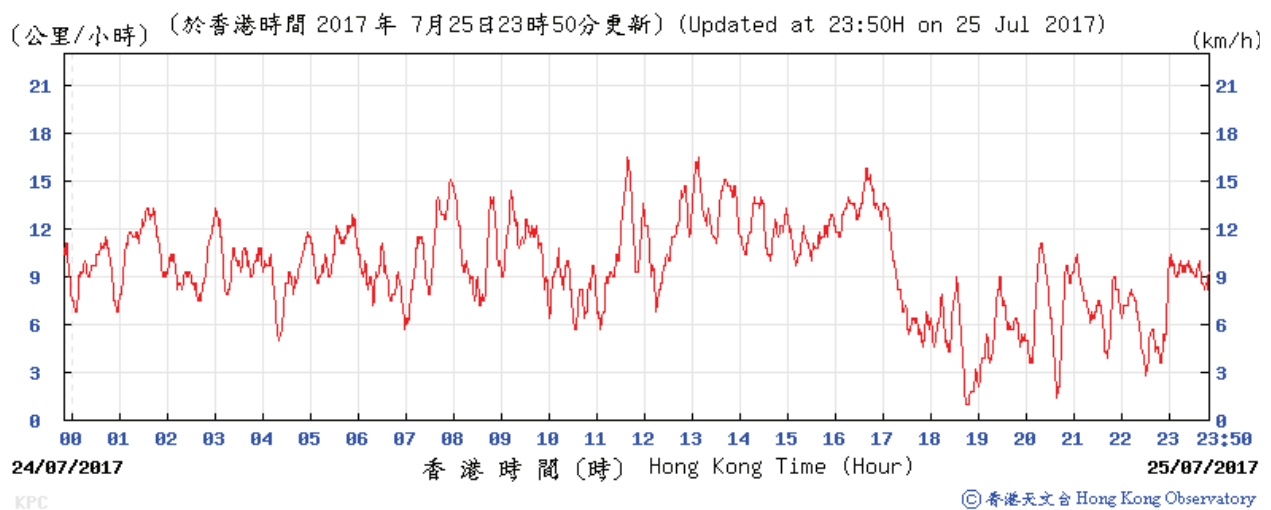
Temperature/Humidity:



Wind Direction:



Wind Speed:



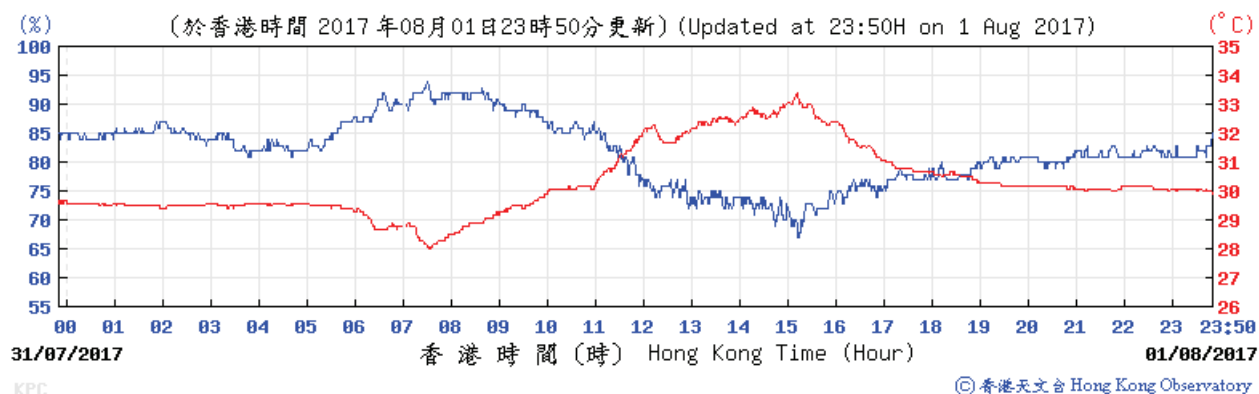
## APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (20)

<b>Daily Total Rainfall at King's Park HKO Weather Monitoring Station - August 2017</b>				
Day	Total Rainfall, mm	24-hr TSP	Noise	Remarks
1	5.9	✓	✓	No significant rainfall during noise measurement
2	14.8			
3	66.7			
4	19.3			
5	0.9			
6	-			
7	6.9	✓		
8	1.9		✓	No significant rainfall during noise measurement
9	14.3			
10	11.1			
11	3.5			
12	-			
13	-			
14	Trace	✓		
15	0.2		✓	No significant rainfall during noise measurement
16	Trace			
17	-			
18	-			
19	-			
20	-			
21	-	✓		
22	2		✓	No significant rainfall during noise measurement
23	67.1			
24	Trace			
25	0.1			
26	6.3			
27	165.3			
28	98.3	✓		
29	-		✓	No significant rainfall during noise measurement
30	0.4			
31	4.1			
Mean/Total	489.1			
Normal	432.2			

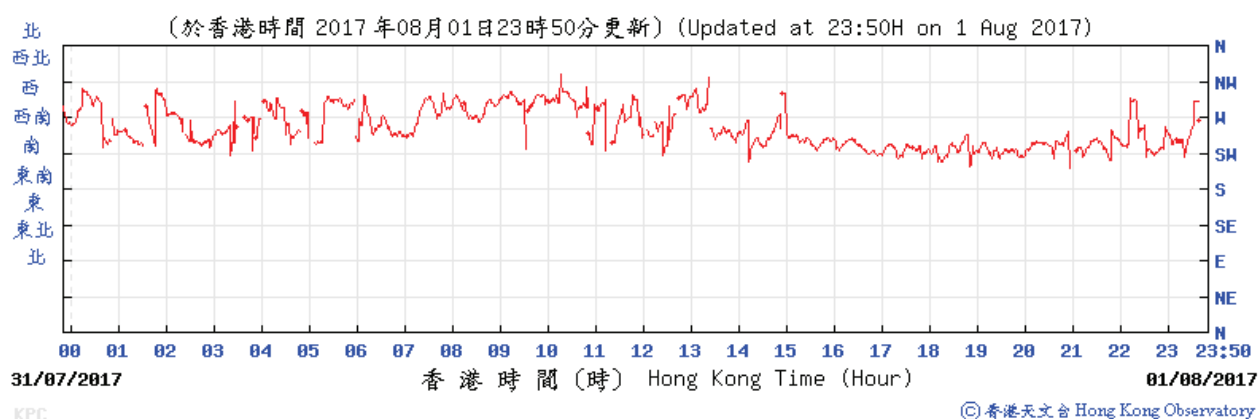
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (21)

## King's Park Weather Station – 01 August 2017

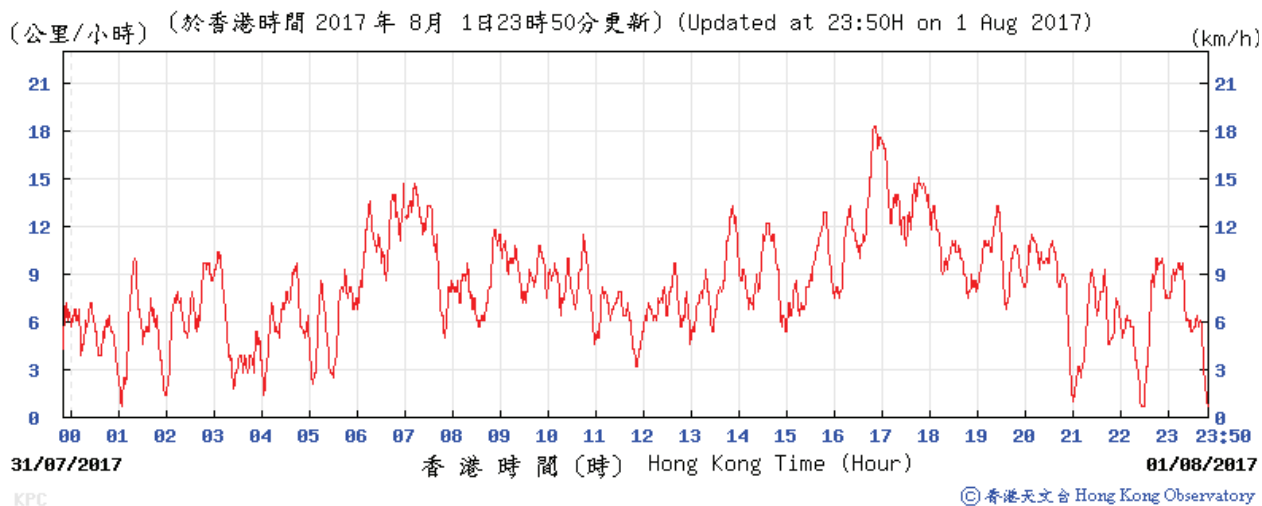
Temperature/Humidity:



Wind Direction:



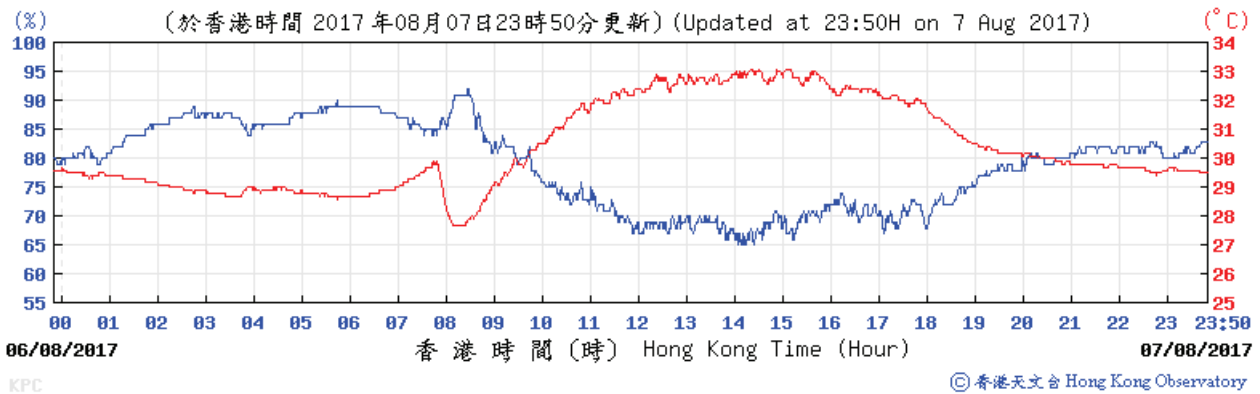
Wind Speed:



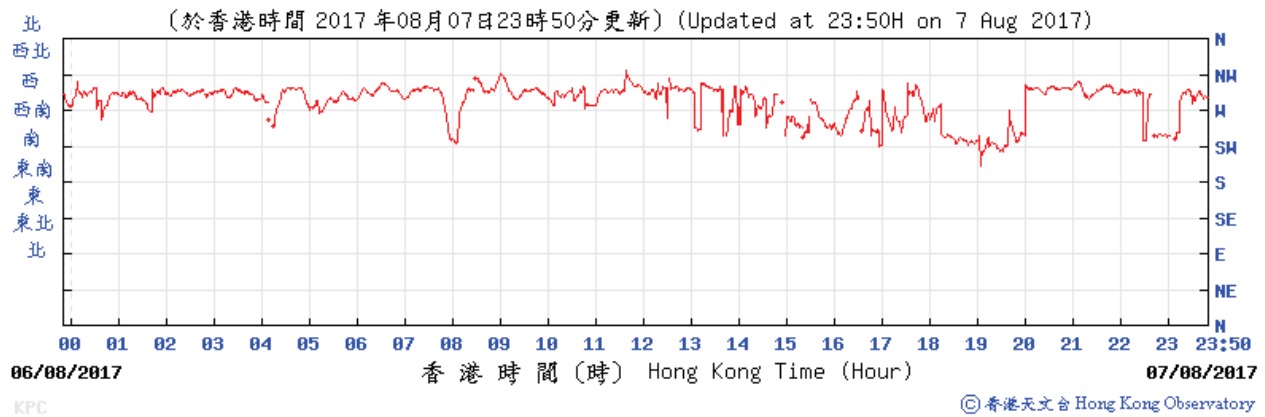
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (22)

## King's Park Weather Station – 07 August 2017

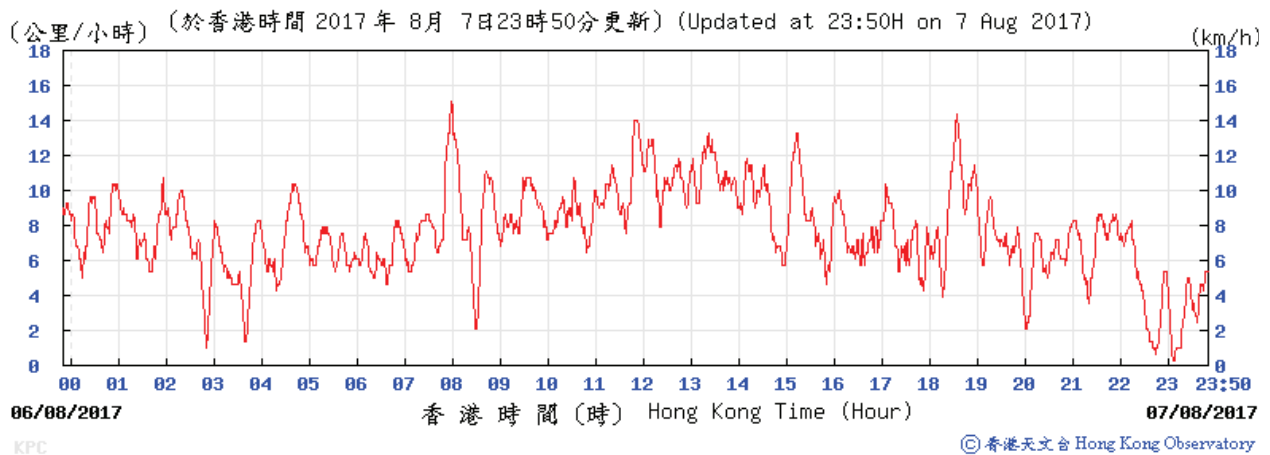
Temperature/Humidity:



Wind Direction:



Wind Speed:

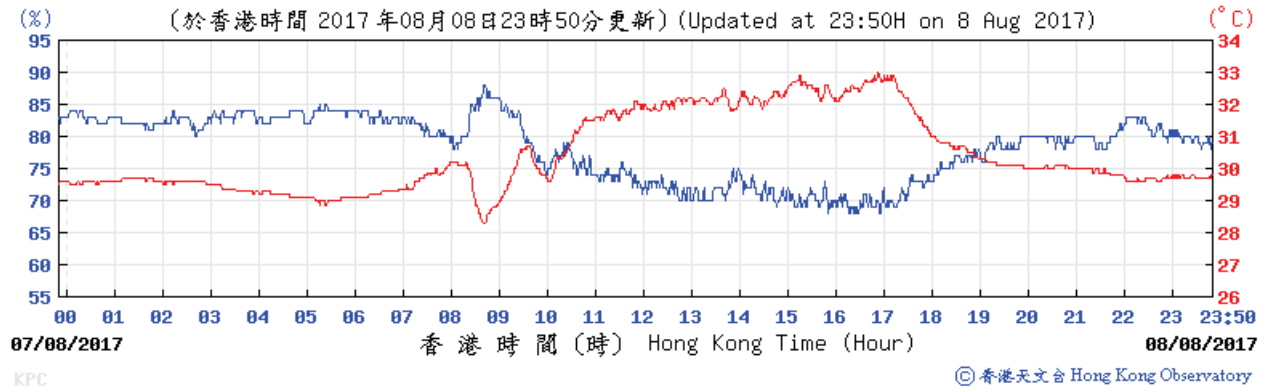




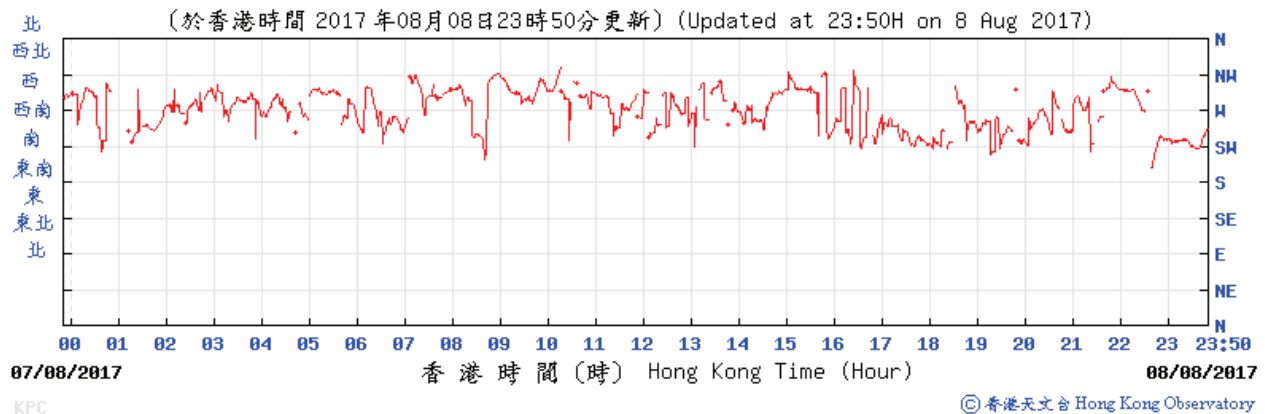
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (23)

## King's Park Weather Station – 08 August 2017

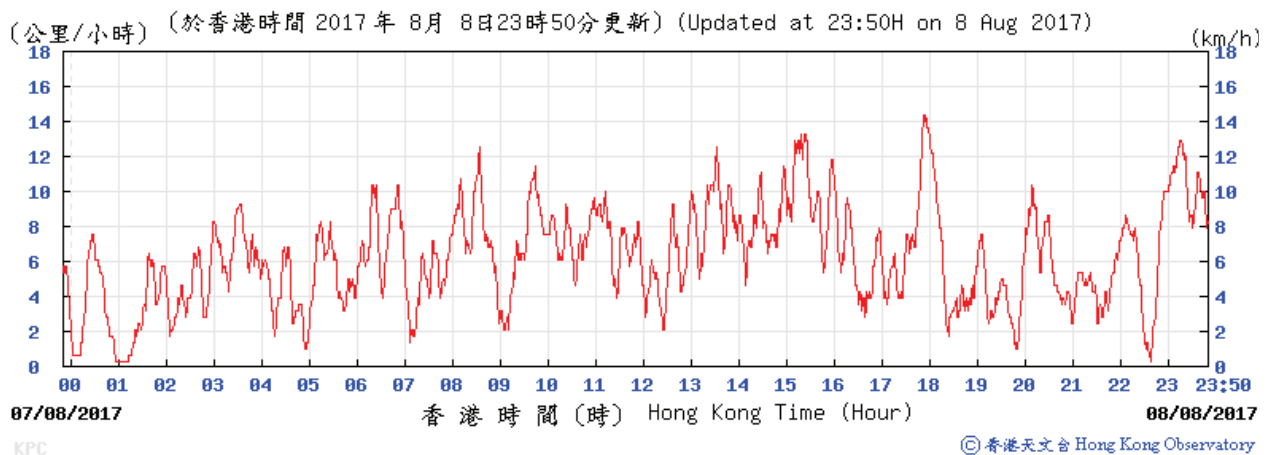
Temperature/Humidity:



Wind Direction:



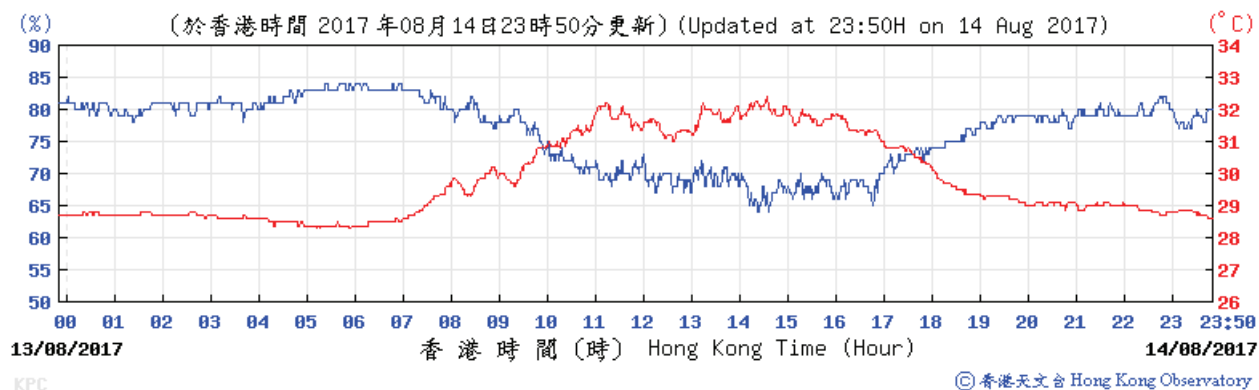
Wind Speed:



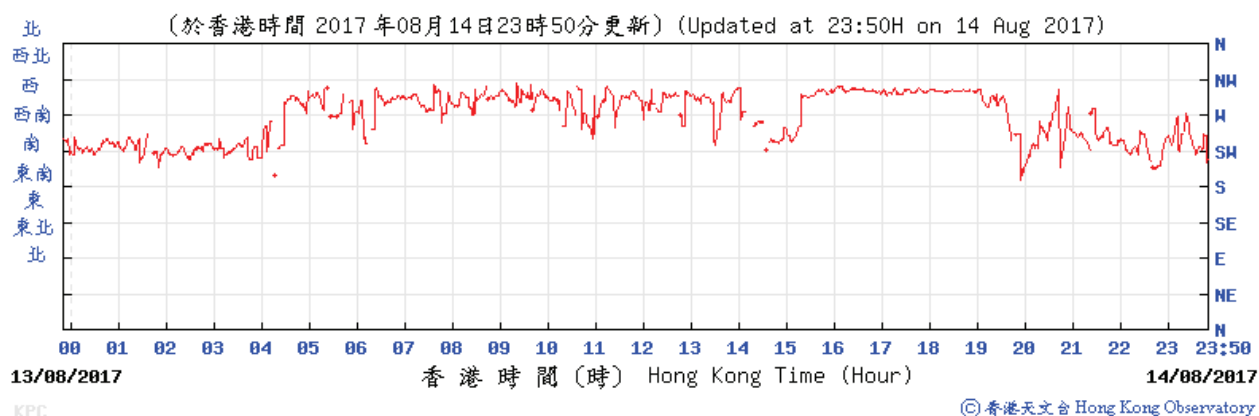
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (24)

## King's Park Weather Station – 14 August 2017

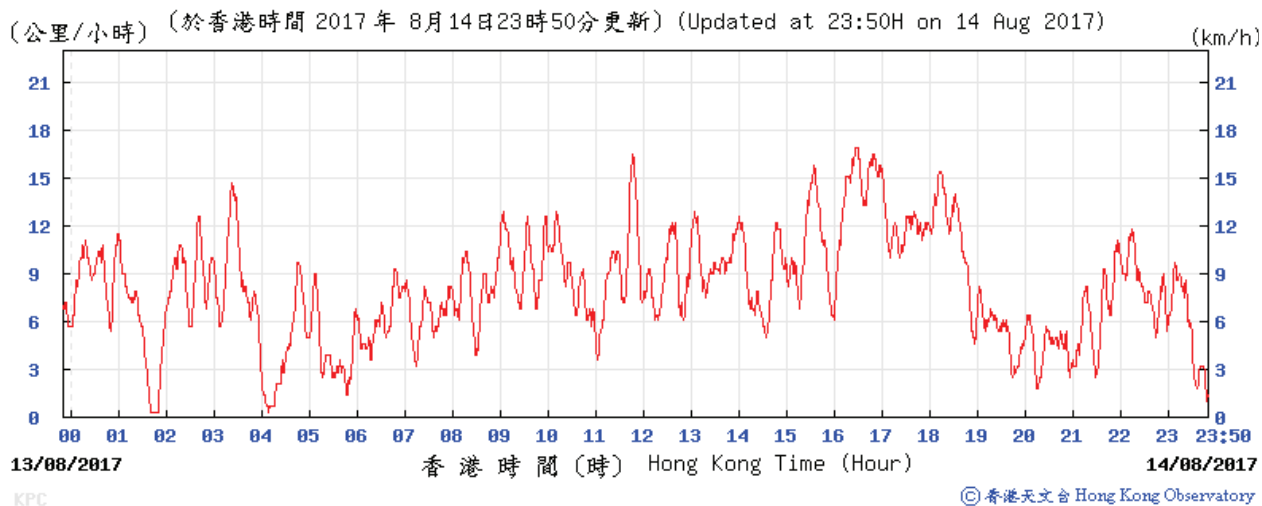
Temperature/Humidity:



Wind Direction:



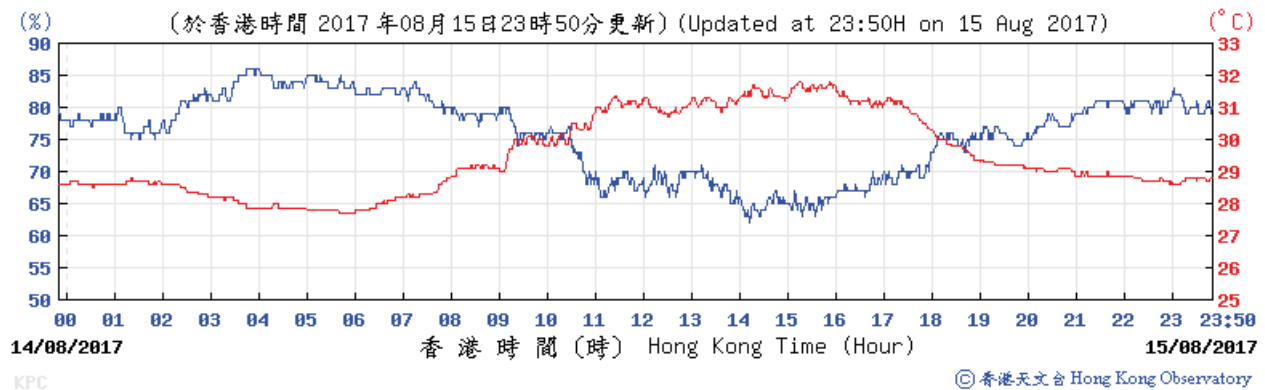
Wind Speed:



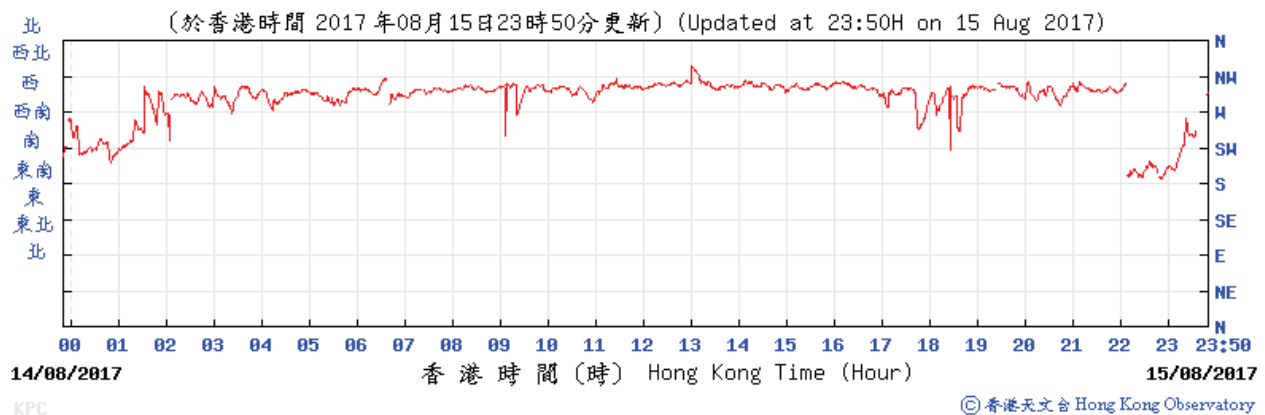
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (25)

## King's Park Weather Station – 15 August 2017

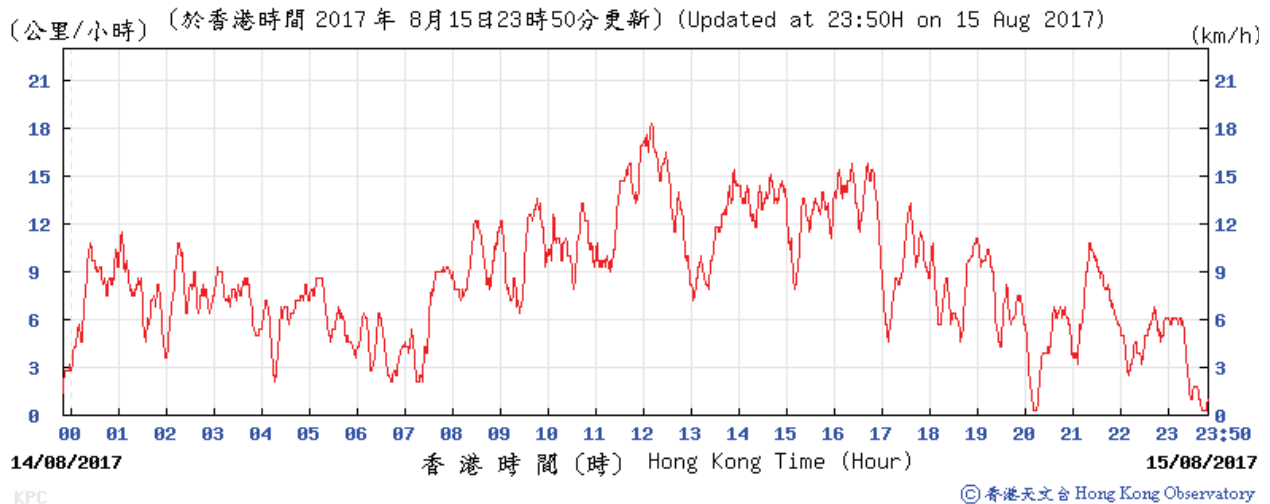
Temperature/Humidity:



Wind Direction:



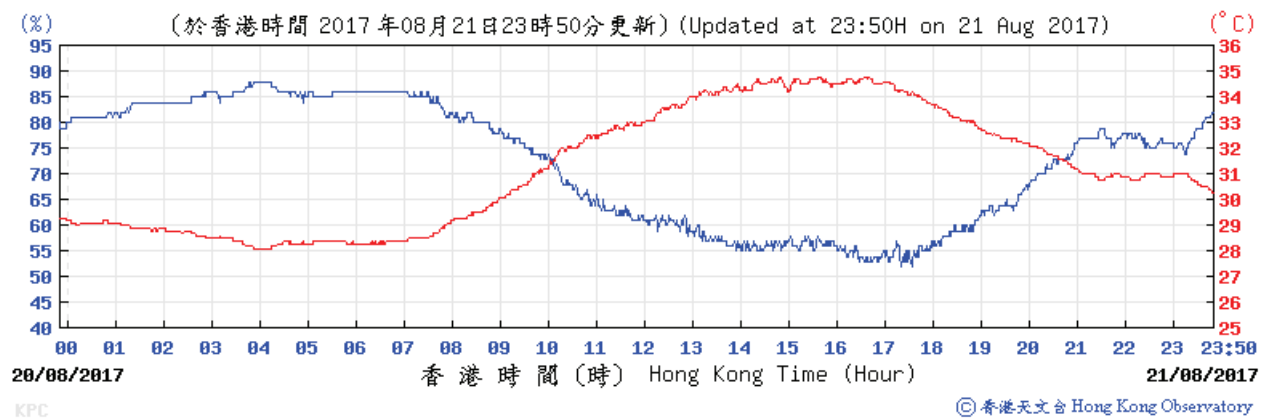
Wind Speed:



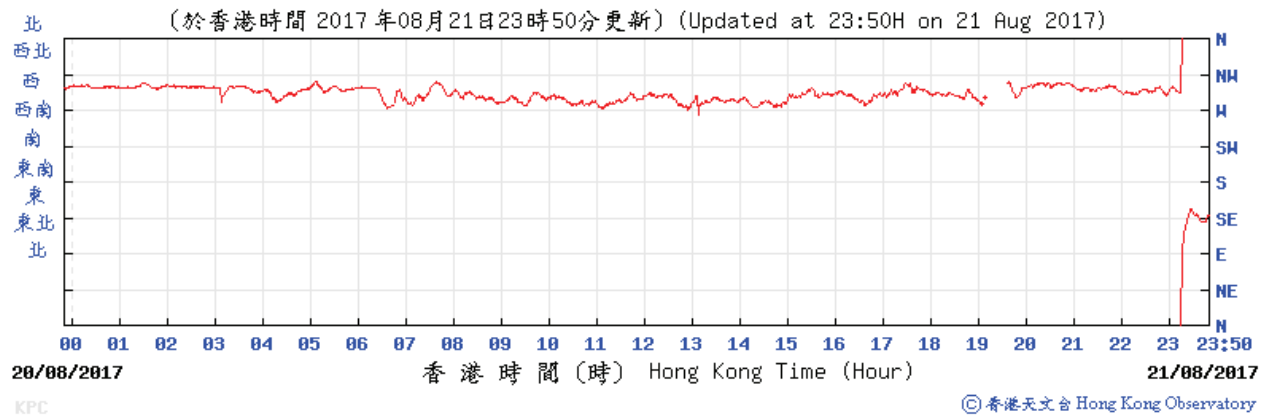
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (26)

## King's Park Weather Station – 21 August 2017

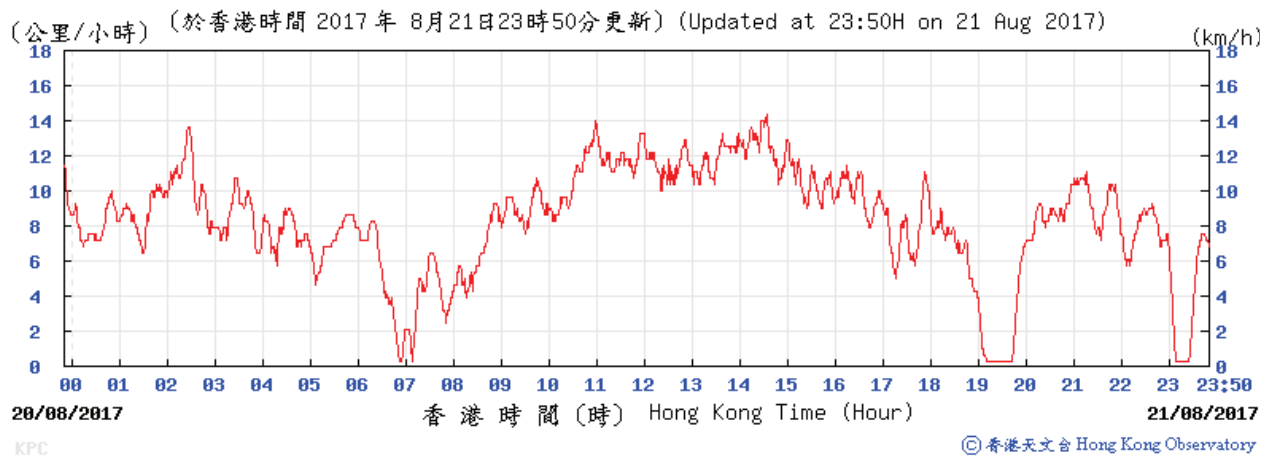
Temperature/Humidity:



Wind Direction:



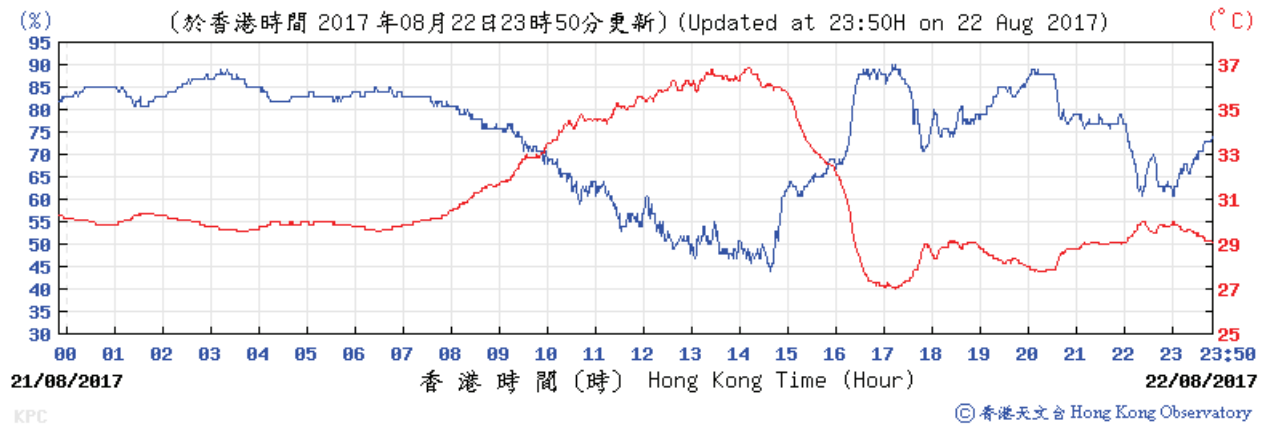
Wind Speed:



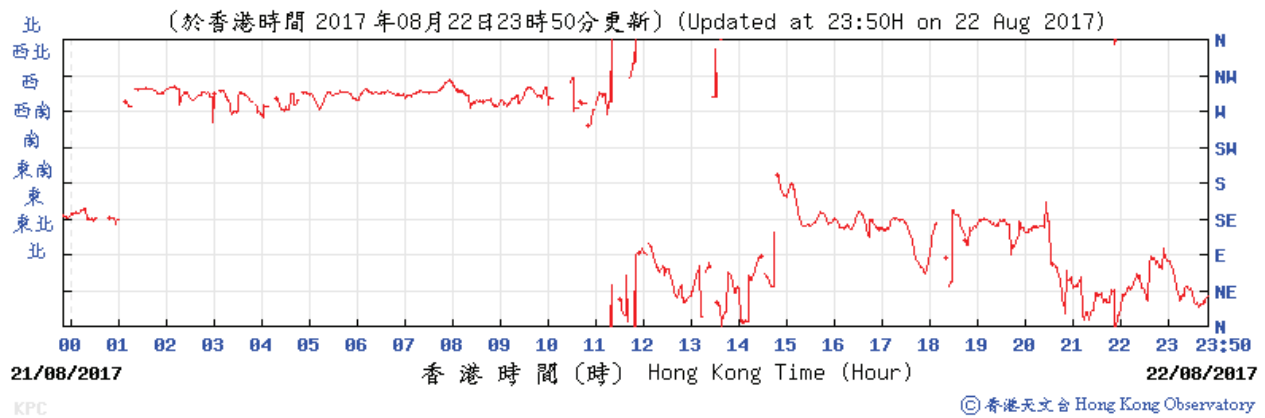
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (27)

## King's Park Weather Station – 22 August 2017

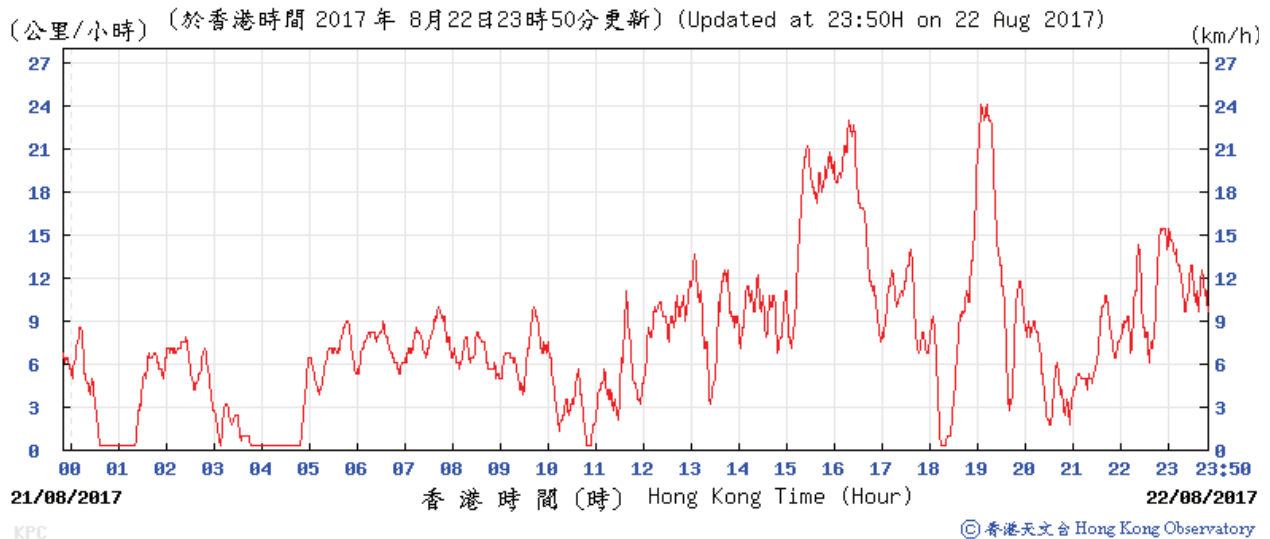
Temperature/Humidity:



Wind Direction:



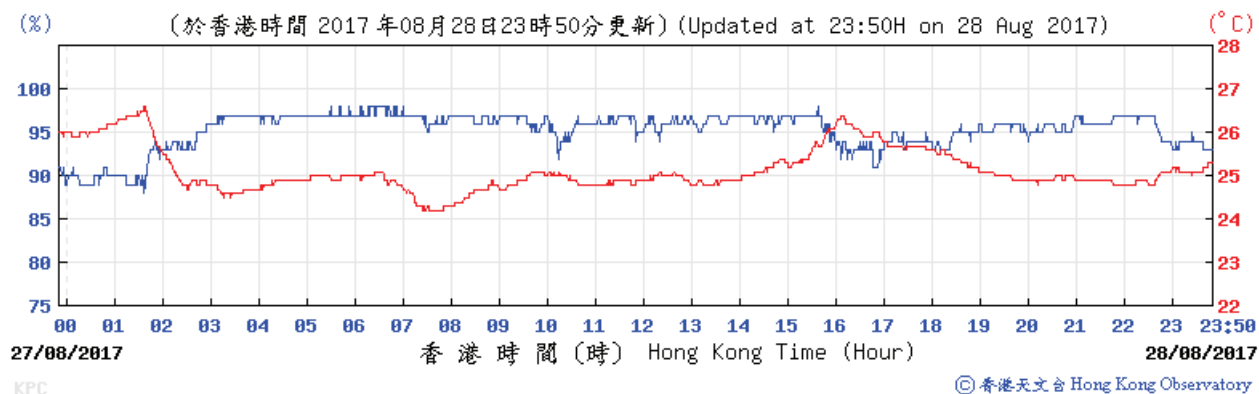
Wind Speed:



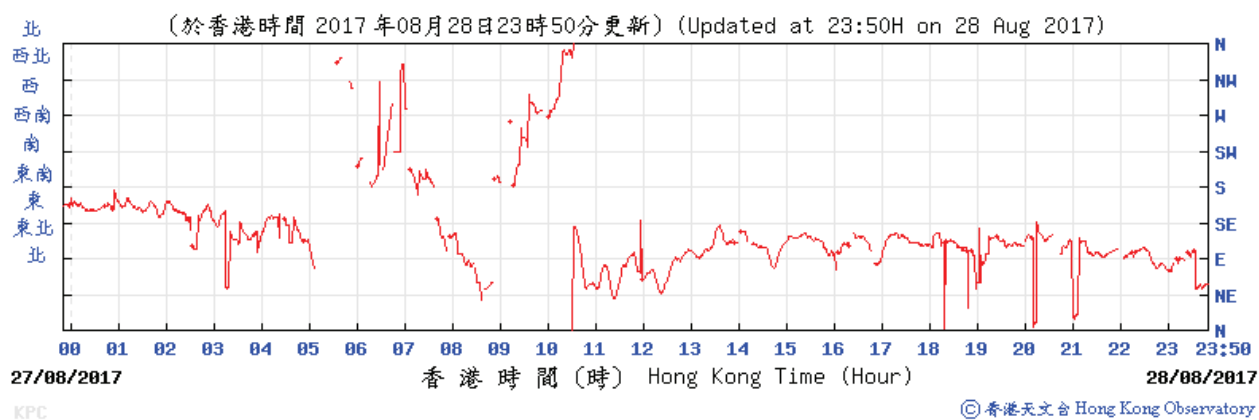
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (28)

## King's Park Weather Station – 28 August 2017

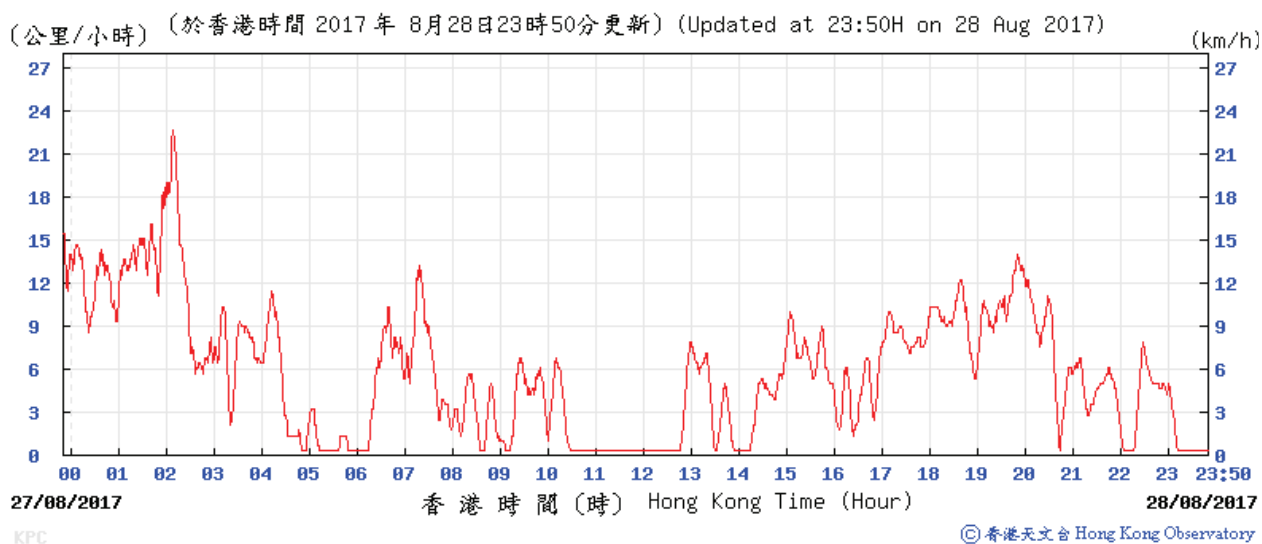
### Temperature/Humidity:



### Wind Direction:



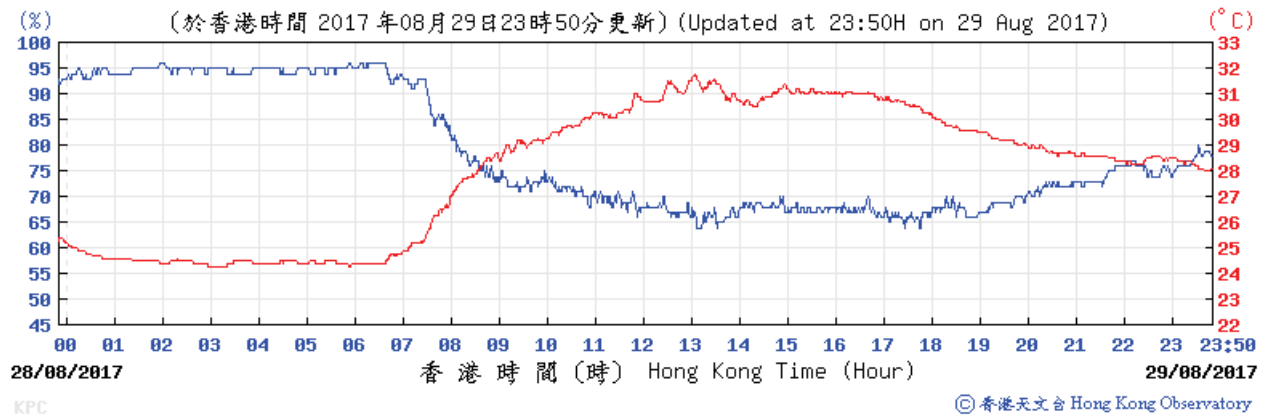
### Wind Speed:



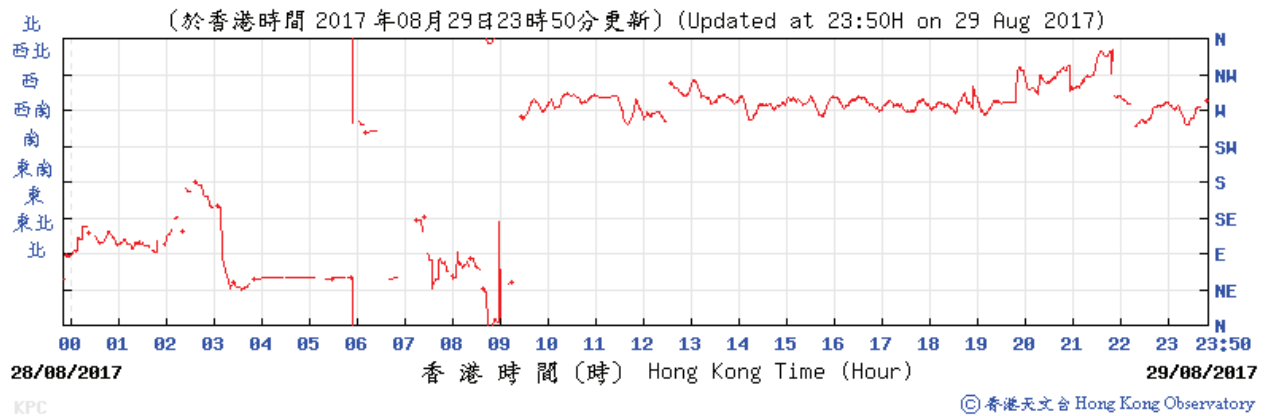
# APPENDIX G WEATHER INFORMATION FROM HK OBSERVATORY (29)

## King's Park Weather Station – 29 August 2017

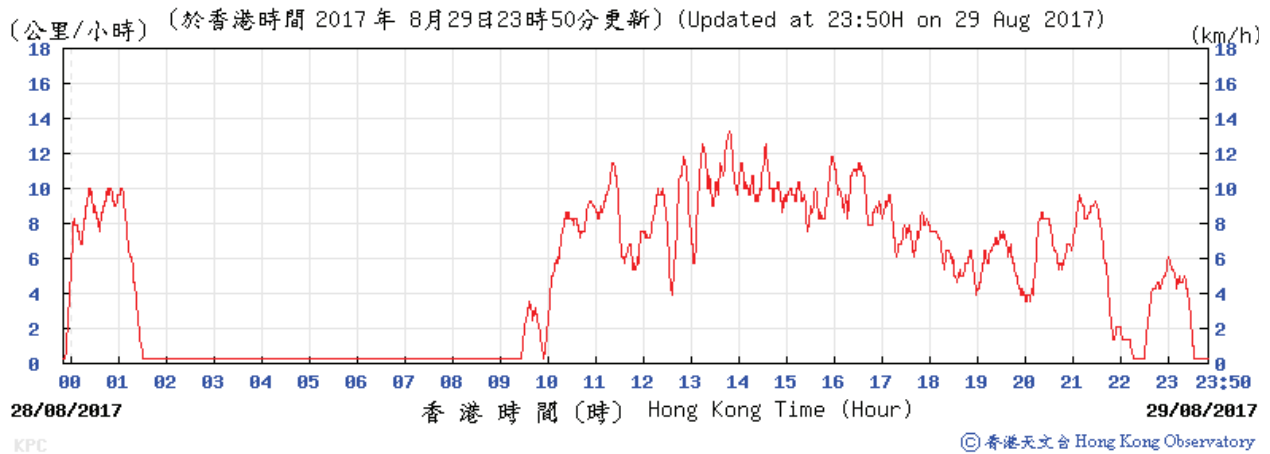
Temperature/Humidity:



Wind Direction:



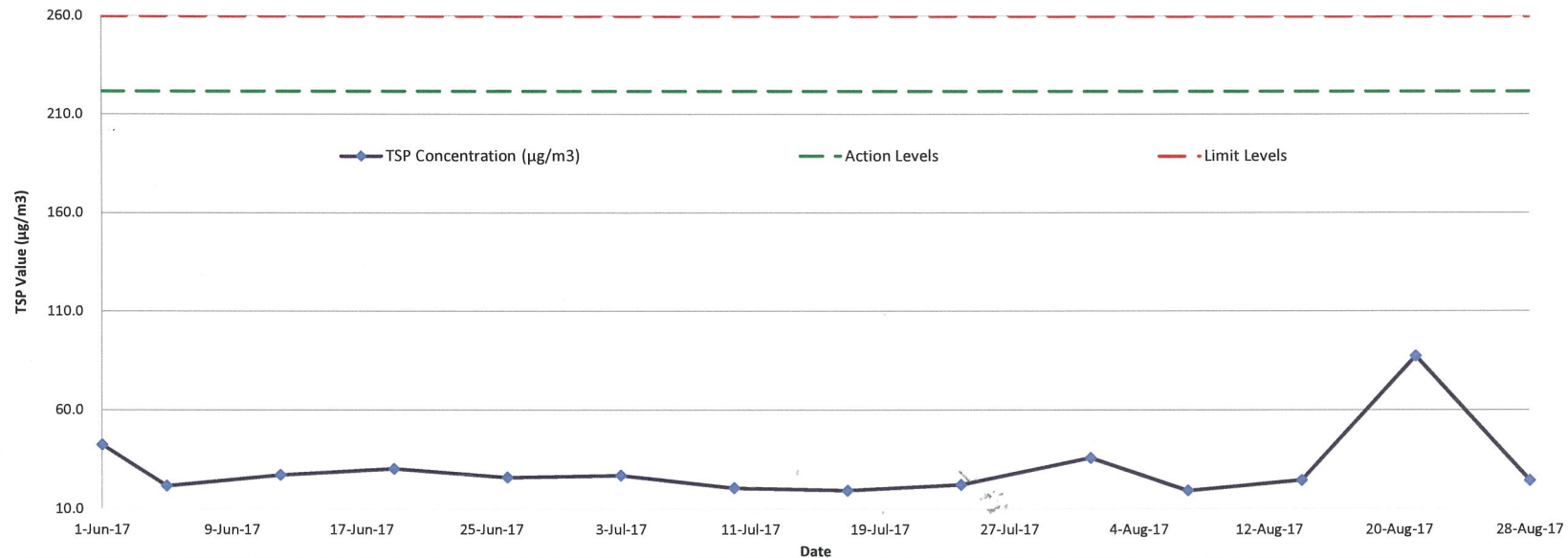
Wind Speed:



## APPENDIX H (1) Impact Air Quality Monitoring Results : 24-Hour TSP at K11 (Q14: June - August 2017)

Location	Monitoring Date	Start Time	Weather Conditions	Temperature	Elapse Time		Flow Rate (CFM)			Average Flow Rate	TSP Concentration (µg/m3)	Action Levels	Limit Levels
					Initial	Final	Sampling Hours	Initial	Final				
K11 Art Mall	1-Jun-17	10:00	Fine	29.2	816717	819233	25	24	24	24	42.4	221.6	260
	5-Jun-17	10:38	Fine	31.9	819233	821503	23	34	35	35	21.6	221.6	260
	12-Jun-17	9:00	Rainy	29.4	821503	823775	23	34	35	35	27.1	221.6	260
	19-Jun-17	8:52	Rainy	25.9	823775	826259	25	34	35	35	30.2	221.6	260
	26-Jun-17	9:30	Overcast	29.6	826259	828648	24	34	34	34	25.8	221.6	260
	3-Jul-17	10:30	Overcast	30.7	828648	831061	25	30	32	31	26.8	221.6	260
	10-Jul-17	8:30	Cloudy	28.0	831061	833603	25	36	36	36	20.4	221.6	260
	17-Jul-17	7:30	Overcast	26.0	833603	836252	26	34	34	34	19.2	221.6	260
	24-Jul-17	7:30	Sunny	27.0	836252	838901	26	34	34	34	22.1	221.6	260
	1-Aug-17	7:45	Sunny	28.0	838901	841497	26.0	40	42	41	35.7	221.6	260
	7-Aug-17	11:15	Overcast	32.0	841497	843931	24.3	24	24	24	19.0	221.6	260
	14-Aug-17	8:30	Sunny	29.0	843931	846447	25.2	32	32	32	24.4	221.6	260
	21-Aug-17	8:45	Sunny	29.6	846447	848964	25.2	33	34	34	87.2	221.6	260
28-Aug-17	9:00	Overcast	24.7	848964	851480	25.2	31	32	32	24.3	221.6	260	

### 24-Hours TSP Monitoring Results (June - Aug 2017)

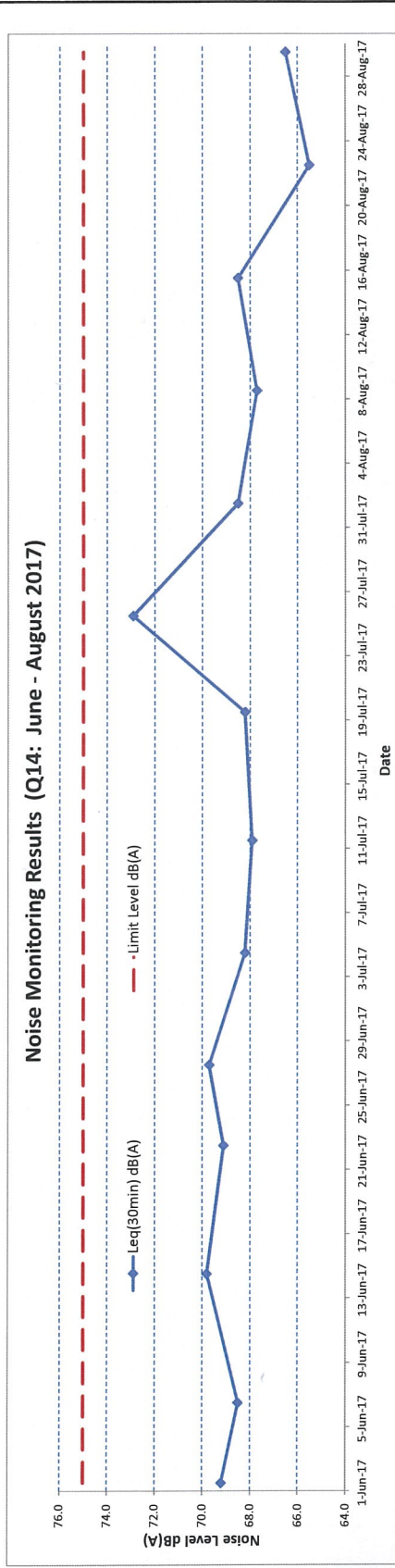




(2) Noise Impact Monitoring Results at K11 (Q14: June - August 2017)

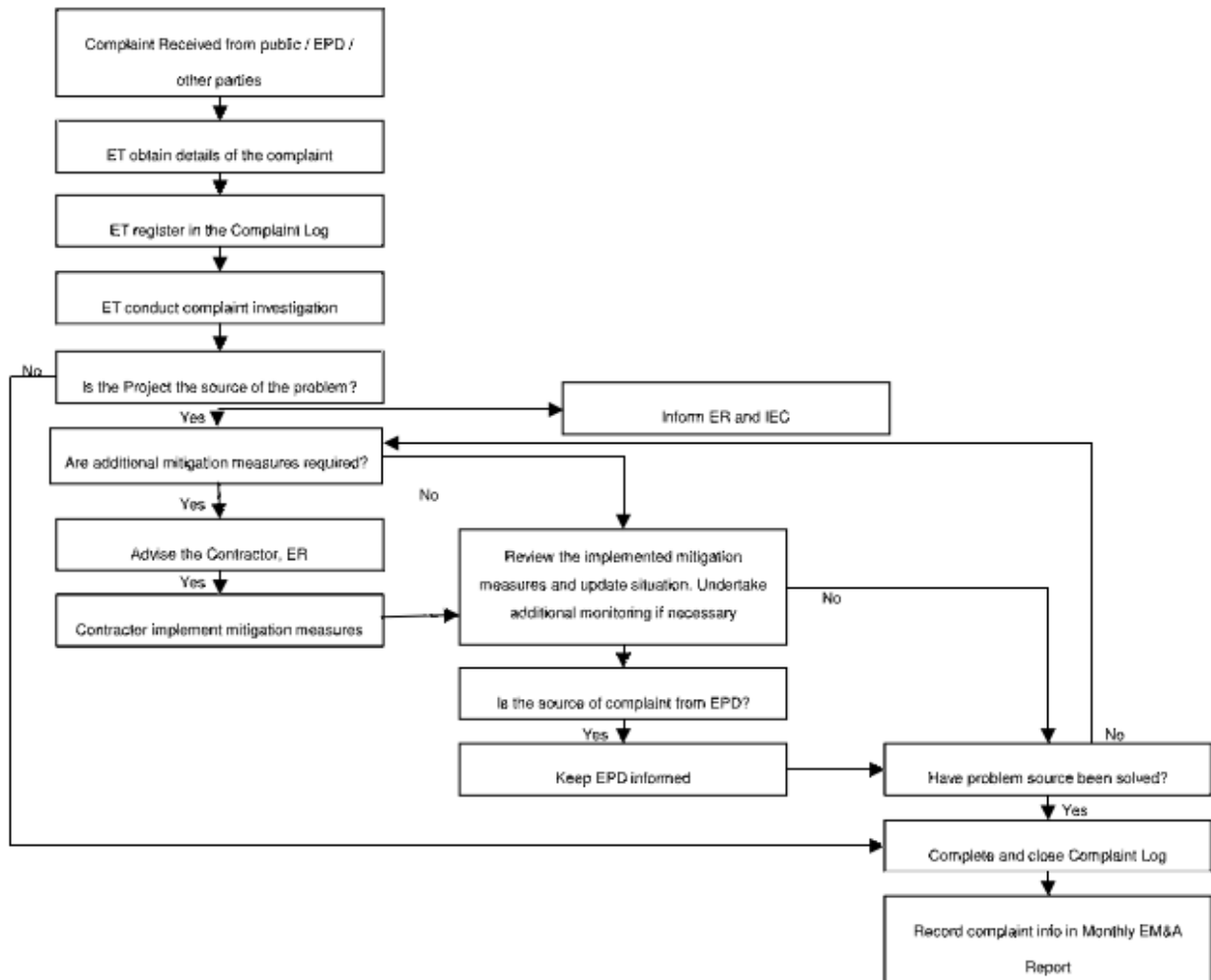
Monitoring Locations	Date	Weather Conditions	Wind Speed (m/s)	Start Time	End Time	Background Level dB(A)	Limit Level dB(A)	Leq(30min) dB(A)	L10(30min) dB(A)	L90(30min) dB(A)
K11 Art Mall	1-Jun-17	Overcast	3.9	10:09	10:39	65.3	75	69.2	71.5	66.0
	6-Jun-17	Sunny	0.1	10:14	10:44	65.3	75	68.5	70.0	67.0
	14-Jun-17	Sunny	0.2	10:46	11:16	65.3	75	69.8	71.0	68.0
	22-Jun-17	Sunny	0.3	10:06	10:36	65.3	75	69.1	69.5	67.5
	27-Jun-17	Cloudy	2.5	9:45	10:15	65.3	75	69.7	70.5	67.5
	4-Jul-17	Cloudy	0.6	10:28	10:58	65.3	75	68.2	69.0	66.5
	11-Jul-17	Sunny	0.0	10:18	10:48	65.3	75	67.9	68.5	66.5
	19-Jul-17	Sunny	0.1	13:19	13:49	65.3	75	68.2	69.0	67.0
	25-Jul-17	Sunny	0.2	10:12	10:42	65.3	75	72.9	77.0	67.0
	1-Aug-17	Cloudy	0.1	10:23	10:53	65.3	75	68.5	70.0	66.5
	8-Aug-17	Cloudy	0.3	11:16	11:46	65.3	75	67.7	68.5	66.0
	15-Aug-17	Cloudy	0.1	10:06	10:36	65.3	75	68.5	70.0	66.5
	22-Aug-17	Sunny	0.1	10:28	10:58	65.3	75	65.5	66.5	64.0
	29-Aug-17	Sunny	0.4	10:05	10:35	65.3	75	66.5	68.5	64.5

Red Bold indicates an exceedance of Limit Level



# APPENDIX I FLOW CHART FOR HANDLING ENVIRONMENTAL COMPLAINTS

## Complaint Response Procedure



# APPENDIX J WASTE MANAGEMENT RECORDS

## Monthly Summary Waste Flow Table for 2017 (year)

**Contract No:** C3840-13C Tsim Sha Tsui Station Carnarvon Road Subway  
**Date Reported:** 4-September-2017

Month	Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Non-inert C&D Wastes Generated Monthly						
	Total Quantity Generated (in '000m <sup>3</sup> )	Hard Rocks and Large Broken Concrete (See Note 3)	Reused in the Contract (in '000m <sup>3</sup> )	Reused in other Projects (in '000m <sup>3</sup> )	Disposed as Public Fill (in '000m <sup>3</sup> )	Imported Fill (in '000m <sup>3</sup> )	Metals (in '000kg)	Paper/ cardboard packaging (in '000kg)	Plastics (see Note 2) (in '000kg)	Chemical Waste (in '000kg)	Others, e.g. general refuse (in '000m <sup>3</sup> /tonne)
Carried from Project Start	4.9473	-	-	-	4.9473	-	-	-	-	-	0.0387
Jan	0.6189	-	-	-	0.6189	-	-	-	-	-	0.0017
Feb	0.9219	-	-	-	0.9219	-	-	-	-	-	0.0021
Mar	1.2994	-	-	-	1.2994	-	-	-	-	-	0.0045
Apr	0.6942	-	-	-	0.6942	-	-	-	-	-	0.0048
May	0.5717	-	-	-	0.5717	-	-	-	-	-	0.0034
June	0.4316	-	-	-	0.4316	-	-	-	-	-	0.0020
Sub-total	4.5377	-	-	-	4.5377	-	-	-	-	-	0.0185
July	0.0801	-	-	-	0.0801	-	-	-	-	-	0.0145
Aug	0.0274	-	-	-	0.0274	-	-	-	-	-	0.0056
Sept	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-
Total	4.6452	-	-	-	4.6452	-	-	-	-	-	0.0386
Acc. Total	9.5925	(accumulated quantity of the project = carried amount + this year amount)				-	-	-	-	-	0.0773

**Notes:**

- (1) The performance targets are given below:
  - All excavated materials to be sorted for recovering the inert portion of C&D materials, e.g. hard rocks, soil and broken concrete, for reuse on the Site or disposal to designated outlets;
  - All metallic waste to be recovered for collection by recycling contractors;
  - All cardboard and paper packaging (for plant, equipment and materials) to be recovered, properly stockpiled in dry and covered condition to prevent cross contamination;
  - All chemical wastes to be collected and properly disposed of by specialist contractors; and
  - All demolition debris to be stored to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other fitting / materials that have established recycling outlets.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) Broken concrete for recycling into aggregates.
- (4) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.