



Maeda Corporation

QUARTERLY EM&A REPORT (MARCH TO MAY 2017)

MTRCL Contract C3840-13C

Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works



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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. Kenneth Chow / Environmental Engineer II

12 June 2017

Dear Sirs

Consultancy Agreement A130-13 Independent Environmental Checker for CRS and LTS CRS - Verification for 13th Quarterly Environmental Monitoring and Audit (EM&A) Report (March 2017 to May 2017) (Report No.: EB001340R00541)

We refer to the 13th Quarterly EM&A Report (March 2017 to May 2017) received under cover of the email from the Environmental Team, Arcadis Design & Engineering Limited, dated on 9 June 2017.

We have no comment and have verified the captioned report (Report No.: EB001340R00541).

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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Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works

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Report No	EB001340R00541	

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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 corrective actions were required as the site inspection and environmental audit during the Reporting Period recorded no deficiencies, non-compliance or adverse environmental impacts within the site of the project and on the sensitive receivers environed with the site;

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 'MCC') 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 in 2017.
- 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 13th quarterly EM&A report (hereinafter referred as 'This Report') covering construction period from 1st March to 31st May 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 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.*

Item	Description	License/Permit Status	
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.	

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

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 Pe	riod
--	------

Item	Description		
	Construction Activities Undertaken during the Reporting Period		
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	Erection framework for vertical blinding		
5	Construction of vertical blinding		
6	Excavation of the mined tunnel		
7	Excavation of C&C tunnel		
8	Construction of C&C tunnel		

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 Monitoring of 1-Hour Total Suspended Particulates (hereinafter referred as '1-Hr TSP') is required to be conducted on a weekly basis when exceedances of 24-Hr TSP were recorded, following the Event and Action Plan presented in *Appendix F*.

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:

Parameter	Action Level	Limit Level
24-Hr TSP	For baseline level ≤200 µg/m ³ , Action level = (130% of baseline level + Limit level)/2 For baseline level >200 µg/m ³ , Action level = Limit level	260
1-Hr TSP	For baseline level ≤384 µg/m ³ , Action level = (130% of baseline level + Limit level)/2 For baseline level >384 µg/m ³ , Action level = Limit level	500

Table 2-1-1 Derivation of Action and Limit Levels for Air Quality at K11, µg/m³

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, µg/m³

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;
 - 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**.

Monitoring Date 01-Mar-17	24-Hr TSP 130.3	A/L Le	VCI3
01-1001-17	130.3		
06-Mar-17	63.6		
13-Mar-17	51.3		
20-Mar-17	46.7		
27-Mar-17	91.1		
05-Apr-17	52.4		
10-Apr-17	34.7	Action Level: 221.6	Limit Level: 260
18-Apr-17	59.5		
24-Apr-17	82.0		
04-May-17	62.7		
08-May-17	63.4		
15-May-17	23.0		
22-May-17	46.1		
Mean (Min – Max)	62.1 (23.0 – 130.3)		

Table 3-1-1 Summary of 24-Hr TSP Monitoring Results, µg/m³

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 (thereinafter 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*.

Monitoring Date	<i>Leq</i> (30 min)	A/L Levels	
01-Mar-17	69.1	Action Level:	
07-Mar-17	69.6	Any documented complaint against	
14-Mar-17	68.4	construction noise.	
21-Mar-17	68.5		
28-Mar-17	69.1		
05-Apr-17	66.2		
11-Apr-17	67.9		
18-Apr-17	66.3		
25-Apr-17	67.8		
02-May-17	67.5	Limit Level: 75 dB(A)	
09-May-17	67.9		
16-May-17	68.1		
23-May-17	66.1		
Mean (Min – Max)	68.0 (66.1 – 69.6)		

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

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 As shown in *Table 4-1-1*, no deficiencies or non-compliance of environmental mitigation measures or adverse environmental impacts were observed during the Reporting Period.

Date	Deficiencies or findings	Follow-Up Action
	Follow-up item(s)	
	No follow-up item.	Not required.
07-March-2017	Observation(s) on the day of inspection	
-	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
16-March-2017	No follow-up item.	Not required.
-	Observation(s) on the day of inspection	
-	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
21-March-2017	No follow-up item.	Not required.
-	Observation(s) on the day of inspection	
-	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
28-March-2017	No follow-up item.	Not required.
-	Observation(s) on the day of inspection	
-	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
05-April-2017	No follow-up item.	Not required.
-	Observation(s) on the day of inspection	
-	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
10-April-2017	No follow-up item.	Not required.
-	Observation(s) on the day of inspection	
	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
18-April-2017	No follow-up item.	Not required.
-	Observation(s) on the day of inspection	
_	No deficiency was observed on site.	Not required.

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

Table 4-1-1 (Continued)

	Follow-up item(s)	
25-April-2017	No follow-up item.	Not required.
	Observation(s) on the day of inspection	
	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
04-May-2017	No follow-up item.	Not required.
04-111ay-2017	Observation(s) on the day of inspection	
	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
09-May-2017	No follow-up item.	Not required.
	Observation(s) on the day of inspection	
	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
	No follow-up item.	Not required.
16-May-2017	Observation(s) on the day of inspection	
	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
	No follow-up item.	Not required.
23-May-2017	Observation(s) on the day of inspection	
	No deficiency was observed on site.	Not required.
	Follow-up item(s)	
00 Mar 0047	No follow-up item.	Not required.
29-May-2017	Observation(s) on the day of inspection	
	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
Mar 2017	0	0
Apr 2017	0	0
May 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
Mar 2017	0	5
Apr 2017	0	5
May 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
Mar 2017	0	0
Apr 2017	0	0
May 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. demolishment of the Entrance D2 and excavation works, 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.

7 COMMENTS AND RECOMMENDATIONS

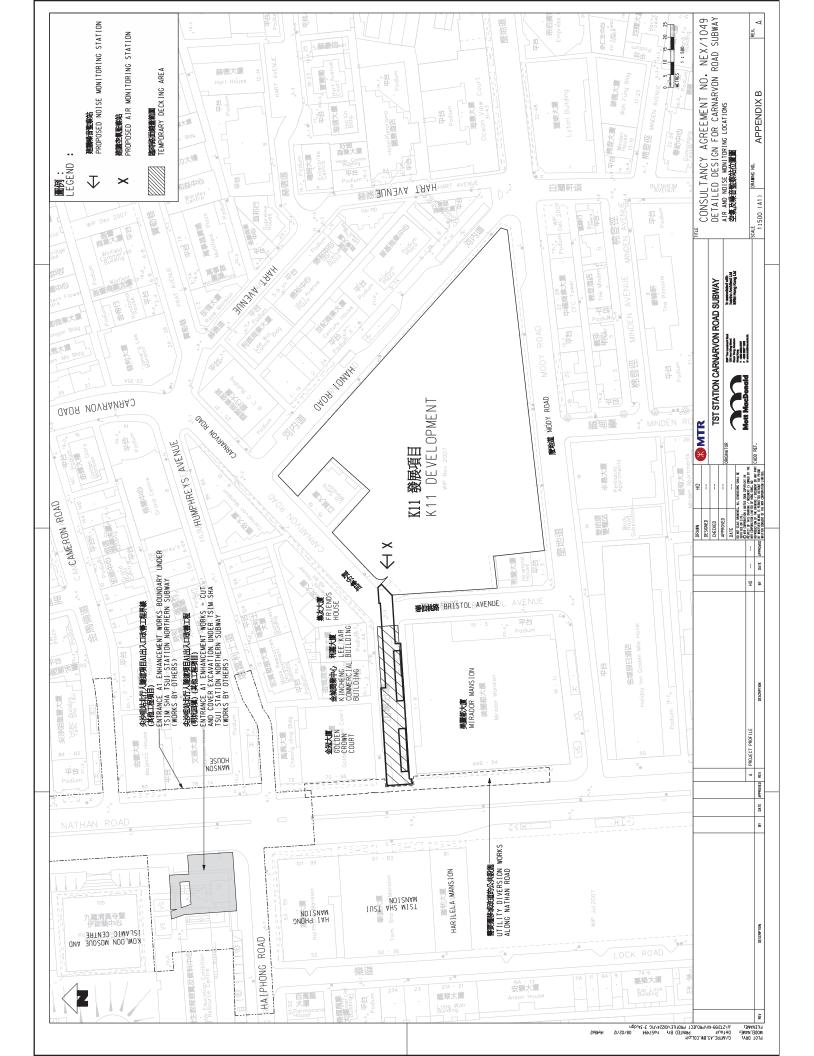
7.1 Conclusion

- 7.1.1 Neither NOE & the associated NOE investigation nor follow-up actions were required as the environmental monitoring results registered no exceedances of A/L Levels of air quality and construction noise 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 noisy construction activities such as piling works were being 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.

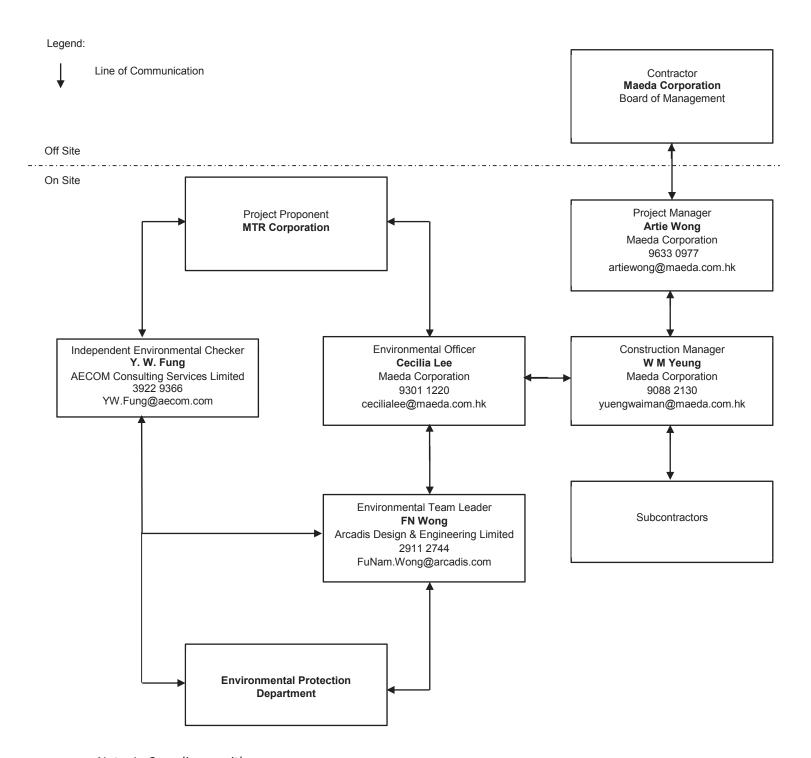
APPENDIX A SITE LOCATION PLAN



APPENDIX B

MANAGEMENT STRUCTURE

Project Organization Chart in Environmental Management (Rev.04)



*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

	MTR					C	ONTR	ACI	6384	HU-1	50 I	SIII	Sna	isu	stat	uon,	Car	nar	von	ROS	iu 3l	uwa	/				
)	Activity Name	Orig Dur		Plann Finish		otal Float Oct	N D Ja	an F	M Apr		2014 J Jul	AS	S Oct	ND	Jan F	М	Apr M	20	15 Jul /	AS	Oct N	DJa	an F	M Apr		2016 J Jul	
liminary Ma	ster Programme Revision 2	8270	d 14-Oct-1	3 31-Ju	l-16	Od												-									
reliminaries		8270	d 14-Oct-1	3 31-Ju	ŀ16	Od																					
Contract Key [lates	0d	14-Oct-1	3 14-00	xt-13	Od																					
C3840-CD-20	Date of Commencement	0d	14-Oct-1	3		0d 🕨 🗅	ate of Con	nmence	ement																		
Specified Degr	ees of Completion	Od	31-Jul-16	6 31-Ju	F16	Od																					
C3840-CD-2A	Complete to Deg. 1 status for all civil engineering works and ABWF in Subway outside K11 Lot Boundary (31 Jul 16)	0d		31-Ju	F16	0d																					•
Possession of	Works Area As PS Clause P8 & PS Appendix G	0d	31-Oct-1	3 31-00	xt-13	Od																					
C3840-AD-20	Access Date for Works Area 3840.W1 (subject to SLG/TMLG Approval)	0d	31-Oct-1	3		0d 🔫	Adcess D	Date for	Works	Area 3	840.W1	(subje	ct to SI	.G/TML	G Appro	oval)											
nitial Site Surv	ey	35d	I 31-Oct-1	3 10-De	ec-13	Od																					
C3840-SS-20	Validate the survey record and carry out any necessary additional survey at Works Areas 3840.W1 & W2	35d	I 31-Oct-1	3 10-De	ec-13	0d ►	- Vali	idate th	e survey	record	l and ca	rry out	any ne	cessar	y additio	nal sur	vey at \	Vorks	Areas	3840.	W1 & W	2					
emporary Wo	rks Design & Approval Process (Incl. Demolition)	12d	I 16-Oct-1	3 30-00	xt-13	0d																					
Temporary T	affic Mangement Scheme (TTM)	12d	16-Oct-1	3 30-00	ct-13	Od																					
C3840-TTN	Appoint Traffic Consultant	0d		16-00	ct-13	Od 🕨 A	Appoint Tra	iffic Cor	nsultant																		
C3840-TTM	A-110 Pepare & submit review by Eng Outline TTM Schemes as per PS P20.4	6d	17-Oct-1	3 23-00	ct-13	0d •	Pepare & s	submit	review by	/ Eng (Dutline	TM So	chemes	as per	PS P20	.4											
C3840-TTN	I-120 Eng review Outline TTM Schemes	4d	24-Oct-1	3 28-00	ct-13	0d -	Eng revie	w Qutlir	ne TTM \$	Schem	es																
C3840-TTM	I-130 Prepare Detailed TTMS	5d	24-Oct-1	3 29-00	ct-13	0d -	Prepare D	Detailed	ITTMS																		
C3840-TTM	I-140 Discussion and agree in priniciple at TMLG Meeting	1d	30-Oct-1	3 30-00	ct-13	0d 🍯	Discussio	on and	agree in	prinicip	ole at TN	ILG M	eeting														
narvon Ro	ad Subway and Entrances	7690	d 14-Nov-1	3 22-Ju	n-16	8d																					
	ence 1 (Advance Ground Works & Piling Works)	1350	d 14-Nov-1	3 02-Ma	ay-14	8d																					
Advance Gro	und Works	69d	14-Nov-1	3 08-Fe	b-14	Od																					
C3840-AG		69d				0d			rial Pit/tre	ench e	xcavatio	'n															·
C3840-AG			27-Dec-1			0d			-drilling v																		
	ing for Vertical Shaft		27-Feb-1			8d			J																		
C3840-EVS			27-Feb-1			Od			Mobiliz	ation f	or Biling	Pig or	od Sotu														
C3840-EVS		35d				0d										rook	aaakat										
									G		1	÷	1	1	minimum	TOCK	sockei										}
C3840-EVS	-	18d				8d			Π																		
C3840-EVS	-		1 08-Apr-14			8d			Γ	Curt	ain Gro	uting ve	erticals	haft													
	I Shaft Excavation)		d 03-May-1			8d																					
C3840-SH-10	D Pump Test	24d	03-May-1	14 31-Ma	ay-14	8d			L		Pump T	est															
C3840-SH-110	Excavation for 1st layer 140m3 50m3/day	3d	03-Jun-14	4 05-Ju	n-14	8d					Excave	tion foi	r1stlay	er 140	n3 50m3	3/day											
C3840-SH-12) Install 1st waling, strut & legging wall	4d	06-Jun-14	4 10-Ju	n-14	8d				ام ا	Instal	1st wa	ıling, stı	ut & leç	iging wa	I											
C3840-SH-13) Shotcrete 1st layer	2d	11-Jun-14	4 12-Ju	n-14	8d				ŀ	Shotc	rete 1s	t layer														
			1	,	D-/- 7		at 40	. :	i	•	. :	•	. :			. :		. :	:				i		 		_
Actual W						Date: 11-O							Pre	imi	nary	Ma	aster	· Pr	ogr	am	me			ľ		Date	e
	emaining Work				P	Page 1 of 3	5					-			J	-		_	9	_				ľ	27-F	eb-14	4

Critical Remaining Work

A	S	Oct	N	D	Jan	F	М	Apr	М	20 J	17 Jul	A	S	Oct	N	D	018 Jan
	з г прк		De	g. 1 :	statu	S TOP	aii c	ivil e	ngine	erin	g wa	rks :	and /		- IN	SUDV	vay (
							a/P/	ΡM									
е					isio	n			Che	ecke	ed			Арр	oro∖	/ed	
1		R	ΕV	2			E	3G					AW	/			

Remarks : It is being reviewed and will be updated soon

	🔀 MTR						FRACT	55040	-130	- 131		isu	Jial	.on, 0	and		Juan	Jub	way			
	Activity Name	Orig Dur	Planned Start	Planned Finish	Total Float) Jan F	MAprin	20 N J		S Oct	ND	lan F	M Apr		015 Jul A	50	ct N	D lan	FM	Apr M	2016 I J JI
C3840-SH-140	Excavation for 2nd layer 190m3 50m3/d	4d	13-Jun-14	17-Jun-14	8d			101 / ¢1 1			on for 2nd								Diodan		i pi m	
C3840-SH-150	Install 2nd waling, strut & lagging wall	4d	18-Jun-14	4 21-Jun-14	8d				Ŀ	Install 2	id waling,	strut &	agging v	/all								
C3840-SH-160	Shotcrete 2nd layer	2d	23-Jun-14	4 24-Jun-14	8d				Ŀ	Shotcre	te 2nd lay	/er										
C3840-SH-170	Install Decking with Subframe to cover all area	4d	25-Jun-14	28-Jun-14	- 8d					Install	ecking v	/ith \$ubf	ame to	over all a	rea							
C3840-SH-180	Excavation for 3rd layer 360m3 50m3/d	7d	30-Jun-14	4 08-Jul-14	8d				Ļ	Exca	ation for	3rd layer	360m3	50m3/d								
3840-SH-190	Install 3rd waling, strut & lagging wall	5d	09-Jul-14	14-Jul-14	8d				Ļ	linsta	ll 3rd wali	ng, strut	& laggin	g wall								
3840-SH-200	Shotcrete 3rd layer	2d	15-Jul-14	16-Jul-14	8d				Ļ	Sho	crete 3rd	layer										
840-SH-210	Excavation for 4th layer117m3 (soil) @ 50m3/d, 205m3 (rock) 3m3/d	71d	17-Jul-14	10-Oct-14	8d				ļ			xcavatio	ሰ for 4th	layer 117r	h3 (soil)	@ 50m3	/d, 205m	n3 (rock) 3m3/d			
840-SH-230	Shotcrete 4th layer	2d	11-Oct-14	13-Oct-14								Shotcret	• 4th lay	er								
3840-SH-240	Make formation and Blinding	2d	14-Oct-14	4 15-Oct-14	8d						Γ,	Make for	mation a	nd Blindin	g							
840-SH-250	Modify waling and strut	3d	16-Oct-14	18-Oct-14	8d						Γ		/aling an									
840-SH-260	Adjustable Steel Platform Setup for Grouting & Piling Works)	12d		01-Nov-14	8d						Ĺ			el Platforn	Setun	for Grouti	na & Pili	nd Worl	ks)			
3840-SH-270	Horizontal Grouting (48 Nos. Grout Holes)			4 03-Dec-14	8d						Ĺ			Grouting					,			
3840-SH-280	Horizontal Pipe Roofing (59 Nos. Pipe Pile)			4 07-Jan-15										ontal Pipe								
																	. гіре г					
D-SH-290	Horizontal Re-grouting	14d		5 23-Jan-15	8d							-	Γ	prizontal R								
40-SH-300	Install Portal Frame	3d		5 27-Jan-15	8d								Ι Γ Ι	stall Porta								
840-SH-310	Cut Pipe Pile	4d	28-Jan-15	5 31-Jan-15	8d									ut Pipe Pi	le							
el (ELS, Excavati	ion & Construction of Tunnel)	408d	02-Feb-15	5 22-Jun-16	8d																	
3840-TU-100	Excavation, shotcrete & install steel framework support for 1st 6m	70d	02-Feb-15	5 02-May-15	8d -								-		Exca	vation, sh	otcrete 8	& install	steel fra	mework	support	for 1st
40-TU-110	Excavation, shotcrete & install steel framework support for next 7m	75d	04-May-1	5 01-Aug-15	8d									ا	_		xcavatio	on, shoto	crete & i	nstall ste	el framev	work su
840-TU-120	Excavation, shotcrete & install steel framework support for last 7m	75d	03-Aug-15	5 31-Oct-15	8d											┕╴		Exc	avation	shotcre	te & insta	all steel
840-TU-130	Install intermediate portal frame	3d	02-Nov-15	5 04-Nov-15	8d													Ins	tallinter	mediate	portal fra	ame
C3840-TU-140	Install intermediate horizontal pipe roofing incl. mobilization & demobilization	19d	05-Nov-15	5 26-Nov-15	8d														Install ir	htermedi	ate horizo	ohtal pip
3840-TU-150	Horizontal re-grouting for intermediate section	6d	27-Nov-15	5 03-Dec-15	- 8d													- 1-1	Horizo	ntal re-g	routing fo	or interr
3840-TU-160	Install Support, excavation & shotcret for intermediate section	33d	04-Dec-1	5 14-Jan-16	8d													L	_	Install Su	ipport, ex	kçavatic
3840-TU-180	Install dowel bars & concrete collar beams	10d	15-Jan-16	6 26-Jan-16	8d															Install	dowel bar	rs & co
3840-TU-210	Breakthrough (core & saw cut) into K11 Lot & associated works	18d	27-Jan-16	6 19-Feb-16	8d														L	Bre	akthroug	jh (care
3840-TU-220	Construct Slab 2 Bays (2 pours)	12d	20-Feb-16	6 04-Mar-16	8d															- - c	Construct	Slab 2
3840-TU-230	Construct Wall & Roof (incl. removal of struts) 2 Bays (8 pours)	64d	05-Mar-16	6 25-May-16																		Const
3840-TU-240	Curing	10d	26-May-16	6 06-Jun-16	8d																L	🗖 Curi
3840-TU-250	Dismantle falsework	10d	31-May-16	6 11-Jun-16	8d																	— Dis
3840-TU-260	Grouting into void above	6d	13-Jun-16	6 18-Jun-16	8d																	G
																						ГЦ
Actual Work	♦ ♦ Milestone			Data	Date: 11-	Oct-1	3															
Remaining Wor	rk				Page 2 of	3					Pre	limi	nary	Mast	ter P	rogra	amm	ne			27	Da 7-Feb-
Critical Remaini	ing Work				5 5.									Criti							21	-rep-

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A	s	Oct	N	D	Jan	F	М	Apr	М	20 J)17 Jul	A	S	Oct	N	D	018 Jan
~	0		N		Jan	1	101	Лрі	101	5	Jui	<u>^</u>	0	001		U	Jan
		supp		or la	st 7n	h											
	ng in sec	cl. m	obiliz	zatio	h & d	emo	biliz	ation			- - - - - - - - - - - -						
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uting	into	void	abov	/e													
					Ма	eda	a/P/	'ΡΜ	P/2								
e		Т	F	Rev	isio		Ť		Che	ecke	ed			App	orov	/ed	
4			EV.				-	3G					AW				
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MTR						CON	TRA	CT C384	40-130	C Tsin	n Sha T	sui S	tation, Ca	rnarvo	n Roa	d Sub	way								
Activity ID	Activity Name	Orig	Planned	Planned	Total Float				20	014				2015					2016		i			2017	
		Dur	Start	Finish		Oct N	D Jan	F M Apr	M J	Jul A	S Oct N	D Jar	n F M Apr I	1 J Jul	A S	Oct N	D Jan	F M Apr N	∕l J Jul	A S	Oct N D J	lan F I	M Apr M	J Jul	A S Oct N
	C3840-TU-270 Cut Pipe pile at interface	3d	20-Jun-16	22-Jun-16	8d														Left Cut	Pipe pile	le at interface				
Bu	ilding Services & ABWF Works	70d	27-Apr-16	21-Jul-16	8d																				
E	3S & ABWF Works at Subway Conc. Level and Plant Room & D3	70d	27-Apr-16	21-Jul-16	8d																				
	C3840-BSS-120 ABWF Works to Deg. 1 Completion	70d	27-Apr-16	21-Jul-16	8d													-		ABWF	Works to Deg. 1	1 Complet	ion		

Actual Work Milestone	Data Date: 11-Oct-13		
Remaining Work		Preliminary Master Programme	Date
	Page 3 of 3		27-Feb-14
Critical Remaining Work		Extract Critical Path 1	

	Maeda/F	P/PMP/2	
e	Revision	Checked	Approved
1	REV 2	BG	AW

MTR	CONTRACT	C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway	MAEDA
Activity ID Activity Name	Orig Planned Planned Total Float Dur Start Finish Oct N D Jan F	2014 2015 M Apr M J Juli A S Oct N D Jan F M Apr M J Juli A S Oct N D Jan F M A	2016 2017 018
Preliminary Master Programme Revision 2	898d 11-Oct-13 23-Oct-16 0d		
Preliminaries	898d 11-Oct-13 23-Oct-16 0d		
Contract Key Dates	3d 11-Oct-13 14-Oct-13 0d		
C3840-CD-10 Date of Contract Award	0d 11-Oct-13 0d Date of Contract A	vard	
C3840-CD-20 Date of Commencement	0d 14-Oct-13 0d → Date of Commence	ment	
Specified Degrees of Completion	0d 23-Oct-16 23-Oct-16 0d		
C3840-CD-2C Complete energisation of the power isolator in the Telephone Equipment Rm (23 Oct	0d 23-Oct-16 0d		Complete energisation of the power isolator in the Telephone Equir
Possession of Works Area As PS Clause P8 & PS Appendix G	0d 31-Oct-13 31-Oct-13 0d		
C3840-AD-20 Access Date for Works Area 3840.W1 (subject to SLG/TMLG Approval)	0d 31-Oct-13 0d 🕁 Access Date fo	Works Area 3840.W1 (subject to SLG/TMLG Approval)	
Initial Site Survey	35d 31-Oct-13 10-Dec-13 0d		
C3840-SS-20 Validate the survey record and carry out any necessary additional survey at Works	35d 31-Oct-13 10-Dec-13 0d ➡ ₩ Validate th	s survey record and carry out any necessary additional survey at Works Areas 3840.W1 & W2	
Areas 3840.W1 & W2 Procurement of Subcontract Packages	4d 11-Oct-13 16-Oct-13 0d		
Preliminaries and Utilities Diversion	4d 11-Oct-13 16-Oct-13 0d		
C3840-PRC-140 Temporary Traffic Diversion (Consultant)	4d 11-Oct-13 16-Oct-13 0d -1 Temporary Traffic		
		Jive slow (Consultant)	
Temporary Works Design & Approval Process (Incl. Demolition)	12d 16-Oct-13 30-Oct-13 0d		
Temporary Traffic Mangement Scheme (TTM)	12d 16-Oct-13 30-Oct-13 0d		
C3840-TTM-100 Appoint Traffic Consultant	0d 16-Oct-13 0d Appoint Traffic Co	Isultant	
C3840-TTM-110 Pepare & submit review by Eng Outline TTM Schemes as per PS P20.4	6d 17-Oct-13 23-Oct-13 0d 1 Pepare & submit	review by Eng Outline TTM Schemes as per PS P20.4	
C3840-TTM-120 Eng review Outline TTM Schemes	4d 24-Oct-13 28-Oct-13 0d 1 Eng review Outli	ne TTM Schemes	
C3840-TTM-130 Prepare Detailed TTMS	5d 24-Oct-13 29-Oct-13 0d Prepare Detailed	ттия	
C3840-TTM-140 Discussion and agree in priniciple at TMLG Meeting	1d 30-Oct-13 30-Oct-13 0d - Discussion and	agree in priniciple at TMLG Meeting	
Carnarvon Road Subway and Entrances	774d 14-Nov-13 28-Jun-16 Od		
Utility Diversion	57d 10-Feb-14 17-Apr-14 0d		
C3840-UTD-290 Diversion of Gasmain as necessary	57d 10-Feb-14 17-Apr-14 0d	Diversion of Gasmain as necessary	
Open Cut Sequence 1 (Advance Ground Works & Piling Works)	444d 14-Nov-13 18-May-15 0d		
Advance Ground Works	69d 14-Nov-13 08-Feb-14 0d		
C3840-AGW-020 Trial Pit/trench excavation	69d 14-Nov-13 08-Feb-14 0d	rial Rit/trench excavation	
Piles & Grouting for Vertical Shaft	39d 27-Feb-14 14-Apr-14 0d		
C3840-EVS-010 Mobilization for Piling Rig and Setup	4d 27-Feb-14 03-Mar-14 0d	Medization for Piling Rig and Setup	
C3840-EVS-020 52 nos. pipe piles with 1m. to 2.2m. minimum rock socket	35d 04-Mar-14 14-Apr-14 0d	52 nos. ppe piles with 1 m. to 2.2m. minimum rock socket	
Piles & Grouting for Temporary Staricase & C&C Subway	59d 15-Apr-14 28-Jun-14 0d		
C3840-ETS-020 70 nos. pipe piles along Grid Line A with 1m. to 3.1m minimum rock socket	47d 15-Apr-14 14-Jun-14 0d	■ Image: The second	
Actual Work Milestone	Data Date: 11-Oct-13		Maeda/P/PMP/2
Remaining Work	Page 1 of 5	Preliminary Master Programme	Date Revision Checked Approved 27-Feb-14 REV 2 BG AW
Critical Remaining Work		Extract Critical Path 2	

	MTR	CONTRACT	C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway	
vity ID	Activity Name	Orig Planned Planned Total Float	2014 2015 2016 M Apr M J Jul A S Oct N D Jan F M Apr M J Jul A S Oct N D JAN F M Apr	2017
C3840-ETS-030	Curtain Grouting along Grid Line A	24d 29-May-14 26-Jun-14 2d		
C3840-ETS-070	Type III Sheet Plle, 355m along between Grids A & B	6d 22-Apr-14 28-Apr-14 0d	Type III Sheet Pile, 355m along between Grids A & B	
C3840-ETS-080	Toe Grouting	8d 29-Apr-14 09-May-14 Od	Top Grouting	
C3840-ETS-090	Mobilization for Piling Rig and Setup	4d 10-May-14 14-May-14 0d	Mobilization for Piling Rig and Setup	
C3840-ETS-110 :	37 nos. pipe piels along Grid Line B with 1m. to 1.5m. minimum rock socket	25d 15-May-14 13-Jun-14 Od	37 nos. pipe piels along Grid Line B with 1m. to 1.5m. minimum rock socket	
C3840-ETS-120 (Curtain Grouting along Grid Line B	13d 14-Jun-14 28-Jun-14 Od	Curtain Grouting along Grid Line B	
Piles & Grouting for Rema	ining Section of Cofferdam at D2	20d 24-Apr-15 18-May-15 0d		
C3840-ECD-010	Mobilization for Piling Rig and Setup	4d 24-Apr-15 28-Apr-15 0d	P	
C3840-ECD-020 2	23 nos. pipe piles along Grid Line B at D2 with 1m. to 3.2m minimum rock socket	16d 29-Apr-15 18-May-15 0d	23 nos. pipe piles along Grid Line B at D2 with 1m. to 3.2m minimum rock	sokket
	avation for Temporary Staricase)	209d 30-Jun-14 11-Mar-15 0d		
	avation of remporary stancase)			
Excavation		93d 30-Jun-14 20-Oct-14 0d		
C3840-EXC-100	Pump test prior to excavate for temporary staricase	24d 30-Jun-14 28-Jul-14 Od	Putting test prior to excavate for temporary staricase	
C3840-EXC-120	Excavation for 1st layer at D1 208m3	4d 29-Jul-14 01-Aug-14 0d	Excavation for 1st layer at D1:208h3	
C3840-EXC-130 I	Install 1st waling & strut 21ton & temporary support to underground UUs	7d 02-Aug-14 09-Aug-14 0d	Install 1st walling & strut 21ton & temporary support to underground UUs	
C3840-EXC-140	Install Truss for Suport Temp D1	6d 11-Aug-14 16-Aug-14 0d	Install Truss for Suport Temp D	
C3840-EXC-150 \$	Shotcrete 1st layer	2d 18-Aug-14 19-Aug-14 Od	Shotcrete 1st layer	
C3840-EXC-160	Demolish D1 4m below GL	6d 20-Aug-14 26-Aug-14 0d	Demolish D1 4m below GL	
C3840-EXC-170	Excavation for 2nd layer at D1 230m3	5d 27-Aug-14 01-Sep-14 0d	Excavation for 2nd layer at D1 230m3	
C3840-EXC-180	Install 2nd waling & strut 17ton	7d 02-Sep-14 10-Sep-14 0d	Iḥstall 2nd waling & strut 17ton	
C3840-EXC-190 \$	Shotcrete 2nd layer	2d 11-Sep-14 12-Sep-14 0d	♣ \$hot¢rete 2nd layer	
C3840-EXC-200	Excavation for 3rd layer at D1 216m3	5d 13-Sep-14 18-Sep-14 0d	- ■ Excavation for 3rd layer at 101 216m/3	
C3840-EXC-210	Install 3rd waling & strut 15ton	6d 19-Sep-14 25-Sep-14 0d	-∎ Install 3rd waling & strut 15ton	
	Shotcrete 3rd layer	4d 26-Sep-14 30-Sep-14 0d	Shotcrete 3rd layer	
			Г	
	Excavation for 4th layer at D1 166m3	4d 03-Oct-14 07-Oct-14 0d	Excavation for 4th layer at D1 166m3	
	Install channel on opening	3d 08-Oct-14 10-Oct-14 0d	linstali channelon opening	
C3840-EXC-250 \$	Shotcrete 4th layer	4d 11-Oct-14 15-Oct-14 0d	Shotcrete 4th layer	
C3840-EXC-260 I	Make formation and Blinding	4d 16-Oct-14 20-Oct-14 0d	Make formation and Binding	
RC Structure (Temporary S	Staricase)	116d 21-Oct-14 11-Mar-15 0d		
C3840-TSC-100 I	Install Dowel bars (130#)	6d 21-Oct-14 27-Oct-14 0d	Install Dowel bars (120#)	
C3840-TSC-110 (Const. Bay1 : 18m3	6d 28-Oct-14 03-Nov-14 0d	Const. Bayl : 18m3	
C3840-TSC-120	Const. Bay2 : 16m3	9d 04-Nov-14 13-Nov-14 0d	Const. Bay2 ::16m3	
C3840-TSC-130	Const. Bay3 : 6m3	6d 14-Nov-14 20-Nov-14 0d	Const. Bay3: 6m	
Actual Work	♦ ♦ Milestone	Data Date: 11-Oct-13		Maeda/P/PMP/2
Remaining Work		Page 2 of 5	Preliminary Master Programme Date 27-Feb-14	Revision Checked Approved
Critical Remaining W	Vork		Extract Critical Path 2	

		MTR					CONTRACT C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway
Activity ID		Activity Name	Orig Dur	Planned Start	Planned Finish	Total Float	2014 2015 2016 2017 ct N D Jan F M April M J Jul A S Oct N D Jan F M April M J Jul A S Oct N D Jan F M April M J Jul A S Oct N D Jan F M April M J Jul A S Oct N D Jan F M April M J Jul A S Oct N D Jan F M April M Jul A S Oct N D Jan F M April M Jul A S Oct N D Jan F M April M Jul A S Oct N D Jul
С	3840-TSC-150	Const. Bay5 : 35m3	13d	21-Nov-14	05-Dec-14		
c	3840-TSC-160	Const. Bay6 : 39m3	15d	06-Dec-14	4 23-Dec-14	Od	Const. Bay6. 39m3
с	3840-TSC-170	Const. Bay7 : 34m3	14d	16-Dec-14	1 03-Jan-15	0d	Const Bay: : 34m3
c	3840-TSC-180	Const. Bay8 : 4m3	6d	31-Dec-14	4 07-Jan-15	Od	under Stein
С	3840-TSC-190	Const. Bay9 : 44m3	14d	08-Jan-15	23-Jan-15	Od	Const. Eay9 : 44m3
с	3840-TSC-240	Temporary Staircase Commissioning & open for use	Od		11-Mar-15	Od	Temporary Staircase Commissioning & open for use
Open (Cut Sequence 3 (A	dvance Ground Works & Piling Works at D2 & in front of D1)	33d	12-Mar-15	5 23-Apr-15	Od	
C384	40-ELS-510	Joint Survey & Remove existing BS & ABWF Services at D2	6d	12-Mar-15	5 18-Mar-15	Od	Joint Survey & Remové existing BS & ABWF Services at D2
C384	40-ELS-520	Const Flood Barrier at Concourse and D2	9d	19-Mar-15	5 28-Mar-15	Od	Const Flood Barrier at Concourse and D2
C384	40-ELS-530	Demolish D2 above GL	12d	30-Mar-15	5 16-Apr-15	Od	Demdlish D2 above GL
C384	40-ELS-540	Set Conc block in D2 opening	6d	17-Apr-15	23-Apr-15	Od	Set:Conc black in D2;opening
Open (Cut Sequence 4 (E	xcavation for Subway in front of D1)	182d	27-Jun-15	02-Feb-16	Od	
C384	40-ELSD1-100	Excavation for 1st layer 378m3, 25m3/day	15d	27-Jun-15	5 15-Jul-15	Od	Excavation for 1st/layer 378m3, 25m3/day
C384	40-ELSD1-110	Install 1st waling & strut & Utility Support	24d	03-Jul-15	30-Jul-15	Od	Install 1st waling & strut & Utility Support
C384	40-ELSD1-130	Install Decking with Subframe to cover all area	12d	31-Jul-15	13-Aug-15	Od	🤟 İnstall Decking with Subframe to cover all area
C384	40-ELSD1-140	Shotcrete 1st layer	2d	14-Aug-15	5 15-Aug-15	Od	Shotcrete 1st;layer
C384	40-ELSD1-150	Excavation for 2nd layer 421m3 50m3/day	9d	17-Aug-15	5 26-Aug-15	Od	Excavation for 2nd layer 421m3 50m3/day
C384	40-ELSD1-160	Install 2nd waling & strut	8d	21-Aug-15	5 29-Aug-15	Od	Install 2nd waling & strut
C384	40-ELSD1-170	Shotcrete 2nd layer	2d	31-Aug-15	5 01-Sep-15	Od	Shotcrete 2nd layer
C384	40-ELSD1-180	Demolish existing subway 7.5m below GL	6d	02-Sep-15	6 08-Sep-15	Od	Demojish existing subway 7.5m below GL
C384	40-ELSD1-190	Excavation for 3rd layer 421m3, 50m3/d	9d	09-Sep-15	5 18-Sep-15	Od	Excavation for 3rd layer 421m3; 50m3/d
C384	40-ELSD1-200	Install 3rd waling & strut	8d	14-Sep-15	5 22-Sep-15	Od	Install 3rd waling & strut
C384	40-ELSD1-210	Shotcrete 3rd layer	2d	23-Sep-15	5 24-Sep-15	Od	Shotcrete 3rd layer
C384	40-ELSD1-220	Demolish existing subway 10.6m below GL	6d	25-Sep-15	5 03-Oct-15	Od	Demofish existing subway 10,6m below GL
C384	40-ELSD1-230	Excavation for 4th layer 443m3, 50m3/d	9d	05-Oct-15	14-Oct-15	Od	Excavation for 4th layer 443m3, 50m3/d
C384	40-ELSD1-240	Install 4th waling & strut	8d	09-Oct-15	17-Oct-15	Od	jnstall 4th waing & strut
C384	40-ELSD1-250	Shotcrete 4th layer	2d	19-Oct-15	20-Oct-15	Od	Shotcrete 4th layer
C384	40-ELSD1-260	Excavation for 5th layer 443m3, 50m3/d	9d	22-Oct-15	31-Oct-15	Od	Excavation for 5th layer 443m3, 50m3/d
C384	40-ELSD1-270	Install 5th waling & strut	8d	27-Oct-15	04-Nov-15	Od	└╾∰ InstallSth waling & strut
C384	40-ELSD1-280	Shotcrete 5th layer	2d	05-Nov-15	5 06-Nov-15	Od	Shotcrete 5th layer
C384	40-ELSD1-290	Excavation Soil for 6th layer 392m3, 50m3/d	8d	07-Nov-15	5 16-Nov-15	Od	Excavation Soil for 6th layer 392m3, 50m3/d
C384	40-ELSD1-300	Excavation Rock (Grade 2) 402m3, 8m3/d	50d	17-Nov-15	5 16-Jan-16	Od	Excavation Rock (Grade 2) 402m3, 3m3/d
						ata Date: 11-	
	ctual Work	♦ Milestone			Da		Preliminary Master Programme Date Revision Checked Approv
	emaining Work ritical Remaining) Work				Page 3 of	f 5 27-Feb-14 REV 2 BG AW
							Extract Critical Path 2

	MTR				CONTRACT C3840-13C Tsim Sha Tsu	ui Station, Carnarvon Road Subwa	у	
Activity ID	Activity Name	Orig Planned Dur Start	Planned Finish	Total Float	2014 Oct N D Jan F M Apr M J Jul A S Oct N [2016	2017 0' A S Oct N D Jan F M Apr M J Jul A S Oct N D Ja
C3840-ELSD1-310	Install 6th waling & strut	8d 18-Jan-16	6 26-Jan-16	0d			Install 6th waling & strut	
C3840-ELSD1-320	Shotcrete 6th layer	2d 27-Jan-16	6 28-Jan-16	0d			Shotcrete 6th layer	
C3840-ELSD1-330	Make formation and Blinding	4d 29-Jan-16	02-Feb-16	0d			Make formation and Blindi	ng
Open Cut Sequence 5 (C	Construction of Subway & D2)	116d 03-Feb-16	6 28-Jun-16	0d				
C3840-STR-110	Const. Bay1 : 4m3	6d 03-Feb-16	3 12-Feb-16	Od			Const. Bay1 : 4m3	
C3840-STR-120	Const. Bay2 : 123m3	10d 13-Feb-16	6 24-Feb-16	0d			Const. Bay2 : 123m3	
C3840-STR-130	Const. Bay3.1 : 125m3	10d 25-Feb-16	6 07-Mar-16	0d			Const. Bay3.1 : 125m	3
C3840-STR-140	Const. Bay3.2 : 120m3	15d 08-Mar-16	6 24-Mar-16	0d			Const. Bay3 2 : 12	lm3
C3840-STR-150	Const. Bay4 : 29m3	6d 18-Mar-16	6 24-Mar-16	0d			Const. Bay4 : 29m	3
C3840-STR-160	Const. Bay4.5 : 13m3	6d 23-Mar-16	6 01-Apr-16	0d			Const. Bay4.5 : 1	3m(3
C3840-STR-170	Const. Bay5 : 141m3	10d 31-Mar-16	6 12-Apr-16	0d			Const. Bay5 : 14	ит3
C3840-STR-180	Const. Bay6.1 : 130m3	12d 13-Apr-16	26-Apr-16	0d			Const. Bay6.1	: 130m3
C3840-STR-190	Const. Bay6.2 : 130m3	12d 18-Apr-16	30-Apr-16	0d			Const. Bay6.	2: 1130013
C3840-STR-200	Const. Bay6.3 : 130m3	12d 22-Apr-16	06-May-16	Od			≻ ⊟ Const. Bay6	3 130 <mark> n</mark> 3
C3840-STR-210	Const. Bay6.4 : 130m3	12d 27-Apr-16	11-May-16	Od			Const. Baye	.4: 130m3
C3840-STR-220	Const. Bay6.5 : 130m3	15d 03-May-1	6 20-May-16	Od			Const. Ba	/6.5 : 1\$0m3
C3840-STR-240	Const. Bay7 : 90m3	15d 06-May-1	6 24-May-16	0d			Const. Ba	y7: 90m3
C3840-STR-260	Const. Bay8.1 : 104m3	10d 12-May-10	6 24-May-16	Od			Cohst. Ba	y8;1:104m3
C3840-STR-270	Const. Bay8.2 : 104m3	10d 19-May-1	6 30-May-16	0d			Const. B	ay8.2 : 04m3
C3840-STR-280	Const. Bay8.5 : 39m3 (D2)	15d 25-May-1	6 11-Jun-16	0d			Çonst.	Baye.5 39m3 (D2)
C3840-STR-290	Curing, remove strut & falsework	14d 13-Jun-16	6 28-Jun-16	0d			Curi	ng, remwve strut;& falsewprk
Building Services & A	NRWF Works	533d 05-Jan-15	5 22-Oct-16	0d				
BS & ABWF Works at Te		54d 05-Jan-15		0d				
C3840-TSBA-100		0d	23-Jan-15	0d		► P Complețe RC works		
C3840-TSBA-110		40d 05-Jan-15		Od		Symplete Rowerks The stallation of BS and ABWF works		
C3840-TSBA-120		40d 05-Jan-15		1d		CN&SE access & cable routing connecting to		
C3840-TSBA-130		6d 25-Feb-1		Od				
C3840-TSBA-140		6d 04-Mar-1		Od		Inspection prior to open for public use		
C3840-TSBA-150		0d	11-Mar-15	0d		Open for public use		
		96d 29-Jun-16		Od				
C3840-BSM-100		56d 29-Jun-16	02-Sep-16	Od				BS 1st Fix
C3840-BSM-110	BS 2nd Fix	40d 03-Sep-16	6 22-Oct-16	0d				BS 2nd Fix
			Da	ata Date: 11	1-0ct-13		1	Maeda/P/PMP/2
Actual Work	♦ Milestone		Da		Prelim	inary Master Programme	Date	Revision Checked Approved
Critical Remaining				Page 4 c	015	xtract Critical Path 2	27-Feb-14	REV 2 BG AW
						Analt Chulder I alli 2		

	MTR					CONT	RACT	C3840-1	3C Tsim	Sha Tsu	i Stat	ion, Carn	arvon Ro	oad Subw	ay								
Activity ID	Activity Name		Planned Start	Planned Finish	Total Floa	Cct N D	Jan F	M Apr M	2014 J Jul A	S Oct N D	Jan F	M Apr M	2015 J Jul A	S Oct N D	Jan F M	201 Apr M J	6 Jul A	S Oct N	J D Jan F	M Apr	2017 M J Jul	ASOC	018 ct N D Jan
C3840-BSM-120	Complete all BS works in TER	Od		22-Oct-16	00													G C	omplete all BS	works in Tf	ER		
						•		, , , ,															

Actual Work Milestone	Data Date: 11-Oct-13		
Remaining Work		Preliminary Master Programme	Date
Critical Remaining Work	Page 5 of 5		27-Feb-14
		Extract Critical Path 2	

	Maeda/F	P/PMP/2	
е	Revision	Checked	Approved
4	REV 2	BG	AW

APPENDIX D

IMPLEMENTATION SCHEDULE

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Implementation Schedule

Project Profile Ref.	Recommended Mitigation Measures Noise Impact	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
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 movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME; noise enclosure can achieve 15dB(A) reduction for PME; A typical design barrier with a steel frame of vertical / cartilever type would be adopted and located close to the noise generating part of PME; Barrier material of surface mass in excess of 7kg/m² shall be required to achieve the maximum screening effect (and minimum 10kg/m² for noise enclosure); 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. 	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 • The Code of Practice on Good Management Practice	To minimize construction noise	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control

1/5

Project Profile Ref.	 Recommended Mitigation Measures to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted; The statutory and non-statutory requirements and guidelines shall be complied with; 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; 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; Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical; Unused equipment shall be turned off; PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided; All plant and equipment shall be maintained regularly; and Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable. 	Objectives of the Recommended Measures & Main Concerns to address emissions	Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve Ordinance
S.3.2	Air Quality Impact Construction Dust Control Measures • Decking will be provided subsequent to the completion of surface excavation works. The duration	To minimise the dust impacts arising from the	Contractor	Work site	Construction Stage	Air Pollution Control (Construction

2/5

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
	 of decking is around 13 months after surface excavation works; Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather; Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers; Cover all excavated or stockpile of dusty material by impervious sheeting or spraying with water to maintain the entire surface wet; Provision of vehicle washing facilities at the exit points of the site; and Provision of tarpaulin covering of any dusty materials on a vehicle leaving the site. 	construction works				Dust) Regulation
	Water Quality Impact					
S.S.S	Construction Water Quality Impact Measures • 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. • 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.	To reduce water quality impact induced by the construction work	Contractor	Work Site	Construction Stage	ProPECC PN1/94; Water Pollution Control Ordinance

3/5

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
	 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. Site toilet facilities, if needed, should be chemical toilets or should have the foul water effluent directed to a foul sewer. 					
	Waste Management					
S.3.4	 Construction Waste Management Measures 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. Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner. The Contractor should adopt a trip ticket system for the disposal of C&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. Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes. 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 	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.

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
	recycling of materials and their proper disposal.					
	Landscape and Visual Impact					
S.3.5			Contractor	Temporary	Construction	EIAO
				Storage	Stage	
	barriers around works area with visually unobtrusive	construction works.		Area at		
	colours			Salisbury Road		
S.3.5	 Reinstating the affected amenity planting area at 	To prevent loss of	Contractor	Temporary	Operation	ETWB TCW No.
	Salisbury Road after the completion of works	planter after construction		Storage Area at	Stage	2/2004
				Salisbury		
				Road		

APPENDIX E

STATUS OF ENVIRONMENTAL LICENSES AND PERMITS



Contract No. C3840-13C Tsim Sha Tsui Station Carnarvon Road Subway

Licence Summary

ltem No.	Our Ref.	Govt. Ord.	Type? (License / 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 lubrucating oil, spent battery	
005	CNP#007	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit		18 - 01 - 2017	06 - 02 - 2017	15 - 02 - 2017	14 - 08 - 2017	Apply for 4nos Submersible Water pump (Electric) w/ whole site area	

APPENDIX F

EVENT AND ACTION PLAN

Event and Action Plan for Air Quality

In case the Action and Limit Levels are not complied during construction stage, the Event and Action Plan shown below should be followed.

Event / Action	ET	IEC	ER	Contractor
Action Level Exceedance for one sample	 Identify source; If valid, inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily. 	 Check monitoring data submitted by ET; Check Contractor's working method. 	1. Notify Contractor	 Rectify any unacceptable practice; Amend working methods if appropriate
Exceedance for two or more consecutive samples	 Identify source; Inform IEC and EPD; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial action required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measure properly implemented. 	 Submit proposals for remedial action to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit Level Exceedance for one sample	 Identify source; Inform ER and EPD; Repeat measurement to confirm finding; Increase 	 Check monitoring data submitted by ET; Check Contractor's working 	 Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC

Action	ET	IEC	ER	Contractor
	monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	 method; 4. Discuss with ET and the Contractor on possible remedial measures; 5. Advise the ER on the effectiveness of the proposed remedial measures; 6. Supervise implementation of remedial measures. 	measures properly implemented.	within 3 work days of notification; 3. Implement th agreed proposals; 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	 Notify IEC, ER, Contractor and EPD; Identify sources; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the 	 Discuss amongst ER, ET and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly. Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; In consultation with IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; 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. 	 Take immed action to avo further exceedance; Submit proposals for remedial actions to IE within 3 work days of notification; Implement th agreed proposals; Resubmit proposals if problem still under contro Stop the relevant port of works as determined to the ER until exceedance abated.

Event / Action	ET	IEC	ER	Contractor	
	results;				-
	8. If exceed stops, ce additiona monitorin	ase I			
					-

Event and Action Plan for Construction Noise

In case the Action and Limit Levels are not complied during the construction stage, the Event and Action Plan shown below should be followed.

Event / Action	ET	IEC	ER	Contractor
Action Level	 Notify IEC and Contractor. Carry out investigation. Report the results of investigation to the IEC and Contractor. Discuss with the Contractor and formulate remedial measures Increase monitoring frequency to check mitigation effectiveness. 	 Review the analyzed result submitted by ET. Review the proposed remedial measures by the Contractor and advise the ER accordingly. Supervise the implementation of remedial measures. 	 Confirm receipt of notification of exceedance Notify Contractor Require Contractor to propose remedial measures for the analysed noise problem Ensure remedial measures are properly implemented. 	 Submit noise mitigation proposals to IEC Implement noise mitigation proposals
Limit Level	 Notify IEC, ER, EPD and Contractor, and follow other actions Identify source Repeat measurement to confirm findings Increase monitoring frequency Check Contractor's working procedures to determine possible mitigation to be implemented Inform IEC, ER and EPD the causes and actions taken for the exceedances Assess effectiveness of 	 Discuss amongst ER, ET and Contractor on the potential remedial actions Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly Supervise the implementation of remedial measures 	 Confirm receipt of notification of exceedances Notify Contractor Require Contractor to propose remedial measures Ensure remedial measures are properly implemented 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. 	 Take immediate action to avoid further exceedance Submit proposals for remedial actions to IEC within 3 working days of notifications Implement the agreed proposals Revise and resubmit proposals if problem still not under control Stop the relevant portion of works as determined by the ER until the exceedance is abated

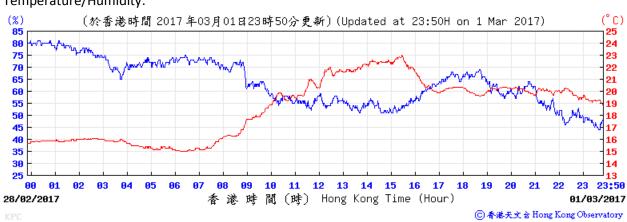
Event / Action	ET	IEC	ER	Contractor
	remedial actions and keep IEC, EPD, ER informed of the results			
	8. If exceedance stops, cease additional monitoring			

APPENDIX G

WEATHER INFORMATION EXTRACTED FROM HK OBSERVATORY

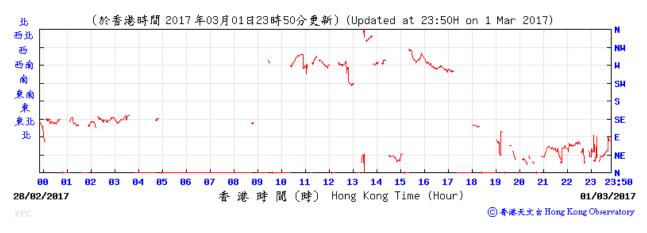
Day	Total Rainfall, mm	24-hr TSP	Noise	Remarks
1	0.0	✓	√	It was Cloudy without rainfall on site during noise monitoring.
2	0.0			
3	0.0			
4	0.0			
5	0.0			
6	0.0	✓		
7	0.0		√	It was Cloudy without rainfall on site during noise monitoring.
8	0.0			
9	0.0			
10	0.0			
11	0.0			
12	Trace			
13	0.5	✓		
14	1.0		√	It was drizzle on site during noise monitoring.
15	1.5			
16	0.4			
17	0.0			
18	Trace			
19	0.0			
20	Trace	✓		
21	0.0		√	It was sunny without rainfall on site during noise monitoring.
22	0.0			
23	0.0			
24	0.0			
25	0.0			
26	0.0			
27	0.0	✓		
28	0.3		√	It was sunny without rainfall on site during noise monitoring
29	2.4			
30	1.2			
31	0.5			
lean/Total	7.8			

King's Park Weather Station – 01 March 2017



Temperature/Humidity:

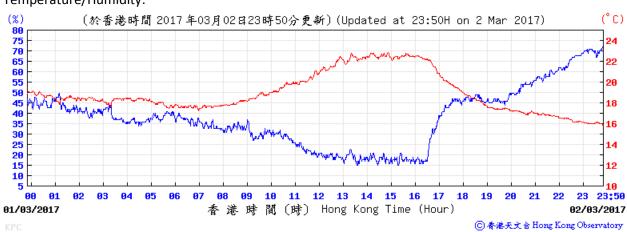
Wind Direction:







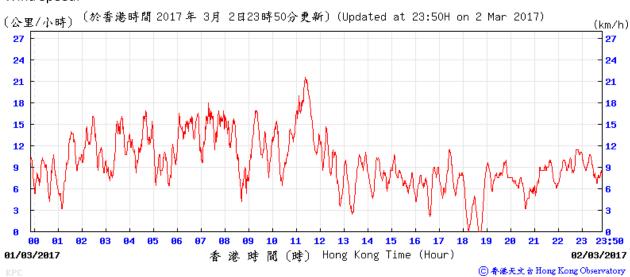
King's Park Weather Station – 02 March 2017



Temperature/Humidity:

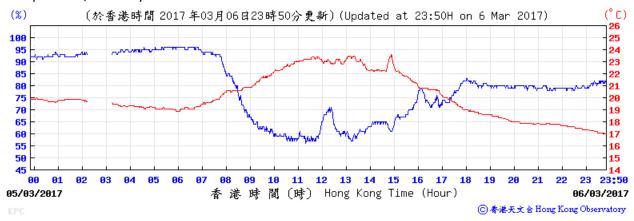
Wind Direction:



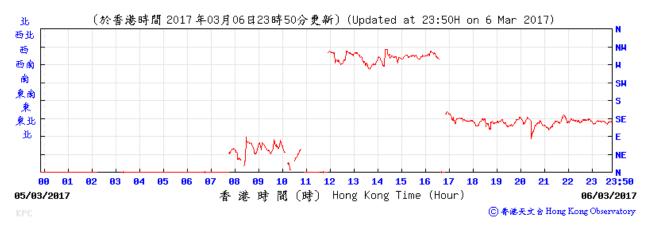


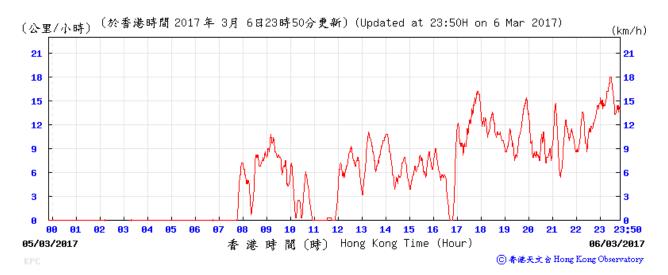
King's Park Weather Station – 06 March 2017

Temperature/Humidity:



Wind Direction:





King's Park Weather Station – 07 March 2017



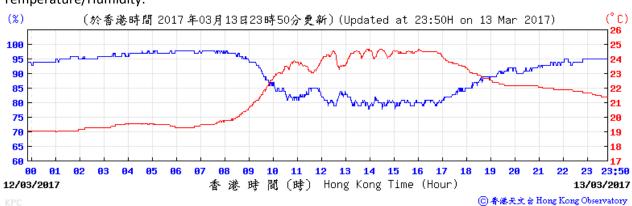






Wind Direction:

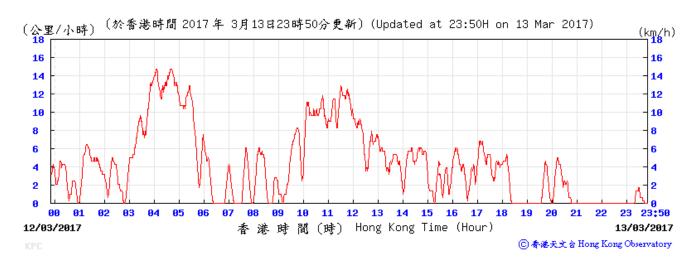
King's Park Weather Station – 13 March 2017



Temperature/Humidity:

Wind Direction:



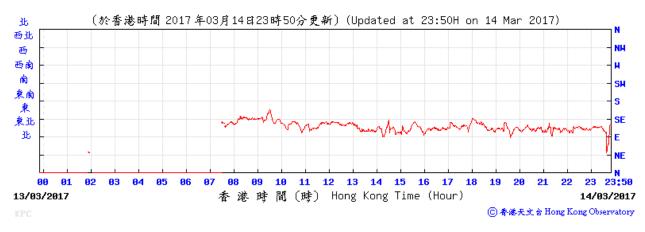


King's Park Weather Station – 14 March 2017



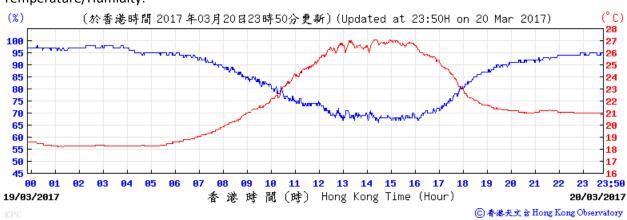
Temperature/Humidity:

Wind Direction:



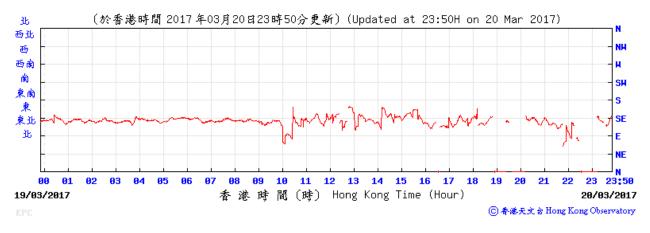


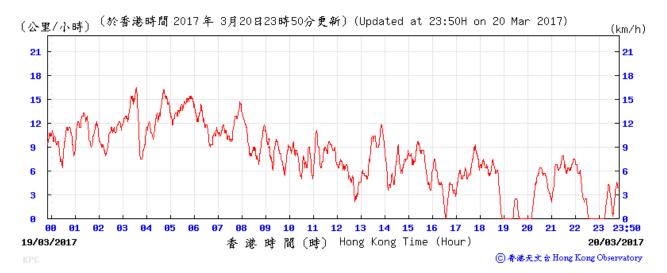
King's Park Weather Station – 20 March 2017



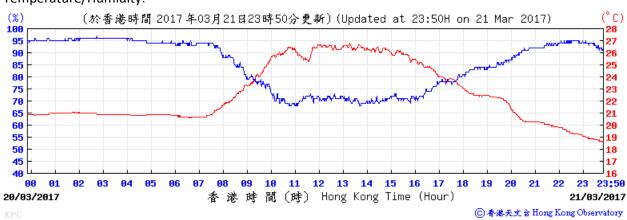
Temperature/Humidity:

Wind Direction:



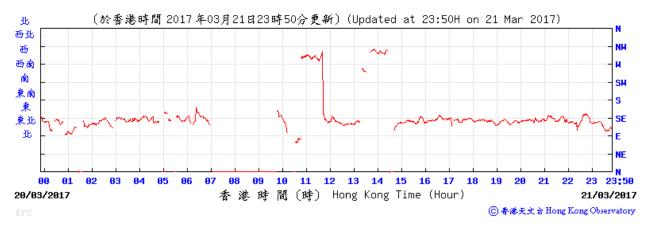


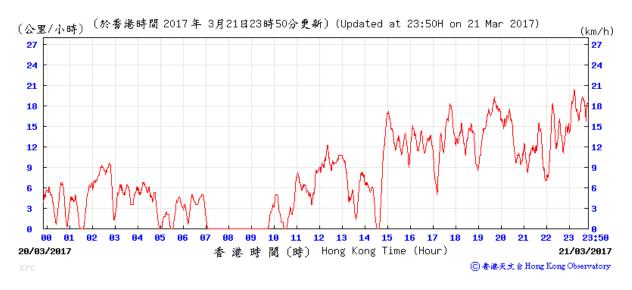
King's Park Weather Station – 21 March 2017



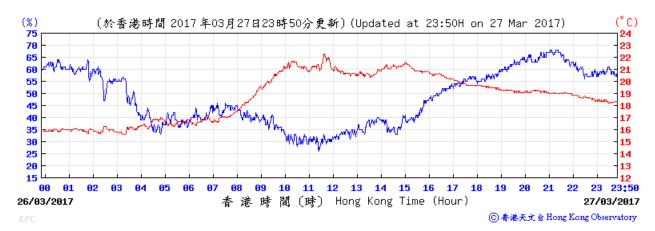
Temperature/Humidity:

Wind Direction:





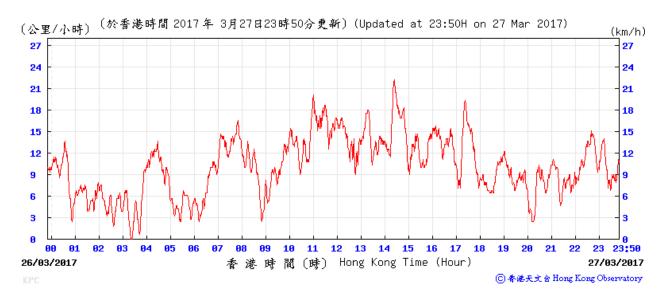
King's Park Weather Station – 27 March 2017



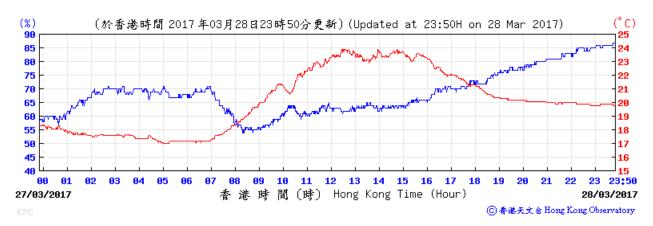
Temperature/Humidity:

Wind Direction:



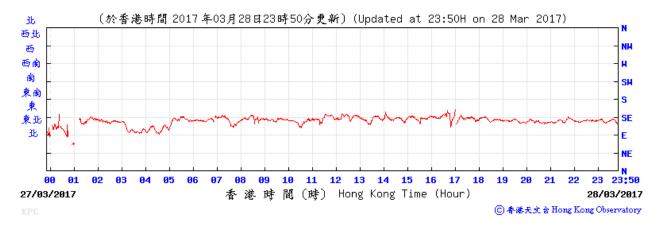


King's Park Weather Station – 28 March 2017



Temperature/Humidity:

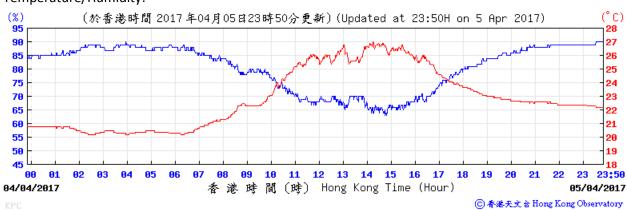
Wind Direction:





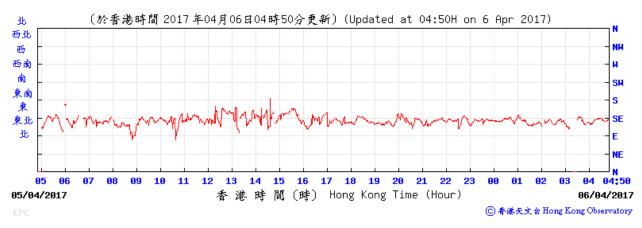
	Daily Total Rair	nfall at King's	Park HKC) Weather Monitoring Station - April 2017
Day	Total Rainfall, mm	24-hr TSP	Noise	Remarks
1	0.2			
2	0.0			
3	0.0			
4	0.0			
5	0.0		√	It was sunny without rainfall on site during noise monitoring.
6	0.3	✓		
7	0.0			
8	0.0			
9	0.0			
10	Trace	√		
11	0.6		√	It was sunny without rainfall on site during noise monitoring.
12	21.5			
13	Trace			
14	0.0			
15	0.0			
16	Trace			
17	Trace			
18	0.0	√	✓	It was sunny without rainfall on site during noise monitoring.
19	0.0			
20	3.1			
21	7.8			
22	6.6			
23	1.4			
24	Trace	√		
25	10.9		√	It was cloudy without rainfall on site during noise monitoring.
26	2.9			
27	3.5			
28	0.0			
29	0.0			
30	0.0			
Mean/Total	58.8			

King's Park Weather Station – 05 April 2017



Temperature/Humidity:

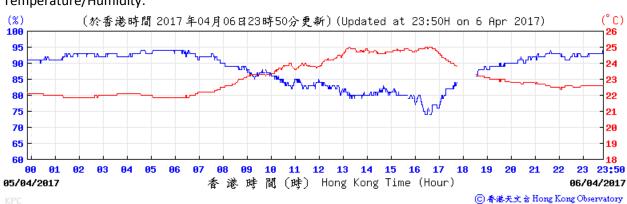
Wind Direction:



(於香港時間 2017 年 4月 6日 4時50分更新)(Updated at 04:50H on 6 Apr 2017) (公里/小時) 18 <u>(k</u>m/h) Ø A 18 19 20 21 04:50 05/04/2017 香港時間(時) Hong Kong Time (Hour) 06/04/2017

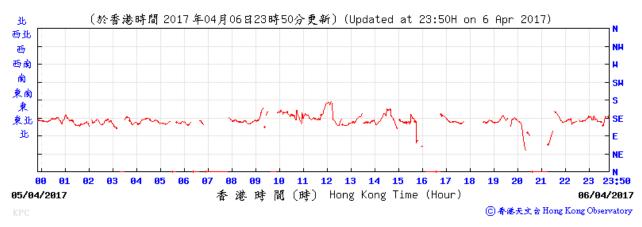
[◎] 香港天文 含 Hong Kong Observatory

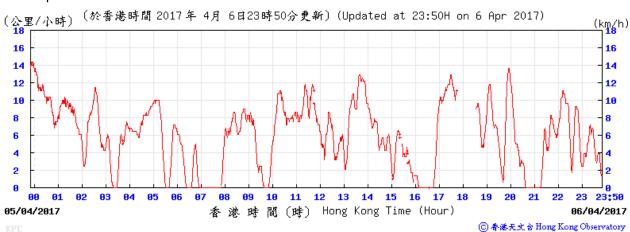
King's Park Weather Station – 06 April 2017



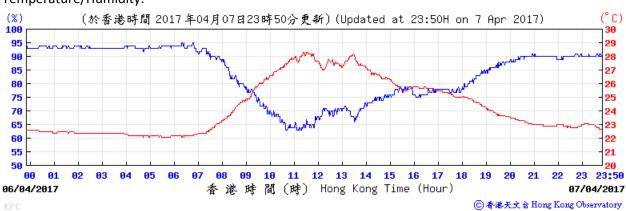
Temperature/Humidity:

Wind Direction:





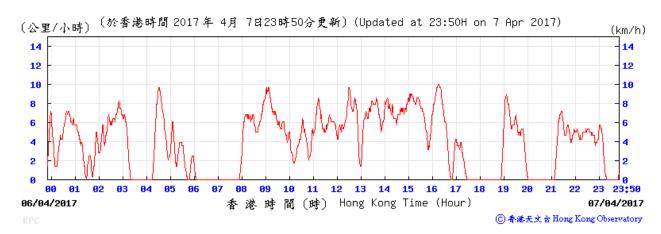
King's Park Weather Station – 07 April 2017



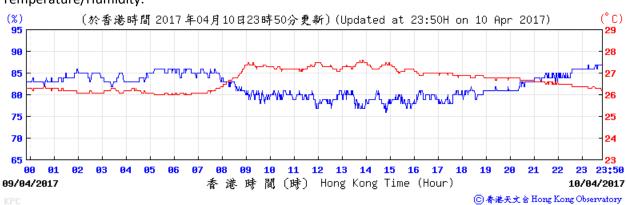
Temperature/Humidity:

Wind Direction:



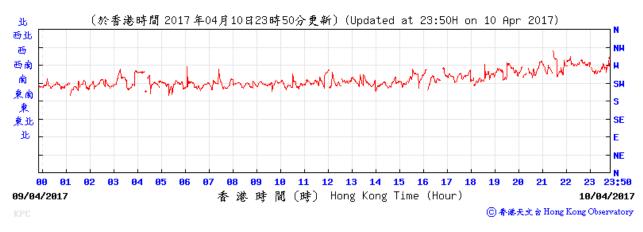


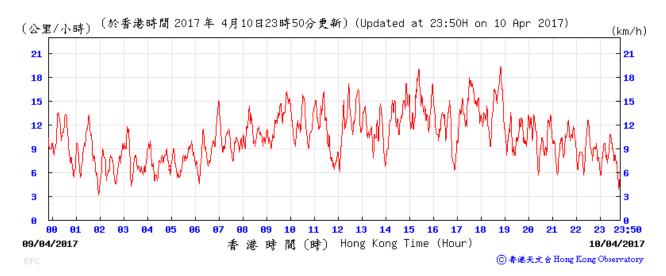
King's Park Weather Station – 10 April 2017



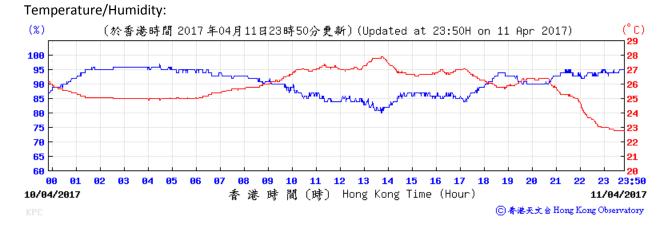
Temperature/Humidity:

Wind Direction:

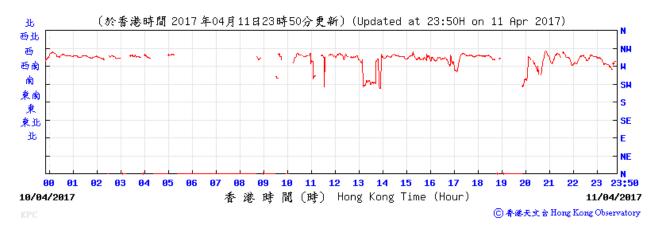


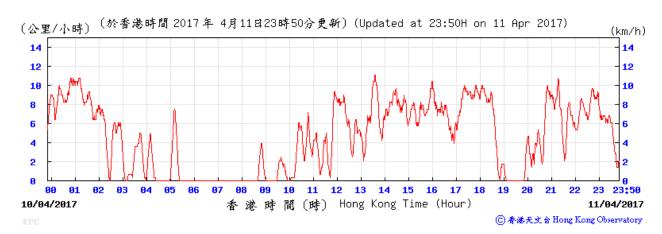


King's Park Weather Station – 11 April 2017

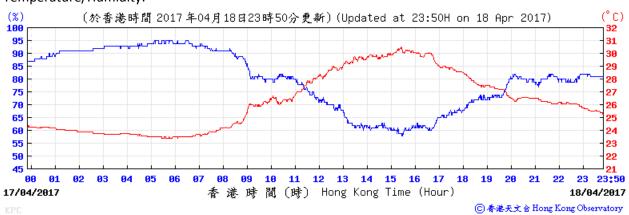


Wind Direction:



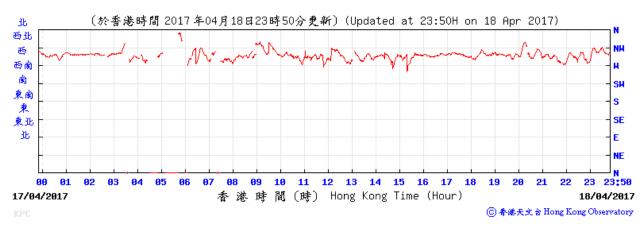


King's Park Weather Station – 18 April 2017



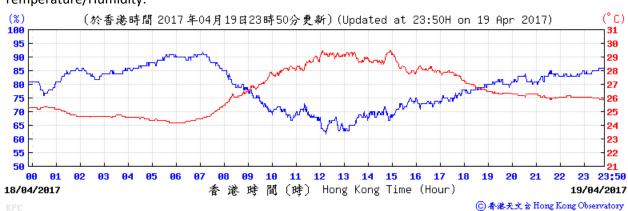
Temperature/Humidity:

Wind Direction:



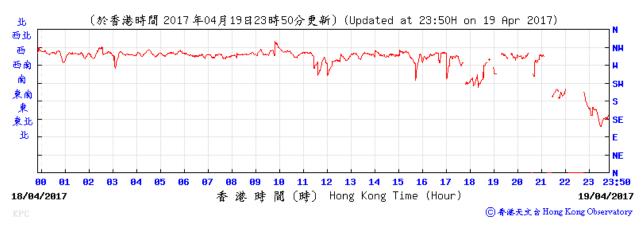


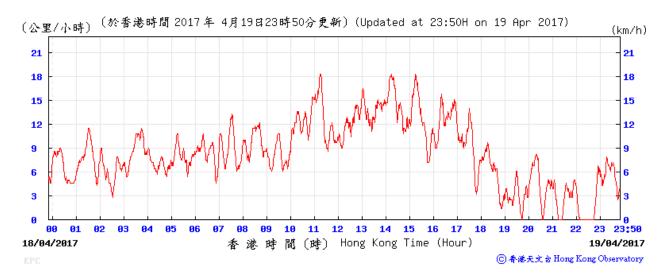
King's Park Weather Station – 19 April 2017



Temperature/Humidity:

Wind Direction:



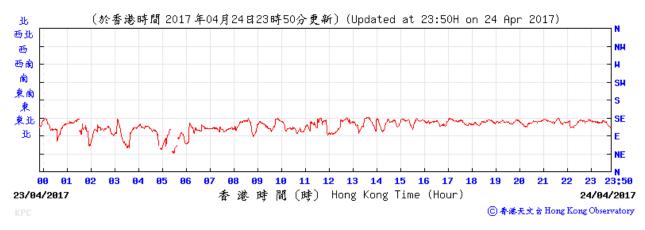


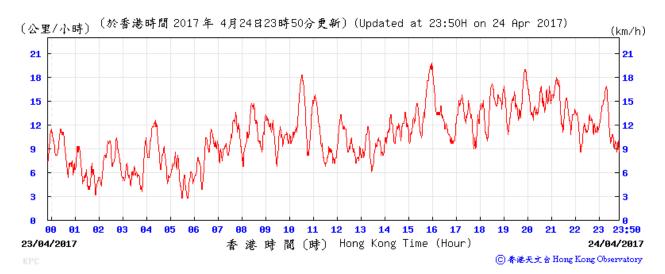
King's Park Weather Station – 24 April 2017



Temperature/Humidity:

Wind Direction:



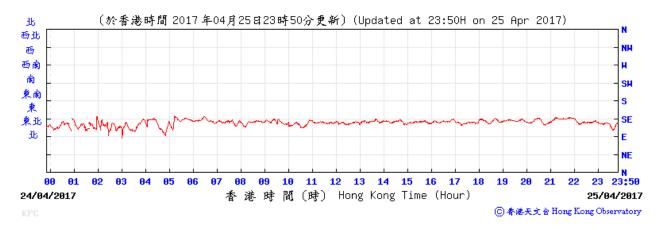


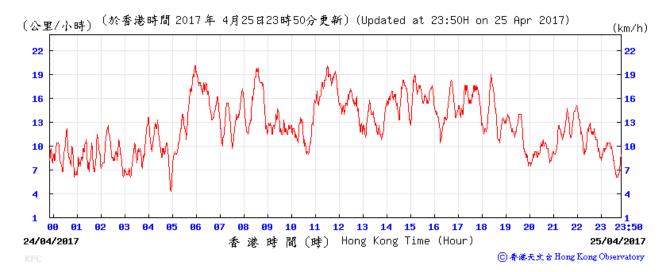
King's Park Weather Station – 25 April 2017



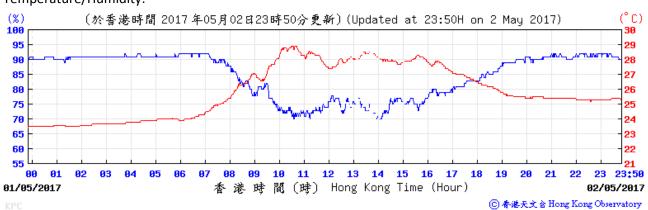
Temperature/Humidity:

Wind Direction:





King's Park Weather Station – 02 May 2017



Temperature/Humidity:

Wind Direction:

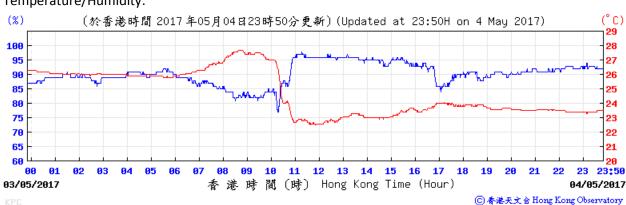






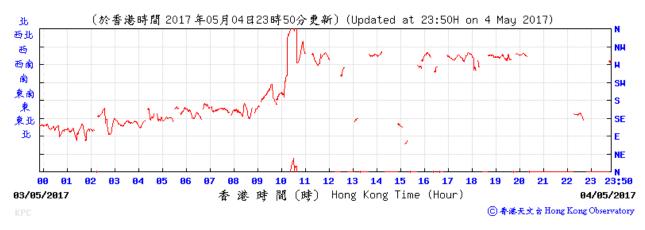
Day	Total Rainfall, mm	24-hr TSP	Noise	Remarks
1	0.0			
2	0.0		✓	It was sunny without rainfall on site during noise monitoring.
3	Trace			
4	42.5	1		
5	0.0			
6	Trace			
7	1.8			
8	9.2	✓		
9	10.8		✓	It was sunny without rainfall on site during noise monitoring.
10	0.0			
11	0.0			
12	Trace			
13	4.7			
14	Trace			
15	38.5	1		
16	3.0		✓	It was sunny without rainfall on site during noise monitoring
17	0.0			
18	0.1			
19	0.7			
20	0.3			
21	4.4			
22	5.6	~		
23	4.1		✓	It was Sunny without rainfall on site during noise monitoring
24	273.6			
25	0.0			
26	0.0			
27	Trace			
28	0.0			
29	0.0			
30	Trace			
31	0.0			
lean/Total	399.3			

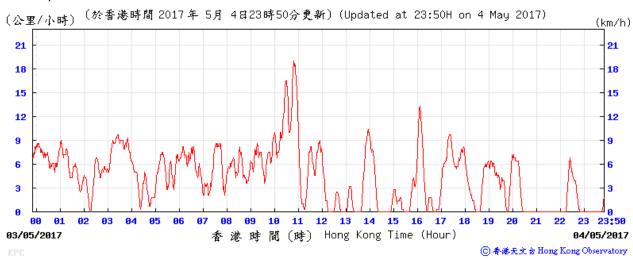
King's Park Weather Station – 04 May 2017



Temperature/Humidity:

Wind Direction:





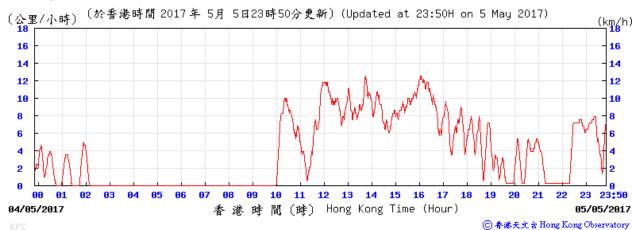
King's Park Weather Station – 05 May 2017



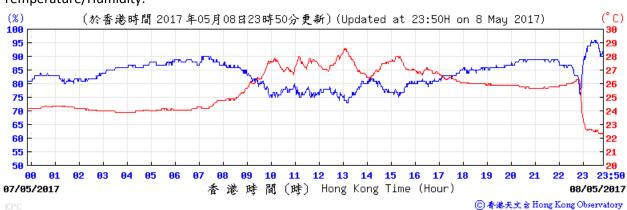
Temperature/Humidity:

Wind Direction:



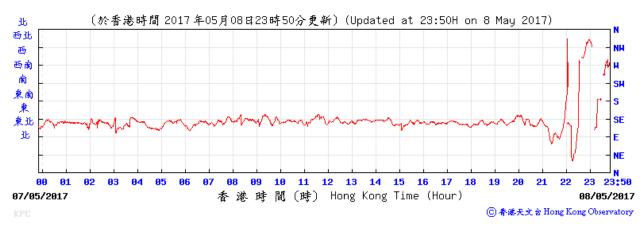


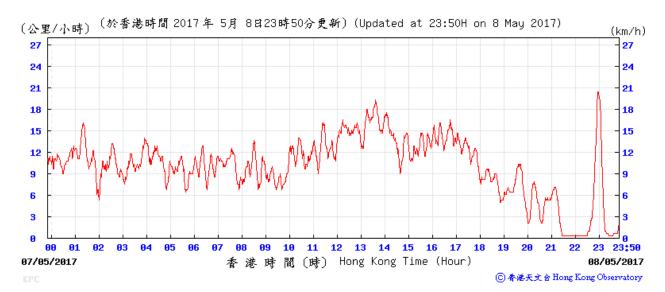
King's Park Weather Station – 08 May 2017



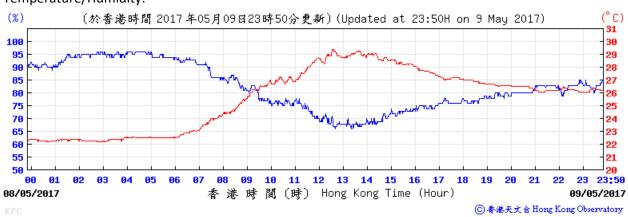
Temperature/Humidity:

Wind Direction:



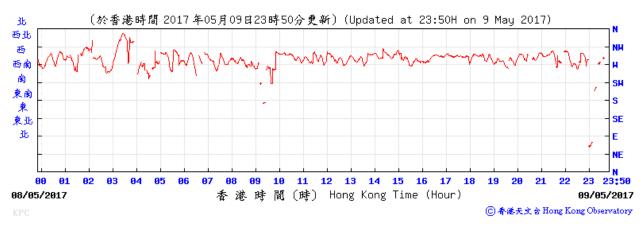


King's Park Weather Station – 09 May 2017



Temperature/Humidity:

Wind Direction:

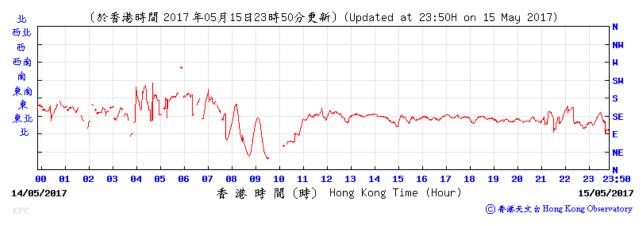


(公里/小時) 18 「 (於香港時間 2017 年 5月 9日23時50分更新) (Updated at 23:50H on 9 May 2017) <u>(k</u>m/h) Ø ø AA 14 15 16 23:50 08/05/2017 香港時間(時) Hong Kong Time (Hour) 09/05/2017 ⑦ 香港天文 含 Hong Kong Observatory

King's Park Weather Station – 15 May 2017







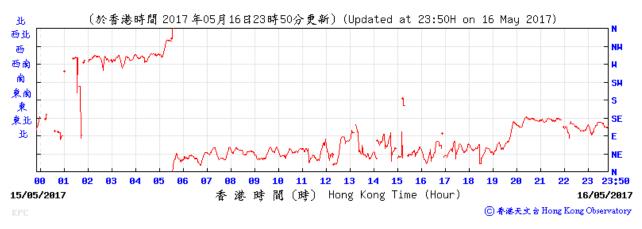


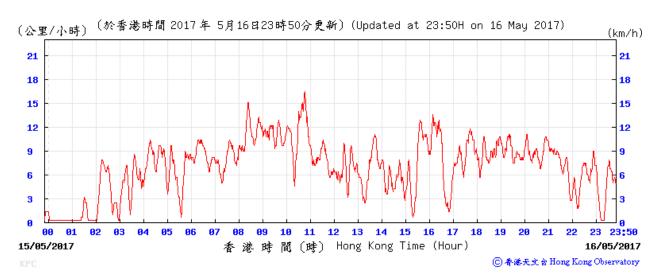
King's Park Weather Station – 16 May 2017



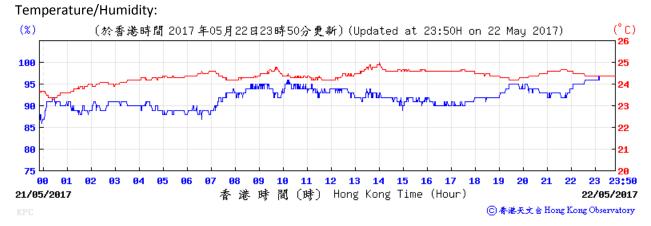
Temperature/Humidity:

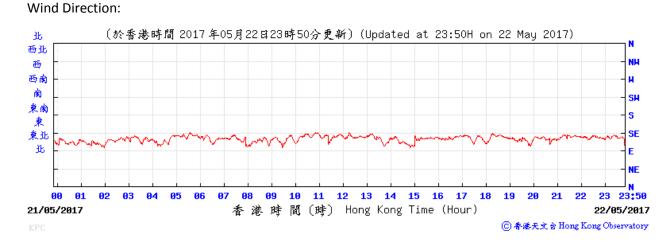
Wind Direction:

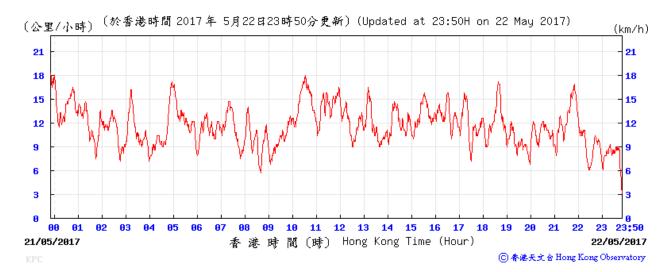




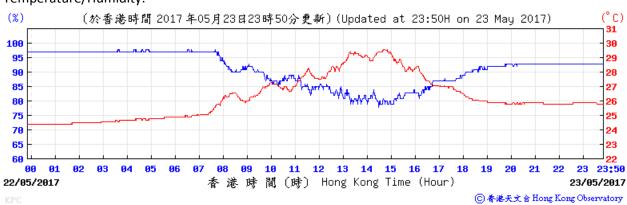
King's Park Weather Station – 22 May 2017





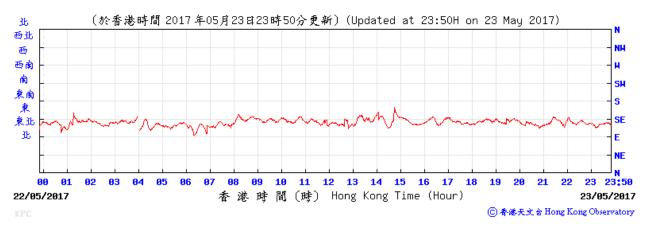


King's Park Weather Station – 23 May 2017



Temperature/Humidity:

Wind Direction:





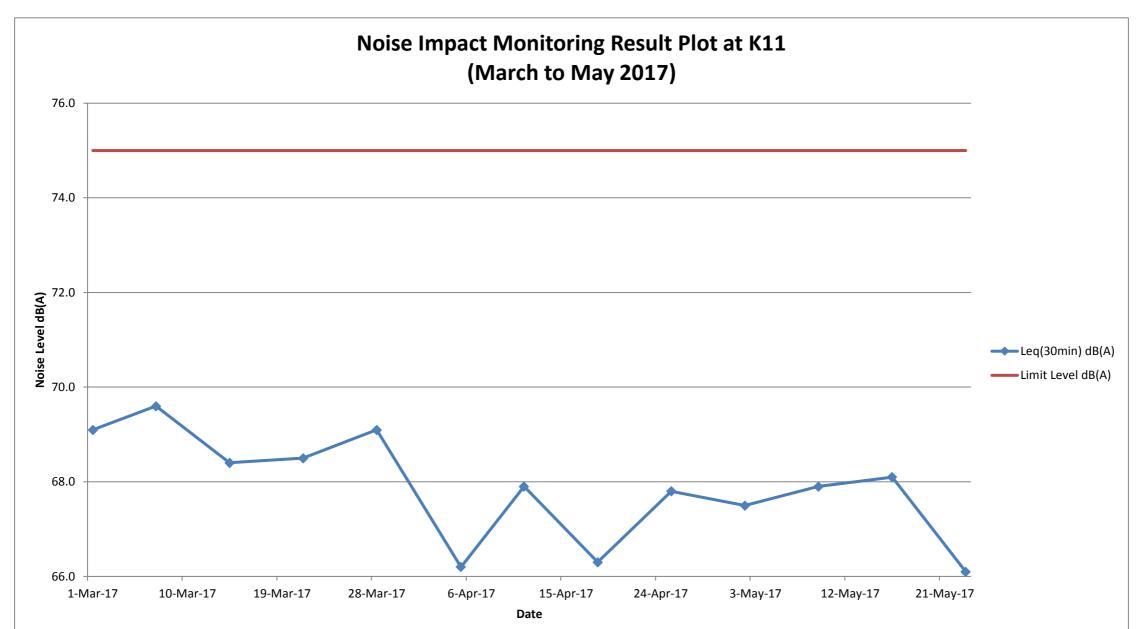
APPENDIX H

MONITORING RESULTS AND PLOTS

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-Mar-17	Cloudy	0.1	13:06	13:36	65.3	75	69.1	70.5	66.0
	7-Mar-17	Cloudy	4.1	10:17	10:47	65.3	75	69.6	71.0	67.5
	14-Mar-17	Drizzle	3.6	13:01	13:31	65.3	75	68.4	69.5	66.0
	21-Mar-17	Sunny	0.1	13:03	13:33	65.3	75	68.5	69.5	66.5
	28-Mar-17	Sunny	0.4	10:42	11:12	65.3	75	69.1	70.0	67.0
	5-Apr-17	Sunny	0.6	15:29	15:59	65.3	75	66.2	67.0	65.0
	11-Apr-17	Sunny	0.3	10:25	10:55	65.3	75	67.9	69.0	66.0
	18-Apr-17	Sunny	0.4	11:25	11:55	65.3	75	66.3	67.5	64.0
	25-Apr-17	Cloudy	0.7	10:04	10:34	65.3	75	67.8	69.0	66.0
	2-May-17	Sunny	0.3	10:40	11:10	65.3	75	67.5	68.5	66.0
	9-May-17	Sunny	0.1	13:02	13:32	65.3	75	67.9	68.5	66.5
	16-May-17	Sunny	0.8	10:14	10:44	65.3	75	68.1	69.0	66.5
	23-May-17	Sunny	0.0	11:26	11:56	65.3	75	66.1	67.0	64.0

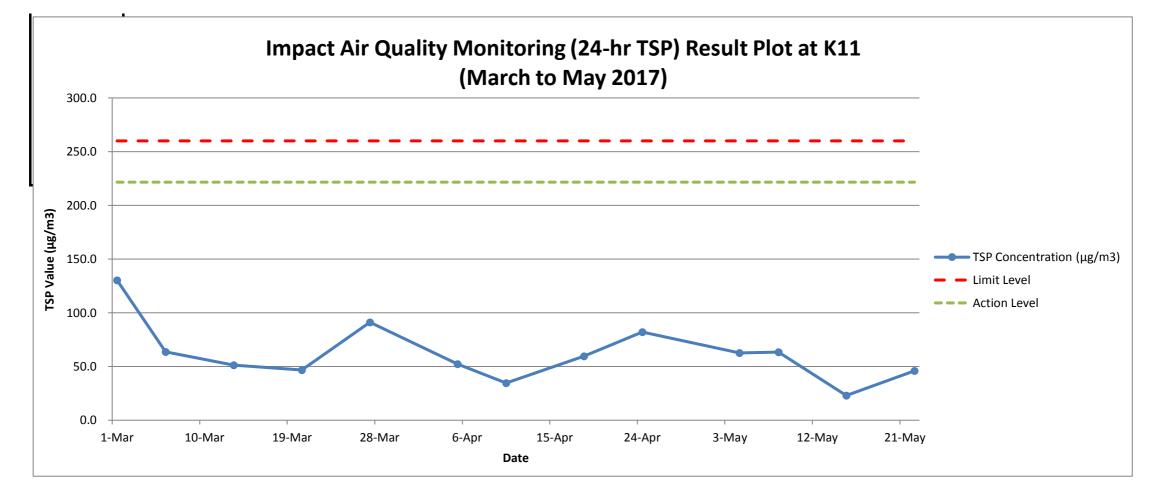
* Not collected

Red Bold indicates an exceedance of Limit Level



Location	Monitoring Date	Start Time	Weather Conditions	Temperature	Elapse Time			Flow Rate (CFM)			TSP	
					Initial	Final	Sampling Hours	Initial	Final	Average Flow Rate	Concentration (µg/m3)	Action/Limit Levels
	1-Mar-17	13:08	Cloudy	21.6	782149	784929	28	37	37	37	130.3	221.6/260
	6-Mar-17	10:11	Cloudy	23.0	784929	787347	24	34	34	34	63.6	221.6/260
	13-Mar-17	11:36	Overcast	23.0	787347	789730	24	31	32	32	51.3	221.6/260
K11	20-Mar-17	12:00	Sunny	25.3	789730	792240	25	30	31	31	46.7	221.6/260
	27-Mar-17	10:37	Sunny	21.0	792240	794658	24	33	37	35	91.1	221.6/260
	5-Apr-17	9:00	Sunny	23.2	794658	797029	24	25	26	26	52.4	221.6/260
	10-Apr-17	9:30	Overcast	27.4	797029	799357	23	33	35	34	34.7	221.6/260
	18-Apr-17	11:30	Fine	27.9	799357	802101	27	35	36	36	59.5	221.6/260
	24-Apr-17	10:00	Overcast	22.0	802101	804518	24	35	36	36	82.0	221.6/260
	4-May-17	10:20	Overcast	24.0	806959	809383	24	34	34	34	62.7	221.6/260
	8-May-17	8:30	Overcast	24.9	809383	811842	25	36	36	36	63.4	221.6/260
	15-May-17	10:35	Overcast	24.3	811842	814260	24	36	37	37	23.0	221.6/260
	22-May-17	10:20	Overcast	24.5	814260	816717	25	34	34	34	46.1	221.6/260

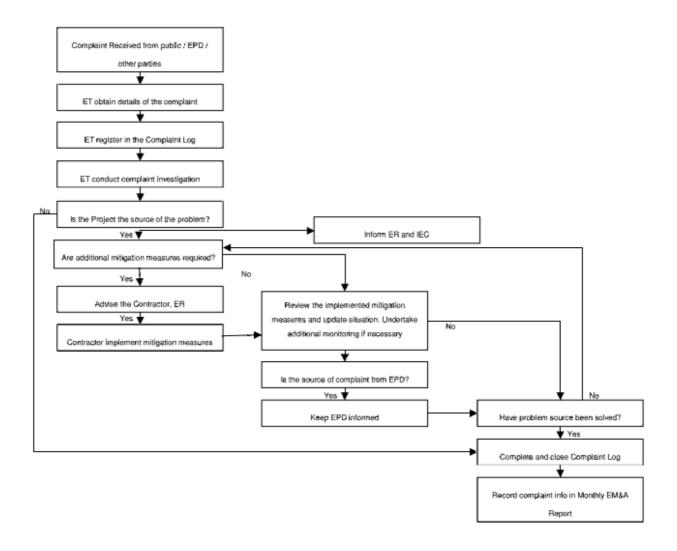
Impact Air Quality Monitoring (24-hr TSP) Results at K11 (March to May 2017)



APPENDIX I

FLOW CHAT 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 SubwayDate Reported:2-June-2017

	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of Non-inert C&D Wastes Generated Monthly					
Month	Total Quantity Generated	Hard Rocks and Large Broken Concrete (See Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse		
									(see Note 2)				
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg)	(in '000m³/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	-	-	-	-	-	-	-	-	-	-	-		
Sub-total	4.1061	-	-	-	4.1061	-	-	-	-	-	0.0165		
July	-	-	-	-	-	-	-	-	-	-	-		
Aug	-	-	-	-	-	-	-	-	-	-	-		
Sept	-	-	-	-	-	-	-	-	-	-	-		
Oct	-	-	-	-	-	-	-	-	-	-	-		
Nov	-	-	-	-	-	-	-	-	-	-	-		
Dec	-	-	-	-	-	-	-	-	-	-	-		
Total	4.1061	-	-	-	4.1061	-	-	-	-	-	0.0165		
Acc. Total	9.0534	(accumulated quar	ntity of the project =	= carried amount + t	0.0552								

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.