



Maeda Corporation

MTRCL Contract C3840-13C Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works

Quarterly EM&A Report (June to August 2016)



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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

7 December 2016

Dear Sirs

Consultancy Agreement A130-13 Independent Environmental Checker for CRS and LTS CRS - Verification for 10th Quarterly Environmental Monitoring and Audit (EM&A) Report (June 2016 to August 2016) (Report No.: EB001340R0421)

We refer to the 10th Quarterly EM&A Report (June to August 2016) received under cover of the email from the Environmental Team, Hyder Consulting Limited (HCL), dated on 5 December 2016.

We have no comment and have verified the captioned report (Report No.: EB001340R0421).

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

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MAEDA

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Quarterly EM&A Report (June to August 2016)

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Report No	EB001340R0421	
Date	22 November 2016	

This Quarterly EM&A Report is prepared for Maeda Corporation in accordance with the terms and conditions of appointment dated 30 October 2013. Hyder Consulting Limited (Company Number 126012) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

Quarterly EM&A Report (June to August 2016) Hyder Consulting Limited-Company Number 126012

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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 and Successful Prosecutions

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

Reporting Changes

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

Future Key Issues

General

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

Construction Noise

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

Water Quality

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

Air quality

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



1. INTRODUCTION

1.1 Project Background

- 1.1.1 In order to improve the appearance of Carnarvon Road Entrance D1 and D2 of Tsim Sha Tsui (hereafter referred as 'TST') Station and to provide a more comfortable walking environment nearby, MTR Corporation Limited (hereafter referred as 'MTRC' or 'the Corporation') has commissioned Maeda Corporation (hereinafter referred as 'MC') the contract *MTR Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works* (hereafter referred as 'the Project'). The Project is proposed to rebuild the existing Entrance D1 and D2 and construct a new Entrance D3 at the basement B2 level of the K11 Art Mall to connect to the TST station by a subway, which extends from the Entrance D1 and D2 and runs approximately 80m along Carnarvon Road and across the Bristol Avenue to the Entrance D3. The project was commenced in March 2014 and is anticipated to be completed in September 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 interrelationship with environmental protection / mitigation measures for the construction period.
- 1.1.6 This is the 10th quarterly EM&A report (hereinafter referred as 'This Report') covering construction period from 1st June 2016 to 31st August 2016 (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 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.*

ltem	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-RE0088-16 approved on 29 January 2016 for operation of 4 submersible water pumps (electric) or 1 Air Blower (TS) or 4 Hand-held Drill (TS) from 15 February to 14 August 2016.
		CNP No. GW-RE0804-16 approved on 4 August 2016 for operation of 4 submersible water pumps (electric) from 15 August 2016 to 14 February 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*:

Item	Description
1	Excavation and concrete breaking for UU identification and support tailoring at G1-6
2	Horizontal pipe piling and grouting of the mined tunnel
3	Erection of site hoarding of Entrance D2
4	Demolition of upper ground structure of Entrance D2, removal of existing escalator and demolition the top slab of existing subway
5	ABWF & BS works of the temporary staircase
6	Rock excavation at ELS
7	Re-alignment of the site hoarding for piling
8	Grouting and vertical pipe piling for cut and cover tunnel (Stage II)
9	Water inflow test at the mined tunnel and water pumping test for C&C tunnel



2. EM&A REQUIREMENTS

2.1 Air Quality

- 2.1.1 24-Hour Total Suspended Particulates (hereinafter referred as '24-Hr TSP') is required to be monitored once a week during construction period of the Project.
- 2.1.2 1-Hour Total Suspended Particulates (hereinafter referred as '1-Hr TSP') is required to be monitored 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:

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

Parameter	Action Level	Limit Level
24-Hr TSP	For baseline level ≤200 µg/m³, Action level = (130% of baseline level + Limit level)/2 For baseline level >200 µg/m³, Action level = Limit level	260
1-Hr TSP	For baseline level ≤384 µg/m³, Action level = (130% of baseline level + Limit level)/2 For baseline level >384 µg/m³, Action level = Limit level	500

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	222	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
- f) Provision of tarpaulin covering for any dusty materials on a vehicle leaving the site.
- 2.1.7 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
<i>Leq</i> in 30 minutes	Once a week

2.2.2 Monitoring schedules for 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.

Action and Limit Levels

2.2.3 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

2.2.4 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

- 2.2.5 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;
 - i) Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable; and
 - j) Enclosure of Entrance D1 with acoustic mat during demolition.
- 2.2.6 Details of the implementation schedule for the mitigation measures are presented in *Appendix D*.



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**.

Mean (Min – Max)	56.1 (30.4 - 139.1)		
29 August 2016	139.1		
22 August 2016	70.4	-	
18 August 2016	82.1		
08 August 2016	_*		
01 August 2016	83.3		
25 July 2016	38.0		
18 July 2016	37.7	Action Level:	Limit Level: 260
11 July 2016	46.9		
04 July 2016	30.4		
27 June 2016	38.1		
20 June 2016	40.8		
13 June 2016	35.9		
06 June 2016	31.0	_	
Monitoring Date	24-Hr TSP	A/L Le	vels

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

- The HVS was found damaged and inoperable during check up after the typhoon.

- Subsequent monitoring is temporarily suspended until the damaged HVS is repaired.

- Repair service was immediately contacted and repair/inspection was scheduled on the earliest

available date on 18 August 2016 when the HVS was successfully repaired to fully operational state. - Monitoring was resumed on 18 August 2016.

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*.

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

Monitoring Date	<i>Leq</i> (30 min)	A/L Levels
07 June 2016	70.0	Limit Level: 75
14 June 2016	66.3	Action Level:
23 June 2016	69.7	-
28 June 2016	70.1	 Any documented complaint against construction noise.
5 July 2016	69.9	
12 July 2016	66.7	-
19 July 2016	71.9	-
26 July 2016	72.8	-
04 August 2016	71.6	-
09 August 2016	74.2	-
18 August 2016	70.4	
23 August 2016	69.0	_
30 August 2016	66.9	_
Mean (Min – Max)	70.5 (66.3 – 74.2)	

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				
07 June 2016	No follow-up item.	Not required.				
07 June 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
14 June 2016	No deficiency was observed on site.	Not required.				
21 June 2016	No follow-up item.	Not required.				
21 June 2016	No deficiency was observed on site.	Not required.				
28 June 2016	No follow-up item.	Not required.				
	No deficiency was observed on site.	Not required.				
of LL 0040	No follow-up item.	Not required.				
05 July 2016	No deficiency was observed on site.	Not required.				
40.1.1.0040.	No follow-up item.	Not required.				
12 July 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
19 July 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
26 July 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
04 August 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
09 August 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
16 August 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
23 August 2016	No deficiency was observed on site.	Not required.				
	No follow-up item.	Not required.				
30 August 2016	No deficiency was observed on site.	Not required.				

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

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4.2 Compliance with Legal/ Contractual Requirements

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

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

Month	No. of Breaches	Cumulative no. of Breaches
June 2016	0	0
July 2016	0	0
August 2016	0	0

4.3 Environmental Complaints

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

Table 4-3-1 Summary of Complaint

Month	No. of Complaint	Cumulative no. from March 2014 to the Reporting Period
June 2016	0	5
July 2016	0	5
August 2016	0	5

4.4 Notification of Summons/Successful Prosecutions

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

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

Month	Number of Issue	Cumulative no. from March 2014 to the Reporting Period
June 2016	0	0
July 2016	0	0
August 2016	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

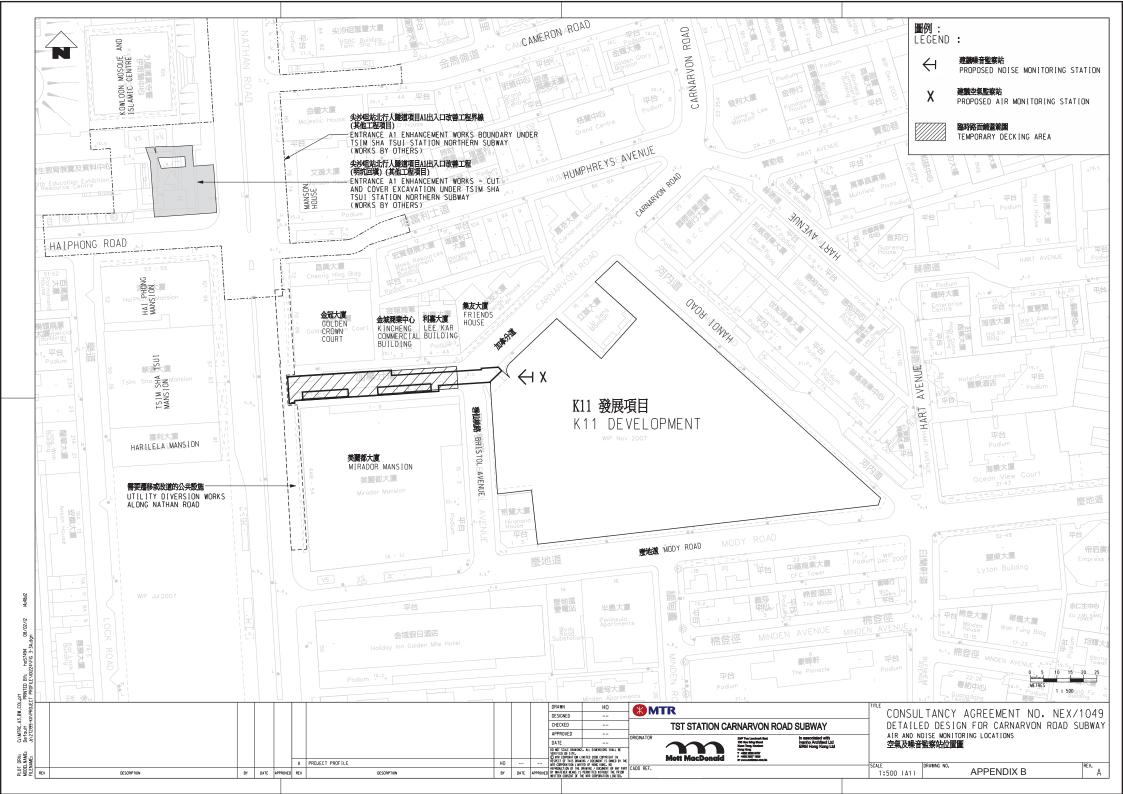
- 7.1.1 Neither NOE & the associated NOE investigation nor follow-up actions were required as the environmental monitoring results registered no exceedances of A/L Levels of air quality and construction noise during the Reporting Period.
- 7.1.2 In addition, no remedial actions were required as no notification 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 under the upcoming dry season.
- 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

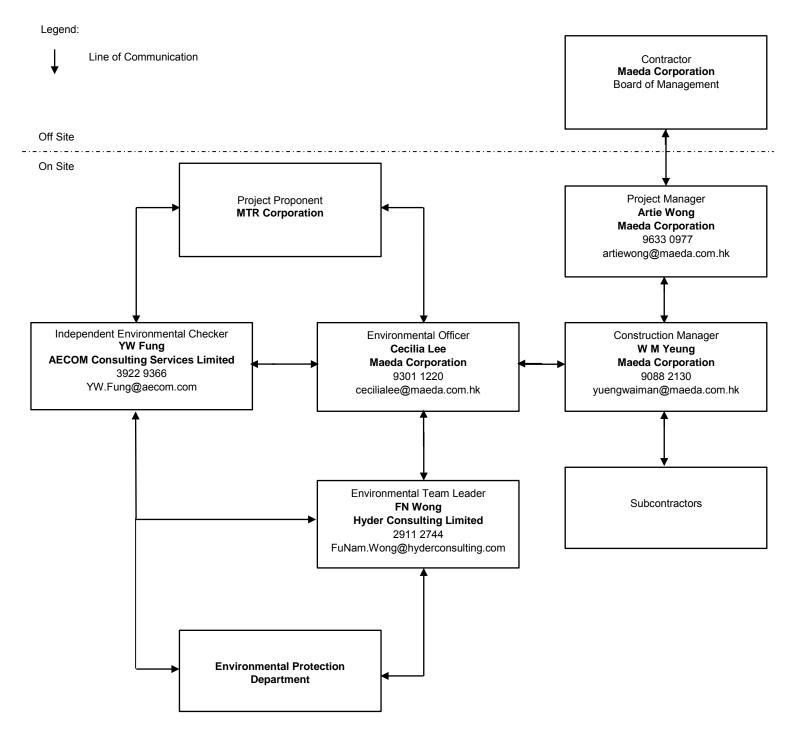
Site Location Plan



Appendix B

Management Structure

Project Organization Chart in Environmental Management (Rev.03)



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					CONTRACT C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway	
١D	Activity Name	Orig Dur	Planned Start	Planned Finish	Total Flo	2014 2015 2016 2017 Oct N D Jan F 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 M J Jul A S Oct N D Jan F M Apr M J Jul A S Oct N D Jan F M Apr M J Jul A S 2016 2017	S Oct N D
Preliminary Master Pro	ogramme Revision 2	827d	14-Oct-13	31-Jul-16			5 000 11 0
Preliminaries		827d	14-Oct-13	31-Jul-16			
Contract Key Dates		Od	14-Oct-13	14-Oct-13	; ;		
C3840-CD-20	Date of Commencement	Od	14-Oct-13			▶ Datejof Commiencement	
Specified Degrees of Co	mpletion	Od	31-Jul-16	31-Jul-16			
C3840-CD-2A	Complete to Deg. 1 status for all civil engineering works and ABWF in Subway outside	Od		31-Jul-16		r⊷♦ Complete to Deg. 1 status for all civil engineering warks an	Id ABWF in Sub
Possession of Works Are	K11 Lot Boundary (31 Jul 16) ea As PS Clause P8 & PS Appendix G	Od	31-Oct-13	31-Oct-13			
C3840-AD-20	Access Date for Works Area 3840.W1 (subject to SLG/TMLG Approval)		31-Oct-13			Access Date for Works Area 3840.W1 (subject to SLG/TMLG Approval)	
	Access Date for Works Area 3040.00 ((Subject to SLS) Third Approval)						
Initial Site Survey				10-Dec-13			
C3840-SS-20	Validate the survey record and carry out any necessary additional survey at Works Areas 3840.W1 & W2	35d	31-Oct-13	10-Dec-13	3	Validate the survey record and carry out any necessary additional survey at Works Areas 3840.W1 & W2	
Temporary Works Desig	n & Approval Process (Incl. Demolition)	12d	16-Oct-13	30-Oct-13			
Temporary Traffic Mang	jement Scheme (TTM)	12d	16-Oct-13	30-Oct-13			
C3840-TTM-100	Appoint Traffic Consultant	0d		16-Oct-13		Appoint Traffic Consultant	
C3840-TTM-110	Pepare & submit review by Eng Outline TTM Schemes as per PS P20.4	6d	17-Oct-13	23-Oct-13	i	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	i	Eng review Outline TTM Schemes	
C3840-TTM-130	Prepare Detailed TTMS	5d	24-Oct-13	29-Oct-13		Prepare Detailed TTMS	
C3840-TTM-140	Discussion and agree in priniciple at TMLG Meeting	1d	30-Oct-13	30-Oct-13		Discussion and agree in priniciple at TMLG Meeting	
Carnarvon Road Subv				22-Jun-16			
				02-May-14			
	dvance Ground Works & Piling Works)						
Advance Ground Works				08-Feb-14			
C3840-AGW-020	Trial Pit/trench excavation	69d	14-Nov-13	08-Feb-14		Trial Pit/trench excavation	
C3840-AGW-040	Pre-drilling works	24d	27-Dec-13	3 24-Jan-14		Pre-drilling works	
Piles & Grouting for Ver	rtical Shaft	51d	27-Feb-14	02-May-14	1		
C3840-EVS-010	Mobilization for Piling Rig and Setup	4d	27-Feb-14	03-Mar-14	+	Mobilization 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		52 nos. pipe piles with 1m. to 2.2m. minimum rock socket	
C3840-EVS-030	Grouting for Vertical Shaft Bulk Head	18d	17-Mar-14	07-Apr-14		Gro <mark>uting for Vertical Shaft Bulk Head</mark>	
C3840-EVS-040	Curtain Grouting vertical shaft	18d	08-Apr-14	02-May-14	1	urtain Grouting ventical shaft	
Tunnel (Vertical Shaft Ex	cavation)	226d	03-May-14	31-Jan-15			
C3840-SH-100	Pump Test			4 31-May-14		Pump Test	
C3840-SH-110	Excavation for 1st layer 140m3 50m3/day			05-Jun-14			
C3840-SH-120	Install 1st waling, strut & legging wall			10-Jun-14			
C3840-SH-130	Shotcrete 1st layer	2d	11-Jun-14	12-Jun-14		Shotcrete 1st layer	
				~	ata D-1		
Actual Work	♦ Milestone			D	ata Date	1-Oct-13 Maeda/P/PMP/2 Preliminary Master Programme Date Revision Checked	Approve
Remaining Work Critical Remaining					Page	of 3 of 3 Premining Waster Flogramme Date Nevision Checked	W

	MTR				0011	TRACT C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway
	Activity Name	Orig Dur	Planned Start	Planned T Finish	otal Float	2014 2015 2016 D Jan F 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 M J J
C3840-SH-140	Excavation for 2nd layer 190m3 50m3/d	4d	13-Jun-14	17-Jun-14	8d	D Jan F 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 M J Jul A S Oct N D Jan F M Apr M J J
3840-SH-150	Install 2nd waling, strut & lagging wall	4d	18-Jun-14	4 21-Jun-14	8d	🚽 Install 2nd waling, strut & lagging wall
40-SH-160	Shotcrete 2nd layer	2d	23-Jun-14	4 24-Jun-14	8d	Shotcrete 2nd laver
3840-SH-170	Install Decking with Subframe to cover all area	4d	25-Jun-14	4 28-Jun-14	8d	Install Decking with Subframe to cover all area
3840-SH-180	Excavation for 3rd layer 360m3 50m3/d	7d	30-Jun-14	4 08-Jul-14	8d	Excavation for 3rd layer 360m3 50m3/d
840-SH-190	Install 3rd waling, strut & lagging wall	5d	09-Jul-14	14-Jul-14	8d	install 3rd waling, strut β lagging wall
840-SH-200	Shotcrete 3rd layer	2d	15-Jul-14	16-Jul-14	8d	Shottcrete 3rd layer
840-SH-210	Excavation for 4th layer117m3 (soil) @ 50m3/d, 205m3 (rock) 3m3/d	71d	17-Jul-14	10-Oct-14	8d	Excavation for 4th layer117m3 (soil) @ 50m3/d, 205m3 (rock) 3m3/d
40-SH-230	Shotcrete 4th layer	2d	11-Oct-14	13-Oct-14	8d	Shotcrete 4th layer
840-SH-240	Make formation and Blinding	2d	14-Oct-14	4 15-Oct-14	8d	Make formation and Blinding
840-SH-250	Modify waling and strut	3d	16-Oct-14	4 18-Oct-14	8d	Modify waling and strut
3840-SH-260	Adjustable Steel Platform Setup for Grouting & Piling Works)	12d	20-Oct-14	4 01-Nov-14	8d	Adjustable Steel Platform Setup for Grouting & Piling Works)
8840-SH-270	Horizontal Grouting (48 Nos. Grout Holes)	27d	03-Nov-14	4 03-Dec-14	8d	Horizontal Grouting (48 Nos. Grout Holes)
3840-SH-280	Horizontal Pipe Roofing (59 Nos. Pipe Pile)	27d	04-Dec-14	4 07-Jan-15	8d	Horizontal Pipe Roofing (59 Nos. Pipe Pile)
3840-SH-290	Horizontal Re-grouting	14d	08-Jan-15	5 23-Jan-15	8d	Horizontal Re-grouting
840-SH-300	Install Portal Frame	3d	24-Jan-15	5 27-Jan-15	8d	
840-SH-310	Cut Pipe Pile	4d	28-Jan-15	5 31-Jan-15	8d	Cùt Pipe Pile
nel (ELS, Excavati	on & 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	Excavation, shotcrete & install steel framework support for 1st
340-TU-110	Excavation, shotcrete & install steel framework support for next 7m	75d	04-May-18	5 01-Aug-15	8d	Excavation, shotcrete & install steel framework su
840-TU-120	Excavation, shotcrete & install steel framework support for last 7m	75d	03-Aug-15	5 31-Oct-15	8d	Excavation, shotcrete & install steel
3840-TU-130	Install intermediate portal frame	3d	02-Nov-15	5 04-Nov-15	8d	Iristall'intermediate portal frame
3840-TU-140	Install intermediate horizontal pipe roofing incl. mobilization & demobilization	19d	05-Nov-15	5 26-Nov-15	8d	Install intermediate horizontal pi
3840-TU-150	Horizontal re-grouting for intermediate section	6d	27-Nov-15	5 03-Dec-15	8d	Horizontal re-grouting for interr
C3840-TU-160	Install Support, excavation & shotcret for intermediate section	33d	04-Dec-18	5 14-Jan-16	8d	install Support, excavatio
3840-TU-180	Install dowel bars & concrete collar beams	10d	15-Jan-16	6 26-Jan-16	8d	Install dowel bars & co
3840-TU-210	Breakthrough (core & saw cut) into K11 Lot & associated works	18d	27-Jan-16	5 19-Feb-16	8d	Breakthrough (cdre
3840-TU-220	Construct Slab 2 Bays (2 pours)	12d	20-Feb-16	6 04-Mar-16	8d	Constfuct Slab 2
3840-TU-230	Construct Wall & Roof (incl. removal of struts) 2 Bays (8 pours)	64d	05-Mar-16	6 25-May-16	8d	Cons
3840-TU-240	Curing	10d	26-May-16	6 06-Jun-16	8d	
3840-TU-250	Dismantle falsework	10d	31-May-16	6 11-Jun-16	8d	
3840-TU-260	Grouting into void above	6d	13-Jun-16	6 18-Jun-16	8d	
Actual Work	Milestone			Data	Date: 11-Oct-13	³ Preliminary Master Programme D
Remaining Wor	rk				Page 2 of 3	

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	MTR			CONTRACT C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway																						
Activity ID	Activity Name	Orig	Planned	Planned	Total Float				20	014				2015					2016		i			2017		01
		Dur	Start	Finish		Oct N	D Jan	F M Apr	M J	Jul A	S Oct N	D Jar	n F M Apr	M J Jul	AS	Oct N	D Jan	F M Apr M	1 J Jul	A S	Oct N D J	lan F M	/ Apr M	J Jul	A S Oct N	I D Ja
	C3840-TU-270 Cut Pipe pile at interface	3d	20-Jun-16	22-Jun-16	8d														- Cut	Pipe pile	le at interface					
Βι	uilding Services & ABWF Works	70d	27-Apr-16	21-Jul-16	8d																					
	BS & 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	I Complet	on			

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

	Maeda/P/PMP/2										
e	Revision	Checked	Approved								
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MTR	CONTRACT	C3840-13C Tsim Sha Tsui Station, Carnarvon Road Subway	
Activity ID Activity Name	Orig Planned Planned Total Float Dur Start Finish Oct N D Jan F	2014 2015 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 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 Od		
Contract Key Dates	3d 11-Oct-13 14-Oct-13 Od		
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 Commenc	ament	
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	e 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 - Temporary Traffic	Diversion (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		
C3840-TTM-110 Pepare & submit review by Eng Outline TTM Schemes as per PS P20.4		review bý 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	ne TTM Schemes	
C3840-TTM-130 Prepare Detailed TTMS	5d 24-Oct-13 29-Oct-13 0d - Préparé Detailed		
C3840-TTM-140 Discussion and agree in priniciple at TMLG Meeting	1d 30-Oct-13 30-Oct-13 0d T Discussion and	agree in priniciple at TMLG Meeting	
Carnarvon Road Subway and Entrances	774d 14-Nov-13 28-Jun-16 0d		
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 Od	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 Pit/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	Mobilization 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 1m. 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 Od	-10 nos. pipe piles along Grid Line A with 1m. to 3.1m minimum rock socket	
	Data Date: 11-Oct-13		Maeda/P/PMP/2
Actual Work Milestone Remaining Work		Preliminary Master Programme	Date Revision Checked Approved
Critical Remaining Work	Page 1 of 5	Extract Critical Path 2	27-Feb-14 REV 2 BG AW

	MTR				
vity ID	Activity Name		Planned Total Flo Finish	at 2014 2015	2016 2017
C3840-ETS-030	Curtain Grouting along Grid Line A	24d 29-May-14	26-Jun-14		
C3840-ETS-070	Type III Sheet Plle, 355m along between Grids A & B	6d 22-Apr-14	28-Apr-14	Dd Type III Sheet Plle, 355m along between Grids A & B	
C3840-ETS-080	Toe Grouting	8d 29-Apr-14	09-May-14	Dd Grouting	
C3840-ETS-090	Mobilization for Piling Rig and Setup	4d 10-May-14	14-May-14)d Mpbilization 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	d 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	Dd Curtain Grouting along Grid Line B	
Piles & Grouting for Re	emaining Section of Cofferdam at D2	20d 24-Apr-15	18-May-15		
C3840-ECD-010	Mobilization for Piling Rig and Setup	4d 24-Apr-15	28-Apr-15	d Mobilization for Piling Rig and Setup	
C3840-ECD-020	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	Dd 23 rios. pipe piles along Grid Line B at D2 with 1	1m. to 3.2m minimum rock socket
Open Cut Sequence 2 (E	Excavation for Temporary Staricase)	209d 30-Jun-14	11-Mar-15		
Excavation		93d 30-Jun-14	20-Oct-14		
C3840-EXC-100	Pump test prior to excavate for temporary staricase	24d 30-Jun-14	28-Jul-14	d	
C3840-EXC-120	Excavation for 1st layer at D1 208m3	4d 29-Jul-14		Excavation for 1st layer at D1 208h3	
C3840-EXC-130	Install 1st waling & strut 21ton & temporary support to underground UUs	7d 02-Aug-14	09-Aug-14)d Install 1st waling & strut 21ton & temporary support to underground UUs	
C3840-EXC-140	Install Truss for Suport Temp D1	6d 11-Aug-14	16-Aug-14	d Install Truss for Suport Temp D?	
C3840-EXC-150	Shotcrete 1st layer	2d 18-Aug-14	19-Aug-14	d Shotcrete 1st layer	
C3840-EXC-160	Demolish D1 4m below GL	6d 20-Aug-14	26-Aug-14	d Demolish D1 4m below GL	
C3840-EXC-170	Excavation for 2nd layer at D1 230m3	5d 27-Aug-14	01-Sep-14	Dd Excavation/for 2nd layer at D1 230m3	
C3840-EXC-180	Install 2nd waling & strut 17ton	7d 02-Sep-14	10-Sep-14	Instal 2nd waling & strut 17ton	
C3840-EXC-190	Shotcrete 2nd layer	2d 11-Sep-14	12-Sep-14	Dd Shot¢rete 2nd layer	
C3840-EXC-200	Excavation for 3rd layer at D1 216m3	5d 13-Sep-14	18-Sep-14	Dd Excavation for 3rd layer at 101 216m3	
C3840-EXC-210	Install 3rd waling & strut 15ton	6d 19-Sep-14	25-Sep-14	d Install 3rd waling & strut 1ston	
C3840-EXC-220	Shotcrete 3rd layer	4d 26-Sep-14	30-Sep-14	Dd Shotcrete 3rd layer	
C3840-EXC-230	Excavation for 4th layer at D1 166m3	4d 03-Oct-14	07-Oct-14	Jd Excavation for 4th layer et D1 166 n3	
C3840-EXC-240	Install channel on opening	3d 08-Oct-14	10-Oct-14	d Install channel on opening	
C3840-EXC-250	Shotcrete 4th layer	4d 11-Oct-14	15-Oct-14	Dd Shotcrete 4th jayer	
C3840-EXC-260	Make formation and Blinding	4d 16-Oct-14	20-Oct-14	Dd Make formation and Binding	
RC Structure (Tempora	ary Staricase)	116d 21-Oct-14	11-Mar-15		
C3840-TSC-100	Install Dowel bars (130#)	6d 21-Oct-14	27-Oct-14	d Install Dowel bars (130#)	
C3840-TSC-110	Const. Bay1 : 18m3	6d 28-Oct-14	03-Nov-14	d Cpnst; Bay1 : 1βm3	
C3840-TSC-120	Const. Bay2 : 16m3	9d 04-Nov-14	13-Nov-14	Dd Const. Bay2 : 16m3	
C3840-TSC-130	Const. Bay3 : 6m3	6d 14-Nov-14	20-Nov-14	d Const. Bay3 : 6m3	
		, I			
Actual Work	♦ Milestone		Data Date	11-Oct-13 Preliminary Master Programme	Maeda/P/PMP/2 Date Revision Checked Approved
Remaining Work			Page	2 of 5	27-Feb-14 REV 2 BG AW
				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 Ict N D Jan F 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 M J Jul A S Oct N D Jan F 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 M J Jul A S Oct N D Jan F M Apr M J Jul A S Oct N D Jan A S Oct N D Jan A S Oct N D	2017	018 t N D Jar
C384	40-TSC-150	Const. Bay5 : 35m3	13d	21-Nov-14	05-Dec-14				
C384	40-TSC-160	Const. Bay6 : 39m3	15d	06-Dec-14	23-Dec-14	0d	Const. Bay6 39m3		
C384	40-TSC-170	Const. Bay7 : 34m3	14d	16-Dec-14	03-Jan-15	Od	Const. Bay. : 34m3		
C384	40-TSC-180	Const. Bay8 : 4m3	6d	31-Dec-14	07-Jan-15	0d	∎ ≪Const. Baγ8 : 4m3		
C384	40-TSC-190	Const. Bay9 : 44m3	14d	08-Jan-15	23-Jan-15	0d	Const. Eay9 : 44m3		
C384	40-TSC-240	Temporary Staircase Commissioning & open for use	Od		11-Mar-15	0d	Temporary Staircase Commissioning & open for use		
Open Cut	t Sequence 3 (Ad	dvance Ground Works & Piling Works at D2 & in front of D1)	33d	12-Mar-15	23-Apr-15	Od			
C3840-E	ELS-510	Joint Survey & Remove existing BS & ABWF Services at D2	6d	12-Mar-15	18-Mar-15	0d	oint Survey & Remové existing BS & ABWF Services at D2		
C3840-E	ELS-520	Const Flood Barrier at Concourse and D2	9d	19-Mar-15	28-Mar-15	0d	Const Flood Barrier at Concourse and D2		
C3840-E	ELS-530	Demolish D2 above GL	12d	30-Mar-15	16-Apr-15	0d	Demclish D2 above GL		
C3840-6	ELS-540	Set Conc block in D2 opening	6d	17-Apr-15	23-Apr-15	0d	Set:Corc block in D2;opening		
Open Cut	t Sequence 4 (E)	cavation for Subway in front of D1)	182d	27-Jun-15	02-Feb-16	Od			
C3840-E	ELSD1-100	Excavation for 1st layer 378m3, 25m3/day	15d	27-Jun-15	15-Jul-15	0d	Excavation for 1st layer 378m3, 25m3/day		
C3840-E	ELSD1-110	Install 1st waling & strut & Utility Support	24d	03-Jul-15	30-Jul-15	0d	Install 1st waling & strut & Utility Support		
C3840-E	ELSD1-130	Install Decking with Subframe to cover all area	12d	31-Jul-15	13-Aug-15	0d	Install Decking with Subframe to cover all area		
C3840-E	ELSD1-140	Shotcrete 1st layer	2d	14-Aug-15	15-Aug-15	0d	Shotcrete 1st:layer		
C3840-E	ELSD1-150	Excavation for 2nd layer 421m3 50m3/day	9d	17-Aug-15	26-Aug-15	0d	Excavation for 2nd layer 421m3 50m3/day		
C3840-E	ELSD1-160	Install 2nd waling & strut	8d	21-Aug-15	29-Aug-15	0d	Install 2nd waling & strut		
C3840-E	ELSD1-170	Shotcrete 2nd layer	2d	31-Aug-15	01-Sep-15	Od	Shotcrete 2nd layer		
C3840-E	ELSD1-180	Demolish existing subway 7.5m below GL	6d	02-Sep-15	08-Sep-15	Od	Demolish existing subway 7.5m below GL		
C3840-E	ELSD1-190	Excavation for 3rd layer 421m3, 50m3/d	9d	09-Sep-15	18-Sep-15	Od	Excavation for 3rd layer 42/1m3; 50m3/d		
C3840-E	ELSD1-200	Install 3rd waling & strut	8d	14-Sep-15	22-Sep-15	0d	Install 3td wáling & strut		
C3840-E	ELSD1-210	Shotcrete 3rd layer	2d	23-Sep-15	24-Sep-15	0d	Shotcrete 3/d layer		
C3840-E	ELSD1-220	Demolish existing subway 10.6m below GL	6d	25-Sep-15	03-Oct-15	0d	┝╾┨ Demolish existing subway 10,6m below GL		
C3840-E	ELSD1-230	Excavation for 4th layer 443m3, 50m3/d	9d	05-Oct-15	14-Oct-15	0d	Excavation for 4th layer 443m3, 50m3/d		
C3840-E	ELSD1-240	Install 4th waling & strut	8d	09-Oct-15	17-Oct-15	0d	🧤 🧃 İnstall 4th waling & strut		
C3840-E	ELSD1-250	Shotcrete 4th layer	2d	19-Oct-15	20-Oct-15	0d	Shotcrete 4th layer		
C3840-E	ELSD1-260	Excavation for 5th layer 443m3, 50m3/d	9d	22-Oct-15	31-Oct-15	0d	Excavation for 5th layer 443m3, 50m3/d		
C3840-6	ELSD1-270	Install 5th waling & strut	8d	27-Oct-15	04-Nov-15	0d	Install-5th waling & strut		
C3840-6	ELSD1-280	Shotcrete 5th layer	2d	05-Nov-15	06-Nov-15	0d	Shotcrete 5th layer		
C3840-E	ELSD1-290	Excavation Soil for 6th layer 392m3, 50m3/d	8d	07-Nov-15	16-Nov-15	0d	Excavation Soil for 6th Jayer 392m3, 50m3/d		
C3840-E	ELSD1-300	Excavation Rock (Grade 2) 402m3, 8m3/d	50d	17-Nov-15	16-Jan-16	0d	Excavation Rock (Grade 2) 402m3, 8m3/d		
						ata Data: 11			
	al Work	♦ Milestone			Da	ata Date: 11	Preliminary Master Programme Date Revisio	eda/P/PMP/2 n Checked App	proved
	naining Work cal Remaining	Work				Page 3 c	f 5 27-Feb-14 REV 2	BG AW	
							Extract Critical Path 2		

MTR			CONTRACT	C3840-13C Tsim Sha Tsu	i Station, Carnarvon Road Subw	ay			
Activity ID Activity Name O D	Drig Planned Dur Start	Planned Finish	Total Float	2014 M Apr M J Jul A S Oct N D	2015 Jan F M Apr M J Jul A S Oct N D		2016	2017	018
C3840-ELSD1-310 Install 6th waling & strut 8	3d 18-Jan-16	26-Jan-16	Od Od			Install 6th			
C3840-ELSD1-320 Shotcrete 6th layer 2	2d 27-Jan-16	28-Jan-16	Od			Shotcrete	6th layer		
C3840-ELSD1-330 Make formation and Blinding 4	4d 29-Jan-16	02-Feb-16	Od			Make for	mation and Blinding		
Open Cut Sequence 5 (Construction of Subway & D2)	16d 03-Feb-16	28-Jun-16	Od						
C3840-STR-110 Const. Bay1 : 4m3 6	6d 03-Feb-16	12-Feb-16	Od			Const. I	Bay1 : 4m3		
C3840-STR-120 Const. Bay2 : 123m3 10	0d 13-Feb-16	24-Feb-16	Od			Const	. Bay2:: 123m3		
C3840-STR-130 Const. Bay3.1 : 125m3 10	0d 25-Feb-16	07-Mar-16	Od			Con	st. Bay3.1 : 125m3		
C3840-STR-140 Const. Bay3.2 : 120m3 15	5d 08-Mar-16	24-Mar-16	Od			L <mark>+</mark> ∎ c	on/st. Bay3 2 : 1/20m3		
C3840-STR-150 Const. Bay4 : 29m3 6	6d 18-Mar-16	24-Mar-16	Od			-] c	onst. Bay4:: 29m3		
C3840-STR-160 Const. Bay4.5 : 13m3 6	6d 23-Mar-16	01-Apr-16	Od		-		Const. Bay4.5 : 13m3		
C3840-STR-170 Const. Bay5 : 141m3 10	0d 31-Mar-16	12-Apr-16	Od				Const. Bay5 : 141m3		
C3840-STR-180 Const. Bay6.1 : 130m3 12	2d 13-Apr-16	26-Apr-16	Od			Ļ	Const. Bay6.1 : 130	m <mark>3</mark>	
C3840-STR-190 Const. Bay6.2 : 130m3 12	2d 18-Apr-16	30-Apr-16	Od				Const. Bay6.2 : 130	n r 3	
C3840-STR-200 Const. Bay6.3 : 130m3 12	2d 22-Apr-16	06-May-16	Od			Ļ	📕 Const. Bay6.3 : 13	0 <mark>in</mark> 3	
C3840-STR-210 Const. Bay6.4 : 130m3 12	2d 27-Apr-16	11-May-16	Od				Const. Bay6.4 : 1	30m3	
C3840-STR-220 Const. Bay6.5 : 130m3 15	5d 03-May-16	20-May-16	Od				Const. Bay6.5 :	1\$0m3	
C3840-STR-240 Const. Bay7 : 90m3 15	5d 06-May-16	24-May-16	Od				Const. Bay7: 9	0m3	
C3840-STR-260 Const. Bay8.1 : 104m3 10	0d 12-May-16	24-May-16	Od				Const. Bay81 :	104m3	
C3840-STR-270 Const. Bay8.2 : 104m3 10	0d 19-May-16	30-May-16	Od				Const. Bay8.2	104m3	
C3840-STR-280 Const. Bay8.5 : 39m3 (D2) 15	5d 25-May-16	11-Jun-16	Od				Çonst. Bay8.	5 39m3 (D2)	
C3840-STR-290 Curing, remove strut & falsework 14	4d 13-Jun-16	28-Jun-16	Od				Curing, rer	move strut& falsework	
Building Services & ABWF Works 53	33d 05-Jan-15	22-Oct-16	Dd						
	4d 05-Jan-15		Od						
	Dd	23-Jan-15	Od		⊷ Complete RC works				
	0d 05-Jan-15		0d		Installation of BS and ABWF works				
	0d 05-Jan-15		10		CN&SE access & cable routing connecting	to existing TST S	Station		
	6d 25-Feb-15		Od		T&C				
	6d 04-Mar-15		Od		Inspection prior to open for public use				
	Dd	11-Mar-15	Od		 Open for public use 				
			00						
	6d 29-Jun-16							10 dot Eiv	
	6d 29-Jun-16		b0					S 1st Fix	
C3840-BSM-110 BS 2nd Fix 40	0d 03-Sep-16	22-001-16	Od					BS 2nd Fix	
		Data	a Date: 11-Oct-13					Maeda/P/PMP/2	
Actual Work Milestone Remaining Work		Dati	Page 4 of 5	Prelimi	nary Master Programme		Date	Revision Checked	Approved
Critical Remaining Work				Ex	xtract Critical Path 2		27-Feb-14	REV 2 BG A	λW

Activity ID Activity Name Orig Planned Planned Finsh Total Float Call Float C					way	d Subv	on Road	narv	on, Car	i Stati	Sha Ts	Tsim \$	0-130	C384	RACT	CONTR				MTR		
	Jul A S Oct N D J	2017		M Apr M				2015	Marin	lon E	Oct N	1 	20	MADE			otal Float			Activity Name		Activity ID
		e all BS works in TER	<u>J Jul A J</u>		Jan			<u> </u>		Jan					Jan I		Od	22-Oct-16	0d	Complete all BS works in TER	C3840-BSM-120	

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

Appendix VIII

Implementation Schedule

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
	Noise Impact	1			-	
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 / cantilever 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 MeasuresThe Code of Practice on Good Management Practice	To minimize construction noise	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control

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
	 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 shall be maintained regularly; and Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable. 	emissions				Ordinance
	Air Quality Impact					
S.3.2	 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

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.3.3	 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

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		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	 Landscape and Visual Measures Screening of construction works by hoardings/noise barriers around works area with visually unobtrusive colours 	To reduce visual impact by construction works.	Contractor	Temporary Storage Area at Salisbury Road	Construction Stage	EIAO		
S.3.5	 Reinstating the affected amenity planting area at Salisbury Road after the completion of works 	To prevent loss of planter after construction	Contractor	Temporary Storage Area at Salisbury Road	Operation Stage	ETWB TCW No. 2/2004		



Appendix E

Status of Environmental Licenses and Permits



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	АРСО	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#005	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit		15 - 01 - 2016	29 - 01 - 2016	15 - 02 - 2016	14 - 08 - 2016	4nos Electric Water pump (whole site) or 1no Air Blower (TS) or 4nos Hand-held Drill (TS)	
005	CNP#006	NCO	Permit	Construction Noise Permit	EPD74A(s) Form 1 - Application for a Construction Noise Permit		22 - 07 - 2016	04 - 08 - 2016	15 - 08 - 2016	14 - 02 - 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 worki days of notification; 3. Implement the 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 	 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 immedia action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 worki days of notification; Implement the agreed proposals; Resubmit proposals if problem still n under control; Stop the relevant portio of works as determined by the ER until th exceedance is abated.

Event / Action	ET	IEC	ER	Contractor
	results;			
	8. If exceedance stops, cease additional monitoring.			

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.

ET	IEC	ER	Contractor	
 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 	
 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 	 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 	
	 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. 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 	 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. Notify IEC, ER, EPD and Contractor, and follow other actions Identify source Repeat measurement to confirm findings Increase monitoring frequency Increase monitoring Identify source Repeat measurement to confirm findings Increase monitoring Supervise the implementation of remedial measures. 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 	 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. Supervise the monitoring frequency to check mitigation effectiveness. Notify IEC, ER, EPD and Contractor, and follow other actions Increase monitoring frequency Increase monitoring frequency Repeat measures measures the implementation of remedial actions Repeat measures the monitoring frequency Check Contractor's measures the implementation of remedial actions Increase monitoring frequency Supervise the propose remedial measures. Increase monitoring frequency Repeat measures to determine possible mitigation to be implemented Supervise the implementation of remedial actions Review Contractor's measures and actions taken for the exceedances Supervise the implemented Inform IEC, ER and EPD the causes and actions taken for the exceedances Assess 	

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



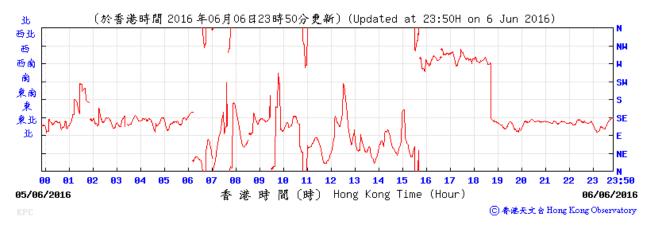
Appendix G

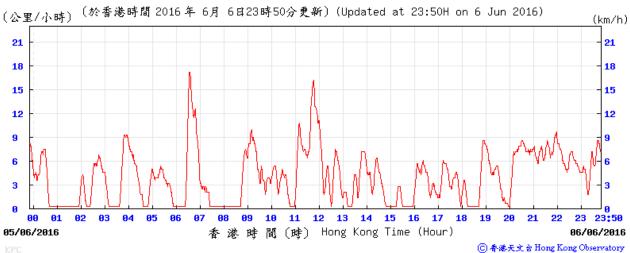
Weather Information from Hong Kong Observatory Weather Station

King's Park Weather Station – 06 June 2016



Wind Direction:





King's Park Weather Station – 07 June 2016

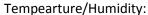


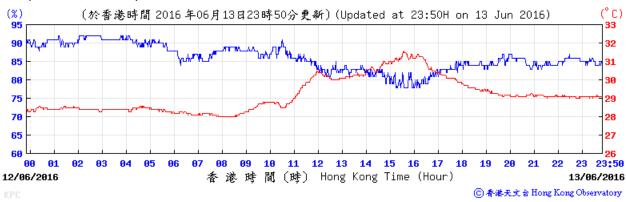
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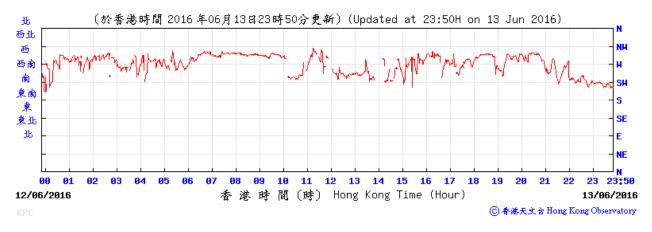


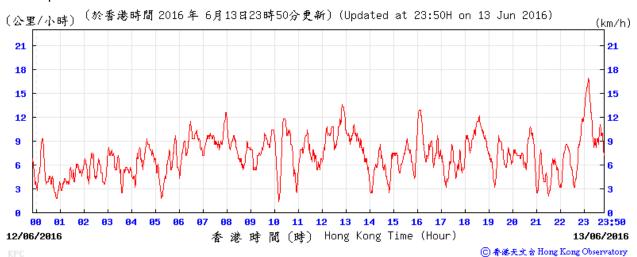
King's Park Weather Station – 13 June 2016



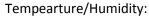


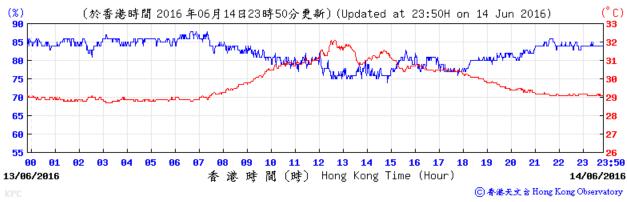
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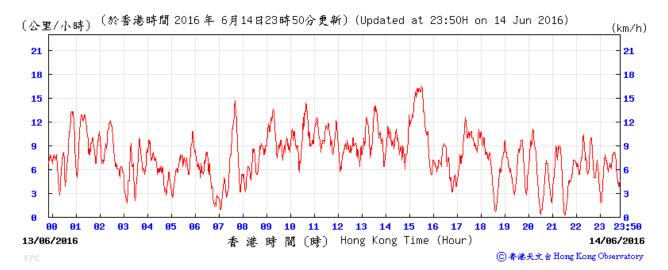
King's Park Weather Station – 14 June 2016



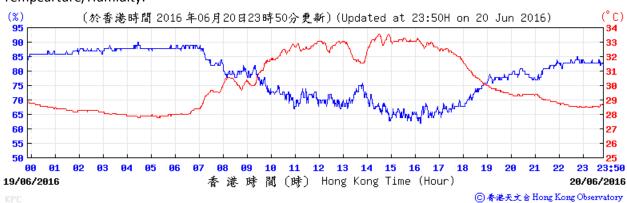


Wind Direction:



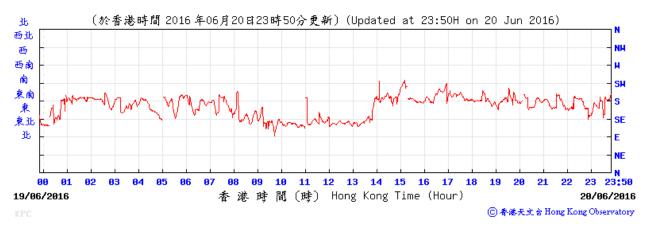


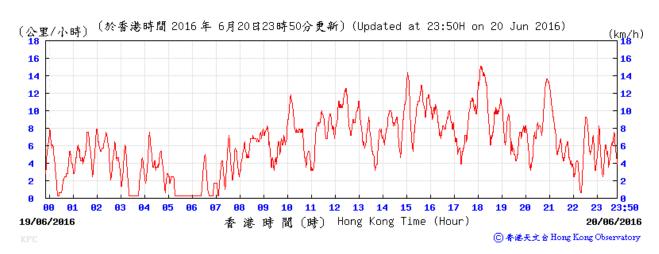
King's Park Weather Station – 20 June 2016



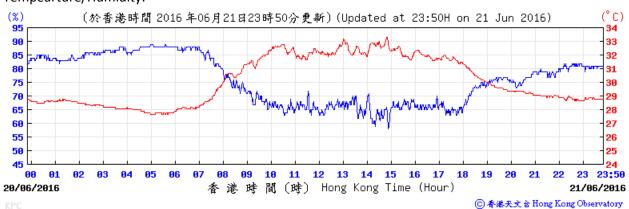
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King's Park Weather Station – 21 June 2016



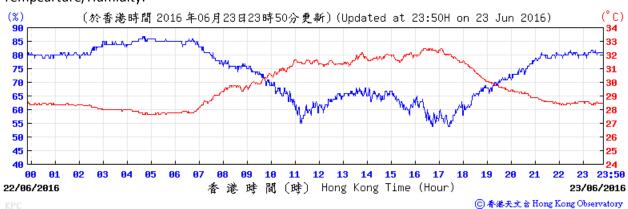
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Wind Direction:





King's Park Weather Station – 23 June 2016



Tempearture/Humidity:

Wind Direction:



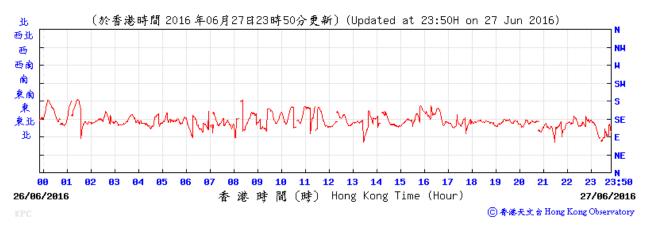


King's Park Weather Station – 27 June 2016



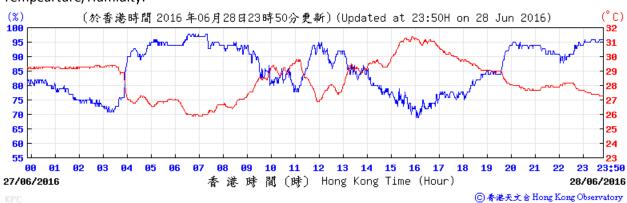
Tempearture/Humidity:

Wind Direction:



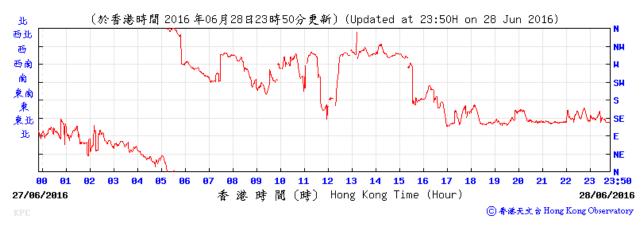


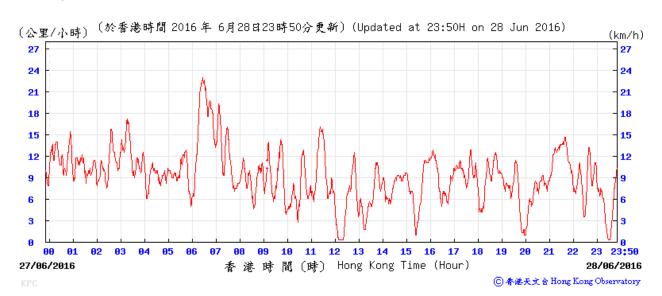
King's Park Weather Station – 28 June 2016



Tempearture/Humidity:

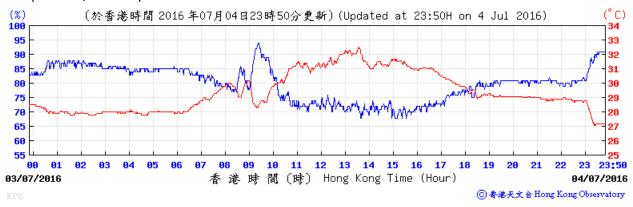
Wind Direction:





King's Park Weather Station – 04 July 2016

Tempearture/Humidity:

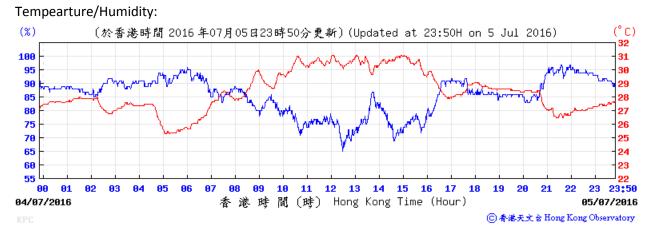


Wind Direction:

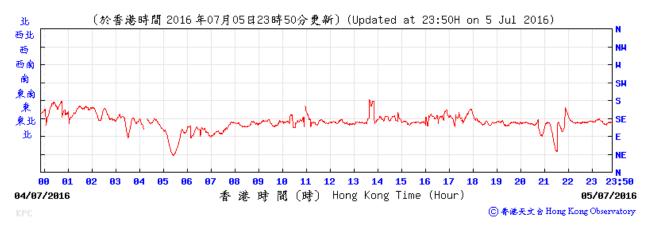




King's Park Weather Station – 05 July 2016

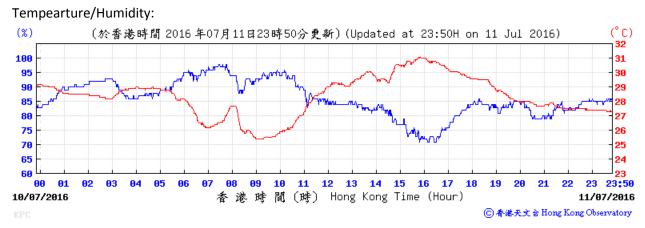


Wind Direction:





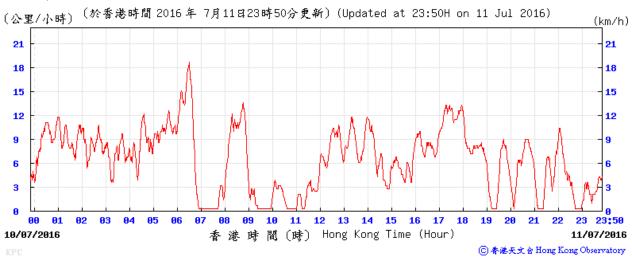
King's Park Weather Station – 11 July 2016



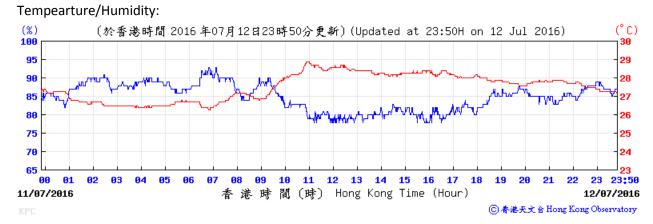
Wind Direction:





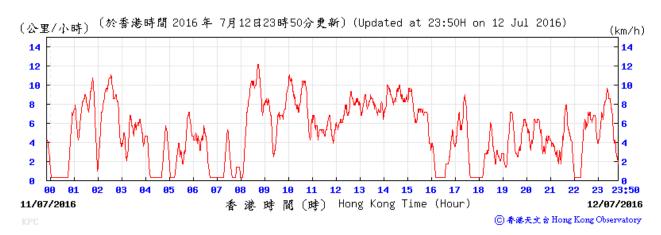


King's Park Weather Station – 12 July 2016



Wind Direction:





King's Park Weather Station – 18 July 2016



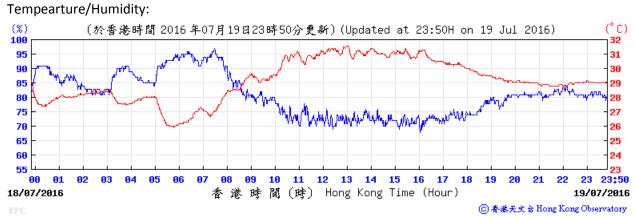
Tempearture/Humidity:

Wind Direction:

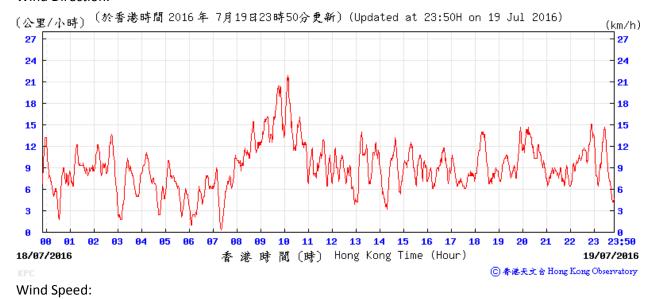


(於香港時間 2016 年 7月18日23時50分更新) (Updated at 23:50H on 18 Jul 2016) (公里/小時) (km/h) q з Ø 13 14 15 16 23 23:50 17/07/2016 香 漆 畦 閻 (畦) Hong Kong Time (Hour) 18/07/2016 ◎ 香港天文 含 Hong Kong Observatory

King's Park Weather Station – 19 July 2016

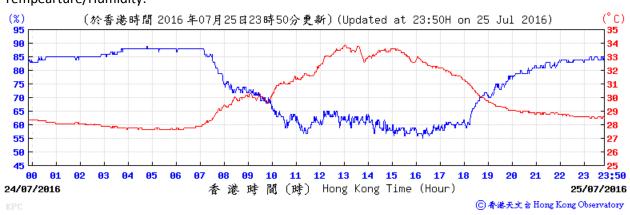


Wind Direction:



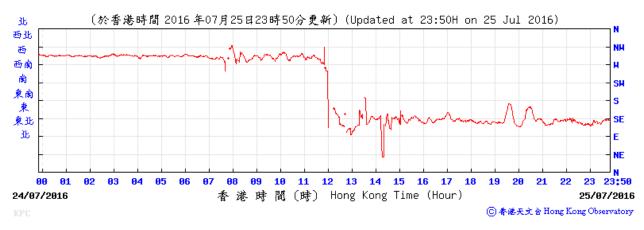


King's Park Weather Station – 25 July 2016

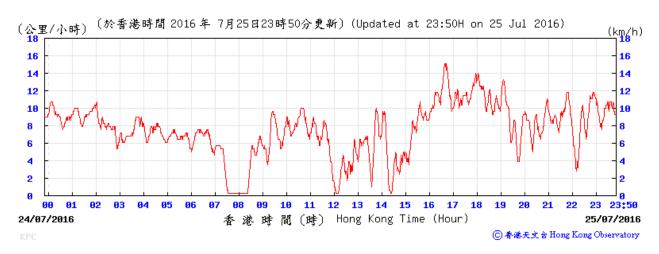


Tempearture/Humidity:

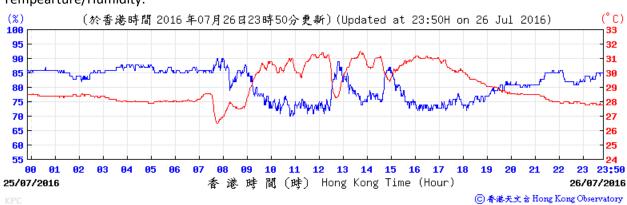
Wind Direction:





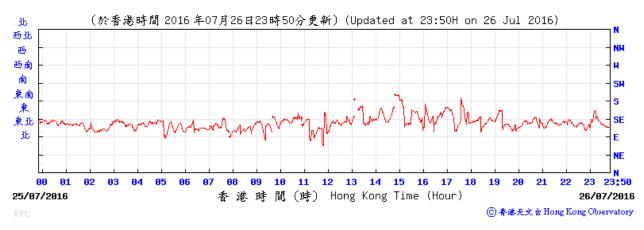


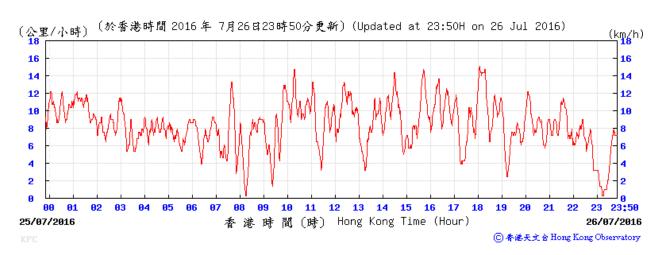
King's Park Weather Station – 26 July 2016



Tempearture/Humidity:

Wind Direction:





Date	Mean	e Mean		Mean Relative	Total	Wind	Average	
August 2016	Pressure (hPa)	Maximum	Mean	Minimum	Humidity (%)	Rainfall (mm	Direction (Degree)	Wind Speed Km/Hour (ms ⁻¹)
1	998.8	31.6	29.5	26.8	190	52.3	290	21.3 (5.9 ms ⁻¹)
2	995.9	29.5	27.1	25.1	120	14.3	190	52.3
3	1006.3	27.8	26.8	26.1	060	23.4	120	14.3
4	1008.7	28.6	26.9	26.1	050	11.1	060	23.4 (6.5 ms ⁻¹)
5	1008.3	32.3	29.3	27.0	250	20.4	050	11.1
6	1005.0	33.2	30.0	27.4	250	22.3	250	20.4
7	1002.8	33.4	30.4	28.2	240	17.9	250	22.3
8	1003.0	33.4	30.5	28.6	260	10.9	240	17.9 (5.0 ms ⁻¹)
9	1001.8	32.7	29.2	26.1	070	8.0	260	10.9 (3.0 ms ⁻¹)
10	1002.6	29.3	26.7	24.7	240	9.0	070	8.0
11	1003.2	29.9	27.2	25.2	250	11.0	240	9.0
12	1001.3	29.4	28.1	26.9	070	12.0	250	11.0
13	999.8	32.3	28.8	27.1	060	26.7	070	12.0
14	998.3	29.4	27.3	25.8	040	16.5	060	26.7
15	997.4	28.4	26.6	25.6	100	19.3	040	16.5
16	996.0	26.9	26.2	25.5	080	32.9	100	19.3
17	993.7	28.0	26.5	25.3	120	34.2	080	32.9
18	996.3	28.7	27.0	25.9	070	19.9	120	34.2 (9.5 ms ⁻¹)
19	1003.0	31.3	28.2	26.5	240	6.8	070	19.9
20	1004.7	32.4	29.2	27.4	230	12.0	240	6.8
21	1003.2	31.2	27.4	24.5	070	14.7	230	12.0
22	1004.7	33.0	29.3	27.3	090	5.0	070	14.7 (4.1 ms ⁻¹)
23	1004.8	33.4	29.7	27.2	070	10.9	090	5.0 (1.4 ms ⁻¹)
24	1003.8	33.5	30.1	27.9	060	11.7	070	10.9
25	1004.2	34.4	30.4	28.1	220	10.9	060	11.7
26	1004.6	33.6	30.4	28.1	080	8.3	220	10.9
27	1006.4	33.2	29.7	27.0	010	19.9	080	8.3
28	1006.4	31.0	27.6	25.4	050	27.1	010	19.9
29	1007.2	28.0	26.7	26.2	030	12.0	050	27.1 (7.5 ms ⁻¹)
30	1007.6	31.2	28.0	26.1	210	8.8	030	12.0 (3.3 ms ⁻¹)
31	1006.3	31.5	28.6	26.6	060	17.1	210	8.8

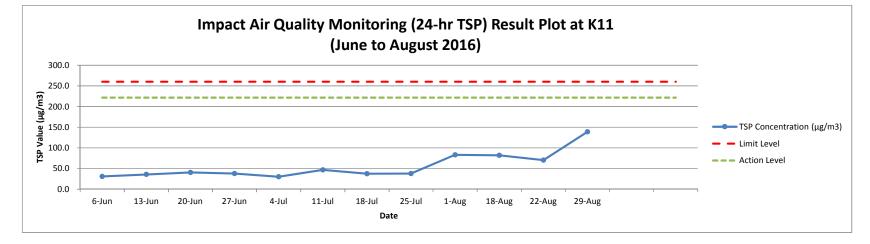
EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG AUGUST 2016 (Station: Hong Kong Observatory)

Note: Shaded rows denote monitoring days

Appendix H

Monitoring Results and Plots

Location	Monitoring Date		Weather Conditions	Temperature	Elapse Time			Flow Rate (CFM)			TSP		
		Start Time			Initial	Final	Sampling Hours	Initial	Final	Average Flow Rate	Concentration (µg/m3)	Action Level	Limit Level
K11	6-Jun-16	10:18	Overcast	25.4	684644	687058	24	40	40	40	31.0	221.6	260
	13-Jun-16	10:09	Overcast	28.8	687058	689462	24	39	40	40	35.9	221.6	260
	20-Jun-16	10:25	Sunny	32.5	689470	691899	24	37	38	38	40.8	221.6	260
	27-Jun-16	10:30	Cloudy	31.5	691899	694322	24	37	37	37	38.1	221.6	260
	4-Jul-16	7:00	Overcast	28.8	694322	696719	24	37	56	47	30.4	221.6	260
	11-Jul-16	9:00	Overcast	25.4	696719	699201	25	54	56	55	46.9	221.6	260
	18-Jul-16	8:30	Overcast	31.0	699201	701680	25	40	56	48	37.7	221.6	260
	25-Jul-16	8:45	Overcast	30.0	701680	704161	25	54	55	55	38.0	221.6	260
	1-Aug-16	8:30	Overcast	28.6	704169	706346	22	53	54	54	83.3	221.6	260
	18-Aug-16	15:00	Overcast	30	706348	708913	26	55	56	56	82.1	221.6	260
	22-Aug-16	8:30	Sunny	28.5	708924	711364	24	56	56	56	70.4	221.6	260
	29-Aug-16	9:30	Sunny	27.0	711380	713818	24	34	34	34	139.1	221.6	260

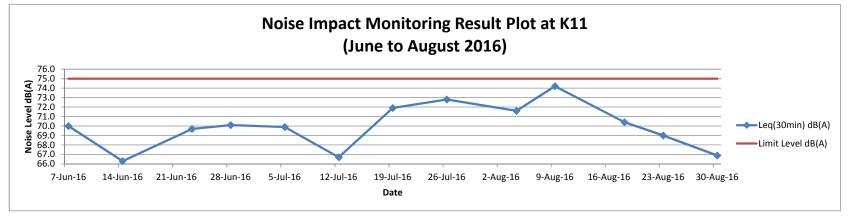


C3840-13C MTRCL Tsim Sha Tsui Station Carnarvon Road Subway and Entrances Modification Works Noise Impact Monitoring Results at K11 (June to August 2016)

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	7-Jun-16	Cloudy	0.4	10:06	10:36	65.3	75	70.0	71.5	68.0
	14-Jun-16	Cloudy	3.8	10:07	10:37	65.3	75	66.3	67.5	65.0
	23-Jun-16	Sunny	0.2	10:25	10:55	65.3	75	69.7	70.5	67.5
	28-Jun-16	Cloudy	1.4	10:00	10:30	65.3	75	70.1	70.0	67.5
	5-Jul-16	Sunny	0.6	10:31	11:01	65.3	75	69.9	70.5	68.5
	12-Jul-16	Sunny	1.4	10:18	10:48	65.3	75	66.7	68.0	64.5
	19-Jul-16	Cloudy	4.4	10:01	10:31	65.3	75	71.9	73.0	70.5
KTT AIT Mail	26-Jul-16	Sunny	1.2	11:30	12:00	65.3	75	72.8	75.5	64.5
	4-Aug-16	Overcast	2.1	14:05	14:35	65.3	75	71.6	73.0	70.0
	9-Aug-16	Sunny	0.4	10:36	11:06	65.3	75	74.2	78.0	68.5
	18-Aug-16	Sunny	0.8	14:37	15:07	65.3	75	70.4	72.0	67.0
	23-Aug-16	Sunny	0.9	10:09	10:39	65.3	75	69.0	70.0	67.5
	30-Aug-16	Sunny	0.1	10:02	10:32	65.3	75	66.9	68.0	65.0
	30-Aug-16	Sunny	0.1	10:02	10:32	65.3	75	66.9	68.0	

* Not collected

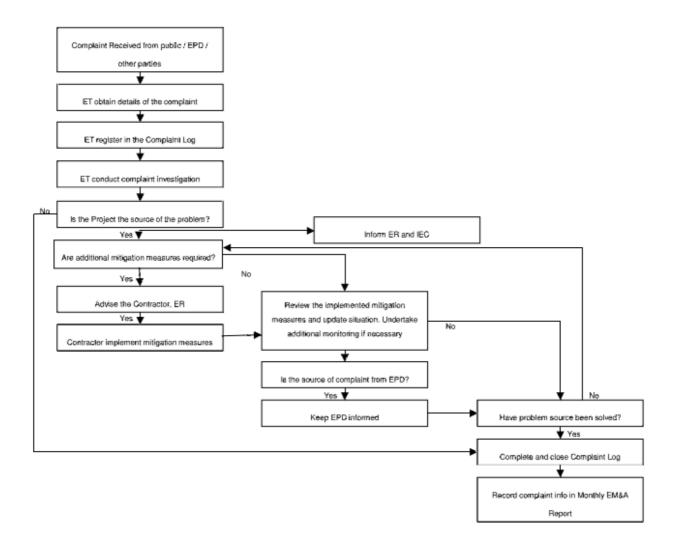
Red Bold indicates an exceedance of Limit Level



Appendix I

Flow Chart for Handling Environmental Complaints

Complaint Response Procedure



Appendix J

Waste Management Records

Monthly Summary Waste Flow Table for 2016 (year)

Contract No:C3840-13C Tsim Sha Tsui Station Carnarvon Road SubwayDate Reported:4-October-2016

		Actual Qua	ntities of Inert C&I	O Materials Generate	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	2.5295	-	-	-	2.5295	-	-	-	-	-	0.0202		
Jan	0.1751	-	-	-	0.1751	-	-	-	-	-	0.0036		
Feb	0.0326	-	-	-	0.0326	-	-	-	-	-	0.0029		
Mar	0.0932	-	-	-	0.0932	-	-	-	-	-	0.0023		
Apr	0.0786	-	-	-	0.0786	-	-	-	-	-	0.0000		
May	0.1061	-	-	-	0.1061	-	-	-	-	-	0.0033		
June	0.0411	-	-	-	0.0411	-	-	-	-	-	0.0000		
Sub-total	0.5267	-	-	-	0.5267	-	-	-	-	-	0.0121		
July	0.0951	-	-	-	0.0951	-	-	-	-	-	0.0010		
Aug	0.1478	-	-	-	0.1478	-	-	-	-	-	0.0000		
Sept	0.0427	-	-	-	0.0427	-	-	-	-	-	0.0007		
Oct	-	-	-	-	-	-	-	-	-	-	-		
Nov	-	-	-	-	-	-	-	-	-	-	-		
Dec	-	-	-	-	-	-	-	-	-	-	-		
Total	0.8123	-	-	-	0.8123	-	-	-	-	-	0.0138		
Acc. Total	3.3418	(accumulated quar	ntity of the project	= carried amount + t	his year amount)		0.0340						

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.