

Development at West Kowloon Cultural District

Monthly Environmental Monitoring and Audit
(EM&A) Report for August 2016

September 2016

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

Development at West Kowloon Cultural District

Monthly Environmental Monitoring and Audit
(EM&A) Report for August 2016

September 2016

This Monthly EM&A Report has been reviewed and certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:



Brian Tam
Environmental Team Leader (ETL)
West Kowloon Cultural District Authority

Date

14. 9. 2016

Verified by:



Fredrick Leong
Independent Environmental Checker (IEC)
Meinhardt Infrastructure & Environment Ltd

Date

14 Sep.16

Contents

Executive Summary	1
1 Introduction	3
1.1 Background	3
1.2 Project Organisation	3
1.3 Environmental Status in the Reporting Period	3
1.4 Summary of EM&A Requirements	4
2 Impact Monitoring Methodology	6
2.1 Introduction	6
2.2 Air Quality	6
2.2.1 Monitoring Parameters, Frequency and Duration	6
2.2.2 Monitoring Locations	6
2.2.3 Monitoring Equipment	6
2.2.4 Monitoring Methodology	7
2.3 Noise	8
2.3.1 Monitoring Parameters, Frequency and Duration	8
2.3.2 Monitoring Location	9
2.3.3 Monitoring Equipment	9
2.3.4 Monitoring Methodology	9
2.4 Landscape and Visual	10
2.4.1 Monitoring Program	10
3 Monitoring Results	11
3.1 Impact Monitoring	11
3.2 Air Quality Monitoring	11
3.2.1 1-hour TSP	11
3.2.2 24-hour TSP	11
3.3 Noise Monitoring	12
3.4 Landscape and Visual Impact	12
4 Environmental Site Inspection	13
4.1 Site Inspection	13
4.1.1 M+ Museum	13
4.1.2 Lyric Theatre Complex	15
4.2 Advice on the Solid and Liquid Waste Management Status	16
4.2.1 M+ Museum	16
4.2.2 Lyric Theatre Complex	16

4.3	Status of Environmental Licenses and Permits	16
4.3.1	M+ Museum	16
4.3.2	Lyric Theatre Complex	17
4.4	Recommended Mitigation Measures	17
4.4.1	M+ Museum	17
4.4.2	Lyric Theatre Complex	18
5	Compliance with Environmental Permit	19
6	Report in Non-compliance, Complaints, Notification of Summons and Successful Prosecutions	20
6.1	Record on Non-compliance of Action and Limit Levels	20
6.2	Record on Environmental Complaints Received	20
6.3	Record on Notifications of Summons and Successful Prosecution	20
7	Future Key Issues	21
7.1	Construction Works for the Coming Month(s)	21
7.1.1	M+ Museum	21
7.1.2	Lyric Theatre Complex	21
7.2	Key Issues for the Coming Month	21
7.2.1	M+ Museum	21
7.2.2	Lyric Theatre Complex	21
7.3	Monitoring Schedule for the Coming Month	21
8	Conclusions and Recommendations	22
8.1	Conclusions	22
8.2	Recommendations	22
Figure 1	Site Layout Plan and Monitoring Stations	23
	Appendices	24
A.	Project Organisation	25
B.	Tentative Construction Programme	26
C.	Action and Limit Levels for Construction Phase	27
D.	Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact	28

E. Monitoring Schedule	29
F. Calibration Certifications	30
G. Graphical Plots of the Monitoring Results	31
H. Meteorological Data Extracted from Hong Kong Observatory	32
I. Waste Flow table	33
J. Environmental Mitigation Measures – Implementation Status	34
K. Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions	35

Executive Summary

Mott MacDonald Hong Kong Limited (MMHK) was commissioned to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for the construction of M+ Museum Main Works (Contract No.: CC/2015/3A/022) and Lyric Theatre Complex Foundation Works (Contract No.: CC/2015/3A/014) at West Kowloon Cultural District (WKCD) (The Project) as part of the WKCD development. The Project Proponent is the West Kowloon Cultural District Authority (WKCDA). The construction works and EM&A programme for M+ Museum and Lyric Theatre Complex commenced on 31 October 2015 and 1 March 2016 respectively.

The overall works for the WKCD fall under two separate categories of Designated Project (DP) of the Environmental Impact Assessment Ordinance (EIAO), namely an “engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100 000” (Item 3 of Schedule 3) and “an underpass more than 100m in length under the built areas” (Item A.9, Part I, Schedule 2). An Environmental Permit No. EP-453/2013/B (EP) was issued with respect to the “Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District” which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO.

This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 August to 31 August 2016.

Exceedance of Action and Limit Levels

There was no breach of Action or Limit levels for Air Quality (1-hour TSP and 24-hour TSP) and Noise in this reporting month.

Implementation of Mitigation Measures

Construction phase weekly site inspections were carried out on 4, 12, 18 and 25 August 2016 for M+ Museum and 3, 10, 16, 24 and 31 August 2016 for Lyric Theatre Complex to confirm the implementation measures undertaken by the Contractors in the reporting month. The outcomes are presented in Section 4 and the status of implementation of mitigation measures in the site is shown in Appendix J.

Landscape and visual impact inspections were conducted as part of the abovementioned weekly site inspections during the reporting month. No adverse comment on landscape and visual aspects was made during these inspections.

EPD site inspection with Contractor was conducted on 1, 2 and 18 August 2016 at M+ Museum and the EPD inspectors were satisfied with the quality of effluent.

Record of Complaints

No environmental complaint was recorded in the reporting month.

Record of Notification of Summons and Successful Prosecutions

No notification of summons and successful prosecution were recorded in the reporting month.

Future Key Issues

The major site works at M+ Museum scheduled to be commissioned in the coming month include:

- Excavation

- Construction of pile caps
- Construction of slab
- Construction of columns & walls

The major site works at Lyric Theatre Complex scheduled to be commissioned in the coming month include:

- H-Pile Construction
- Bored Pile Construction
- Excavation and lateral support

Potential environmental impacts due to the construction activities, including air quality, noise, water quality, waste, landscape and visual, will be monitored or reviewed. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

1 Introduction

1.1 Background

Mott MacDonald Hong Kong Limited (MMHK) was commissioned to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for the construction of M+ Museum Main Works (Contract No.: CC/2015/3A/022) and Lyric Theatre Complex Foundation Works (Contract No.: CC/2015/3A/014) at West Kowloon Cultural District (WKCD) (The Project) as part of the WKCD development. The Project Proponent is the West Kowloon Cultural District Authority (WKCDA). The construction works and EM&A programme for M+ Museum and Lyric Theatre Complex commenced on 31 October 2015 and 1 March 2016 respectively.

The overall works for the WKCD fall under two separate categories of Designated Project (DP) of the Environmental Impact Assessment Ordinance (EIAO), namely an “engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100 000” (Item 3 of Schedule 3) and “an underpass more than 100m in length under the built areas” (Item A.9, Part I, Schedule 2). An Environmental Permit No. EP-453/2013/B (EP) was issued with respect to the “Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District” which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO. The captioned projects include part of the abovementioned underpass road located within the site boundary also falls under this same category.

The M+ museum development aims to provide an iconic presence for the M+ museum, semi-transparent vertical plane, housing education facilities, a public restaurant and museum offices. At ground and lower levels, generous access will be provided to the park and other West Kowloon Cultural District facilities, alongside a public resource centre, theatres, retail and dining, and back-of-house functions.

The 1,200-seat Lyric Theatre Complex will be Hong Kong’s first world-class facility for dance performances, including ballet, contemporary and Chinese dance forms. In the run up to the opening of further major performing arts venues in the WKCD, it will also be used for a wide variety of performing arts events including drama, opera and musical performances. The Lyric Theatre Complex will act as a platform for Hong Kong’s leading arts organisations, and be a new major venue to show programmes from Asia and worldwide.

The Monthly EM&A Report is prepared in accordance with the Condition 3.4 of the Environmental Permit No. EP-453/2013/B. This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 August to 31 August 2016. The purpose of this report is to summarise the findings in the EM&A of the project over the reporting period.

1.2 Project Organisation

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

1.3 Environmental Status in the Reporting Period

During the reporting period, construction works at M+ Museum undertaken include:

- Excavation

- Construction of pile caps
- Construction of slab
- Construction of columns & walls

During the reporting period, construction works at Lyric Theatre Complex undertaken include:

- H-Pile Construction
- Bored Pile Construction
- Excavation and lateral support

The Construction Works Programmes of M+ Museum and Lyric Theatre Complex are provided in **Appendix B**. A layout plan of the Project is provided in **Figure 1**. Please refer to **Table 4.3** on the status of the environmental licenses.

1.4 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring of air quality, noise, landscape and visual as specified in the approved EM&A Manual.

A summary of impact EM&A requirements is presented in **Table 1.1**.

Table 1.1: Summary of Impact EM&A Requirements

Parameters	Descriptions	Locations	Frequencies
Air Quality	24-Hour TSP	AM1 - International Commerce Centre	At least once every 6 days
	1-Hour TSP	AM1 - International Commerce Centre	At least 3 times every 6 days
	24-Hour TSP	AM2 - The Harbourside Tower 1	At least once every 6 days
	1-Hour TSP	AM2 - The Harbourside Tower 1	At least 3 times every 6 days
Noise	Leq, 30 minutes	NM1 - Podium level of The Harbourside Tower 1	Weekly
Landscape & Visual	Monitor implementation of proposed mitigation measures during the construction stage	As described in Table 9.1 and 9.2 of the EM&A Manual	Bi-weekly

Given that the Project covers only a small part of the whole WKCD area (i.e. M+ Museum, Lyric Theatre Complex and respective portions of underpass road), it was proposed that the EM&A programme for the Project should only require 1 noise monitoring station and 2 air quality monitoring stations located closest to the Project area. Currently, the works under the captioned project are confined in the western part of the WKCD site. Therefore, only the monitoring stations AM1, AM2 and NM1 were set up. Other monitoring locations are too far away (i.e. AM3 to AM5 and NM2 to NM5) are not included in this EM&A programme until the construction of the corresponding area commences.

The Harbourside management office formally rejected our proposal of setting up air quality and noise monitoring equipment on its premises at the podium level of Tower 1 (AM2/NM1) on 10 November 2015. Alternative noise monitoring location was identified at The Arch (NM2), however The Arch management office formally rejected our proposal of setting up noise monitoring equipment on its premises on 23 November 2015. Nevertheless, suitable air quality monitoring location at AM2 was identified on the ground floor in front of The Harbourside Tower 1, which is at the same location as that of baseline monitoring for consistency. No management approval is required at the ground floor for conducting the air monitoring and a secure electricity supply is available there. Noise monitoring at G/F of Harbourside will not be representative. Approval from the management office of the International Commerce Centre has been granted on 29 February 2016 for conducting noise monitoring at the alternative noise monitoring location identified at the podium floor (NM1A) which is

free from screening to the construction activities. Therefore, 2 air quality monitoring stations and 1 noise impact monitoring station were confirmed for the impact monitoring.

The Environmental Quality Performance Limits for air quality and noise are shown in **Appendix C**.

The Event and Action Plan for air quality, construction noise, landscape and visual are shown in **Appendix D**.

The EM&A programme followed the recommended mitigation measures in the EM&A Manual. The EM&A requirements as well as the summary of implementation status of the environmental mitigation measures are provided in **Appendix J**.

2 Impact Monitoring Methodology

2.1 Introduction

For air quality and noise, the monitoring methodology, including the monitoring locations, monitoring equipment used, monitoring parameters, and frequency and duration etc., for air quality and noise are detailed in this Section. The environmental monitoring schedules for the reporting period and the tentative monitoring Schedule for the coming month are provided in **Appendix E**.

For landscape and audit impact, the relevant EM&A monitoring requirements and details are also presented in this Section.

2.2 Air Quality

2.2.1 Monitoring Parameters, Frequency and Duration

Table 2.1 summarizes the monitoring parameters, frequency and duration of the TSP monitoring.

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Frequency	Duration
24-hour TSP	At least once in every six-days	24 hours
1-hour TSP	At least 3 times every six-days	60 minutes

2.2.2 Monitoring Locations

Currently, the works under the captioned project are confined in the western part of the WKCD site. Therefore, only the monitoring stations AM1 and AM2 were set up at the proposed locations in accordance with updated EM&A Manual. Location of the monitoring station is given in **Table 2.2** and shown in **Figure 1**.

Table 2.2: Air Quality Monitoring Station

Monitoring Station	Location
AM1	International Commerce Centre (ICC)
AM2	The Harbourside Tower 1

2.2.3 Monitoring Equipment

Continuous 24-hour TSP air quality monitoring was conducted using High Volume Sampler (HVS) (Model: TE-5170) located at the designated monitoring station. The HVS meets all the requirements stated in of the EM&A Manual. Portable direct reading dust meter was used to carry out the 1-hour TSP monitoring. **Table 2.3** summarizes the equipment used in the impact air quality monitoring. Copies of the calibration certificates for the HVS, calibration kit and portable dust meters are attached in **Appendix F**.

Table 2.3: TSP Monitoring Equipment

Equipment	Model
24-hour TSP monitoring	
High Volume Sampler	TE-5170 (Serial No.: 0767 and 8919)
Calibrator	TE-5025A (Orifice I.D.: 2454)
1-hour TSP monitoring	
Portable direct reading dust meter	Sibata LD-3B (Serial No.: 245834)

Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. The HVS calibration orifice will be calibrated annually. Calibration certificate of the TE-5025A Calibration Kit and the HVS are provided in **Appendix F**

The 1-hour TSP monitoring should be determined periodically (e.g. annually) by the HVS to check the validity and accuracy of the results measured by direct reading method.

2.2.4 Monitoring Methodology

24-hour TSP Monitoring

Installation

The HVS was installed at the site boundary. The following criteria were considered in the installation of the HVS.

- A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
- The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
- A minimum of 2 metres separation from walls, parapets and penthouse was required for rooftop sampler.
- A minimum of 2 metres separation from any supporting structure, measured horizontally was required.
- No furnace or incinerator flues or building vent were nearby.
- Airflow around the sampler was unrestricted.
- The sampler has been more than 20 metres from any drip line.
- Permission was obtained to set up the sampler and to obtain access to the monitoring station.
- A secured supply of electricity is needed to operate the sampler.

Preparation of Filter Papers

- Glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected.
- The filters used are specified to have a minimum collection efficiency of 99 percent for 0.3 µm (DOP) particles.
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C with relative humidity (RH) < 50% and was not variable by more than ±5 %. A convenient working RH was 40%. All preparation of filters was done by Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory.

Field Monitoring Procedures

- The power supply was checked to ensure the HVS works properly.
- The filter holder and the area surrounding the filter were cleaned.
- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- The shelter lid was closed and was secured with the aluminium strip.
- The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flow rate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.3 m³/min. The range specified in the EM&A Manual was between 0.6-1.7 m³/min.

- The programmable timer was set for a sampling period of 24 hours, and the starting time, weather condition and the filter number were recorded.
- The initial elapsed time was recorded.
- At the end of sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed.
- All monitoring information was recorded on a standard data sheet.
- Filters were sent to a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory for analysis.

Maintenance and Calibration

- The HVS and its accessories are maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVSs were calibrated upon installation and thereafter at bi-monthly intervals. The calibration kits were calibrated annually.
- Calibration records for HVS and calibration kit are shown in **Appendix F**.

1-hour TSP Monitoring

Field Monitoring

The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

- Turn the power on.
- Close the air collecting opening cover.
- Push the "TIME SETTING" switch to [BG].
- Push "START/STOP" switch to perform background measurement for 6 seconds.
- Turn the knob at SENSI ADJ position to insert the light scattering plate.
- Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
- Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
- Pull out the knob and return it to MEASURE position.
- Setting time period of 1 hour for the 1-hour TSP measurement.
- Push "START/STOP" to start the 1-hour TSP measurement.
- Regular checking of the time period setting to ensure monitoring time of 1 hour.

Maintenance and Calibration

- The 1-hour dust meter would be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of the air quality monitoring.
- Calibration records for direct dust meters are shown in **Appendix F**.

Weather Condition

- Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix H**.

2.3 Noise

2.3.1 Monitoring Parameters, Frequency and Duration

Table 2.4 summarizes the monitoring parameters, frequency and duration of noise monitoring. The noise in A-weighted levels L_{eq} , L_{10} and L_{90} are recorded in a 30-minute interval between 0700 and 1900 hours.

Table 2.4: Noise Monitoring Parameters, Period and Frequency

Time Period	Parameters	Frequency
Daytime on normal weekdays (0700-1900 hours)	Leq(30 min), L90(30 min) & L10 (30 min)	Once every week

2.3.2 Monitoring Location

Currently, the works under the captioned project are confined in the western part of the WKCD site. Therefore, only the monitoring station NM1A was set up at the proposed location in accordance with updated EM&A Manual. Location of the monitoring station is given in **Table 2.5** and shown in **Figure 1**.

Table 2.5: Noise Monitoring Station

Monitoring Station	Location
NM1A	Podium floor of International Commerce Centre (ICC)

Source: <Insert Notes or Source>

2.3.3 Monitoring Equipment

Integrating Sound Level Meter was used for noise monitoring. It was a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{Aeq}) and percentile sound pressure level (L_x). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). **Table 2.6** summarizes the noise monitoring equipment model being used.

Table 2.6: Noise Monitoring Equipments

Monitoring Station	Equipment Model	
	Integrating Sound Level Meter	Calibrator
NM1A	Rion NL-52 (Serial No.00131627)	Rion NC-73 (Serial No.10997142)

2.3.4 Monitoring Methodology

Field Monitoring

- The microphone of the Sound Level Meter was set at least 1.2 m above the ground.
- Free Field measurement was made at the monitoring locations.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting: A
 - time weighting: Fast
 - time measurement: 30 minutes intervals (between 0700-1900 on normal weekdays)
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1 kHz. If the difference in the calibration level before and after measurement was more than 1 dB, the measurement would be considered invalid and has to be repeated after re-calibration or repair of the equipment.
- During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, any site observations and noise sources were recorded on a standard record sheet.
- A correction of +3dB(A) was made to the free field measurements.

Maintenance and Calibration

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

Weather Condition

- Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix H**.

2.4 Landscape and Visual

2.4.1 Monitoring Program

Table 2.7 details the monitoring program (as proposed in the WKCD EIA report) for landscape and visual impact during the construction phase.

Table 2.7: Monitoring Program for Landscape and Visual Impact during Construction Phase

Stage	Monitoring Task	Frequency	Report	Approval
Construction	Monitor implementation of proposed mitigation measures during the construction stage.	Bi-weekly	ET to report on Contractor's compliance	Counter-signed by IEC

During the landscape and visual impact monitoring, any changes in relation to the landscape and visual amenity should be monitored with reference to the baseline conditions of the site. In addition, mitigation measures were proposed in the WKCD EIA report to minimise the landscape and visual impacts during the construction phase. The proposed mitigation measures as shown in Table 9.1 and Table 9.2 of the EM&A Manual should be checked for proper implementation.

3 Monitoring Results

3.1 Impact Monitoring

Construction impact monitoring for air quality, noise and landscape and visual impact was undertaken in compliance with the EM&A Manual during the reporting month.

3.2 Air Quality Monitoring

3.2.1 1-hour TSP

Results of 1-hour TSP at the monitoring location AM1 and AM2 are summarised in **Table 3.1**. Graphical plots of the monitoring results are shown in **Appendix G**.

Table 3.1: Summary of 1-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	1-hour TSP ($\mu\text{g}/\text{m}^3$)			Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1st Result	2nd Result	3rd Result			
AM1	03-Aug-16	10:45	62	58	55	51-70	273.7	500
	09-Aug-16	10:21	64	66	70			
	15-Aug-16	10:40	55	57	60			
	19-Aug-16	8:04	51	53	55			
	25-Aug-16	10:47	51	55	52			
	31-Aug-16	10:30	64	61	70			
AM2	03-Aug-16	10:53	62	60	56	54-77	274.2	500
	09-Aug-16	10:33	69	70	74			
	15-Aug-16	10:52	64	59	67			
	19-Aug-16	8:14	59	60	66			
	25-Aug-16	10:57	54	59	57			
	31-Aug-16	10:42	75	69	77			

3.2.2 24-hour TSP

Results of 24-hour TSP at the monitoring location AM1 and AM2 are summarised in **Table 3.2**. Graphical plots of the monitoring results are shown in **Appendix G**.

Table 3.2: Summary of 24-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	Monitoring Results ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1	03-Aug-16	10:43	43	43-51	143.6	260
	09-Aug-16	10:23	51			
	15-Aug-16	10:42	47			
	19-Aug-16	08:00	44			
	25-Aug-16	10:45	48			
	31-Aug-16	10:32	49			
AM2	03-Aug-16	10:55	43	43-64	151.1	260
	09-Aug-16	10:35	64			
	15-Aug-16	10:54	56			

Monitoring Station	Monitoring Date	Start Time	Monitoring Results ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
	19-Aug-16	08:18	50			
	25-Aug-16	11:00	43			
	31-Aug-16	Suspended due to Electricity Issue				

No exceedance of 1-hour and 24-hour TSP (Action or Limit Level) was recorded in the reporting period.

3.3 Noise Monitoring

The construction noise monitoring results at the monitoring location NM1A are summarized in **Table 3.3**. Graphical plots of the monitoring data and the station set-up of a free-field measurement are shown in **Appendix G**.

Table 3.3: Summary of noise monitoring results during normal weekdays

Monitoring Date	Start Time	End Time	Leq (30 mins), dB(A)	Limit Level for Leq (dB(A))
02-Aug-16	14:00	14:30	69.2	
09-Aug-16	14:00	14:30	69.2	
15-Aug-16	14:00	14:30	68.7	75
25-Aug-16	14:00	14:30	69.0	
31-Aug-16	14:00	14:30	69.1	

Remarks:

+3dB (A) correction was applied to free-field measurement.

No exceedance (Action/Limit Level) of construction noise was recorded in the reporting period as no noise related environmental complaint was received during the reporting period and noise levels recorded during the monitoring period were below 75 dB(A).

Construction works were extended to holidays on 7, 14, 21 and 28 August 2016. Additional monitoring was carried out during the restricted hours on 7, 14, 21 and 28 August 2016. The measured L_{eq} (30 mins) is in the range of 68.1 – 69.4 dB(A). Construction Noise Permit for the works carried out during restricted hours was obtained and listed in **Table 4.3**.

3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 4 and 18 August 2016 for M+ Museum and 3, 16 and 31 August 2016 for Lyric Theatre Complex during the reporting month. As reviewed by the registered Landscape Architect, no adverse comment on landscape and visual aspects was made during these inspections.

The landscape and visual mitigation measures were implemented during the reporting period. The summary of implementation status of the environmental mitigation measures are provided in **Appendix J**.

4 Environmental Site Inspection

4.1 Site Inspection

4.1.1 M+ Museum

Construction phase weekly site inspections were carried out on 4, 12, 18 and 25 August 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 12 August 2016. EPD site inspection with Contractor was conducted on 1, 2 and 18 August 2016. Items including overall drainage arrangements, water samples at discharge points were inspected. No non-compliance was recorded during the site inspection. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.1**.

Table 4.1: Summary of Site Inspections and Recommendations for M+ Museum

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
28 Jul 2016	Water quality	The contractor was reminded to put boot washing facilities in proper place for use near Gate 1.	The contractor has provided boot washing facilities near Gate 1.	4 Aug 2016
28 Jul 2016	Waste management	The contractor was reminded to enhance the cleaning frequency of all drip trays.	The contractor has enhanced cleaning frequency of the drip trays.	4 Aug 2016
4 Aug 2016	Water quality	The contractor was reminded to provide pump near wetsep no.5 to collect the stagnant water for wastewater treatment.	The contractor has cleared the stagnant water near wetsep no.5.	12 Aug 2016
4 Aug 2016	Waste management	Oil stain was found on the ground near discharge point at M+. The contractor as reminded to clear the oil stain and treat it as chemical waste.	The contractor has cleared the oil stain near M+ discharge point	10 Aug 2016
4 Aug 2016	Waste management	Some chemical containers was found without drip trays in some site area and at wetsep no.2. The contractor was reminded to remove those chemical containers if not in use.	The chemical containers previously observed without drip trays in site and wetsep no .2 was removed.	10 Aug 2016
4 Aug 2016	Water quality	The effluent at M+ discharge point was found within acceptable pH range, but a bit milky comparing with control solution. It was found that some site runoff was washed into one of the dewatering well which was the cause of milky effluent observed. The contractor was reminded to collect the site runoff and apply wastewater treatment before discharge.	The effluent at M+ discharge point was found visually clear when comparing with control solution.	10 Aug 2016
12 Aug 2016	Waste management	The chemical store was observed without lock. The contractor was reminded to provide lock and improve the access to the chemical store.	Follow-up status will be provided in the next reporting month	On-going
12 Aug 2016	Others	The contractor was reminded to provide proper protection for the trees near seafront area.	The contractor has provided protection to the trees near seafront.	18 Aug 2016

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
12 Aug 2016	Water quality	The contractor was reminded to enhance the wastewater treatment at wetsep no. 2 and 5.	Follow-up status will be provided in the next reporting month	On-going
12 Aug 2016	Water quality	The contractor was reminded to seal the footing of the hoarding near seafront to prevent leakage of site runoff.	The contractor has sealed the footing of the hoarding near seafront.	18 Aug 2016
12 Aug 2016	Waste management	The contractor was reminded to provide drip trays for all containers in site area. The contractor was also reminded to replace the drip trays near wetsep no.4 with a larger one as the drip tray was observed not sufficient.	Follow-up status will be provided in the next reporting month	On-going
12 Aug 2016	Water quality	The effluent at ICP discharge point was found visually clear and within acceptable pH range.	N/A	N/A
18 Aug 2016	Water quality	The contractor was reminded to clearly label the pipe to indicate the pipe flow at A10a.	The contractor has removed the pipe at A10a.	25 Aug 2016
18 Aug 2016	Waste management	The contractor was reminded to remove the construction waste/ refuse off site.	The contractor has removed the refuse off site.	25 Aug 2016
18 Aug 2016	Water quality	The contractor was reminded to remove the stagnant water at B1 slab.	The contractor has removed the stagnant water at B1 slab	25 Aug 2016
18 Aug 2016	Water quality	Overflow was observed at wetsep no. 3. The contractor was reminded to rectify it as soon as possible.	The contractor was rectified the overflow previously observed at wetsep no. 3.	25 Aug 2016
18 Aug 2016	Water quality	The contractor was reminded to remove the stagnant water near wetsep no. 5 and review the treatment capacity of wetsep no.5.	The contractor has removed the stagnant water near wetsep no. 5 and diverted a pipe from wetsep no. 5 to no. 3.	25 Aug 2016
18 Aug 2016	Waste management	Oil leakage was observed at ICP. The contractor was reminded to remove the oil leakage and treat it as chemical waste.	The contractor has removed the oil leakage at ICP.	25 Aug 2016
18 Aug 2016	Water quality	Effluent at ICP discharge point and all wetseps at M+ was checked and found visually clear comparing with control solution and in acceptable pH range.	N/A	N/A
25 Aug 2016	Water quality	The contractor was reminded to provide an updated drainage layout plan at each wetsep.	Follow-up status will be provided in the next reporting month	On-going
25 Aug 2016	Water quality	The contractor to provide wheel washing at bar bending yard.	Follow-up status will be provided in the next reporting month	On-going
25 Aug 2016	Air quality	The contractor was reminded to enhance water spraying at bar bending yard as the ground was observed dry and dusty.	Follow-up status will be provided in the next reporting month	On-going
25 Aug 2016	Water quality	The contractor was reminded to remove stagnant water at B1 slab.	Follow-up status will be provided in the next reporting month	On-going
25 Aug 2016	Water quality	Leakage of muddy water was observed for a pipe at Gate 3. The contractor was reminded to rectify it and ensure the muddy water was treated before discharging.	Follow-up status will be provided in the next reporting month	On-going
25 Aug 2016	Water quality	Effluent at discharge point at ICP and all wetseps at M+ was	N/A	N/A

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
		checked and found visually clear comparing with standard solution and in acceptable pH range.		

4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 3, 10, 16, 24 and 31 August 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 16 August 2016. No non-compliance was recorded during the site inspection. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.2**.

Table 4.2: Summary of Site Inspections and Recommendations for Lyric Theatre Complex

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
3 Aug 2016	Water quality	The contractor was reminded to install a trench near area L02 to avoid surface runoff to the harbour.	A trench has been installed to avoid surface runoff to the harbour.	6 Aug 2016
10 Aug 2016	Water quality	The treated effluent at both wetseps was observed to be muddy. The contractor was reminded to check the functionality of wetseps and ensure proper dosage of chemicals.	De-sludging and clearance of muddy effluent at both Wetsep units were conducted.	13 Aug 2016
10 Aug 2016	Waste management	The oil tank was not properly placed inside the drip tray. The contractor was reminded to ensure proper chemical storage.	Oil drum was placed properly inside drip tray.	13 Aug 2016
10 Aug 2016	Waste management	Oil stain was observed at the site. The contractor was reminded to remove it and treat it as chemical waste.	Oil stain was cleaned up and no longer observed.	13 Aug 2016
16 Aug 2016	Air quality	The emission from a generator appeared to be slightly dark. The Contractor was reminded to ensure proper maintenance to prevent dark smoke emission.	Maintenance of generator has been undertaken to prevent dark smoke emission.	19 Aug 2016
16 Aug 2016	Water quality	Leakage of muddy site runoff was observed at the public footpath via the site hoarding. The Contractor was asked to seal any leaks at the bottom of site hoarding and clear the observed leakage.	The site runoff has been cleaned and the site hoarding has been sealed.	19 Aug 2016
24 Aug 2016	Air quality	Haul road was observed near area L02 and L03. The contractor was reminded to increase water spraying frequency.	The contractor has increased water spraying frequency.	31 Aug 2016
24 Aug 2016	Noise	The panel of the power pack was found open. The contractor was reminded to close the panel of the power pack.	The power pack has been removed.	31 Aug 2016
31 Aug 2016	Water quality	Turbid water was observed at the wetsep near site entrance. The contractor was reminded to desludge more frequently to ensure good efficiency of wetsep.	Follow-up status will be provided in the next reporting month.	On-going

4.2 Advice on the Solid and Liquid Waste Management Status

The Contractors have been registered as a chemical waste producer for the Project. Construction and demolition (C&D) material sorting will be carried out on site. A sufficient number of receptacles were available for general refuse collection.

4.2.1 M+ Museum

As advised by the Contractor, 219.23 ton and 1,058.34 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively, while 104.9 ton of general refuse was disposed of at SENT landfill. 111.3 ton of metals, 0.3 ton of paper/cardboard packaging, 0 ton of plastic and 38.5 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 12,432.0 ton of inert C&D materials were reused in other projects. 0 ton of chemical waste was collected by licensed contractors in the reporting period.

The actual amounts of different types of waste generated by the activities of construction works at M+ Museum in the reporting month are shown in **Appendix I**.

4.2.2 Lyric Theatre Complex

As advised by the Contractor, 2631.8 ton and 11788.1 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 respectively, while 11.1 ton of general refuse was disposed of at SENT landfill. 43.9 ton of metals, 0 ton of paper/cardboard packaging, 0 ton of plastic and 0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 0 ton of inert C&D materials was reused in other projects. 0 ton of chemical wastes was collected by licensed contractors in the reporting period.

The actual amounts of different types of waste generated by the activities of construction works at Lyric Theatre Complex in the reporting month are shown in **Appendix I**.

4.3 Status of Environmental Licenses and Permits

The environmental permits, licenses, and/or notifications on environmental protection for this Project which were valid during the period are summarised in **Table 4.3 and Table 4.4**.

4.3.1 M+ Museum

Table 4.3: Status of Environmental Submissions, Licenses and Permits for M+ Museum

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Chemical Waste Producer Registration				
5213-217-H2913-45	05-Nov-15	--	Valid	--
Billing Account Construction Waste Disposal				
7023393	13-Oct-15	--	Account Active	--
Construction Noise Permit				
GW-RE0637-16	30-Jun-16	29-Dec-16	Vaild	--
Wastewater Discharge License				
WT00023633-2016	4-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
394083	7-Oct-15	--	Notified	--

4.3.2 Lyric Theatre Complex

Table 4.4: Status of Environmental Submissions, Licenses and Permits for Lyric Theatre Complex

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Chemical Waste Producer Registration				
5213-217-G2347-39	17-Feb-16	--	Valid	--
Billing Account Construction Waste Disposal				
7024189	25-Jan-16	--	Account Active	--
Construction Noise Permit				
GW-RE0402-16	25-Apr-16	24-Oct-16	Valid	--
Wastewater Discharge License				
WT00023648-2016	9-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
398075	18-Jan-16	--	Notified	--

4.4 Recommended Mitigation Measures

The EM&A programme followed the recommended mitigation measures in the EM&A Manual. The EM&A requirements as well as the summary of implementation status of the environmental mitigation measures are provided in **Appendix J**. In particular, the following mitigation measures were brought to attention during the site inspections:

4.4.1 M+ Museum

Chemical and Waste Management

- All chemicals stored on site should be provided with drip trays.
- Locks should be provided to chemical store.
- Drip trays should be kept in good condition.
- Any chemical leakage should be properly collected and treated as chemical waste.
- Good housekeeping of site should be maintained.

Air Quality

- Maintain high standard of housekeeping to prevent emission of fugitive dust.

Water Quality

- Wetsep units should be regularly checked to ensure proper function and adequate capacity of the system to treat wastewater or runoff before discharge.
- All wastewater or site runoff must be treated in wastewater treatment facilities before discharge.
- Provide drainage layout plan for all wetsep units and all pipes should be clearly labelled to indicate the pipe flow.
- Frequent checking of pipes to ensure no leakage
- All stagnant water in site area should be properly collected and treated before discharge.
- Wheel washing should be carried out at proper wheel washing facilities and within site area.
- Boot washing facilities should be provided at site entrance.
- Ensure no seepage at site boundary to prevent any runoff from flowing out of site area.

Others

- Proper tree protection should be provided to trees

4.4.2 Lyric Theatre Complex

Chemical and Waste Management

- All chemicals stored on-site should be provided with drip trays.
- Drip trays should be kept in good condition.
- Chemical waste in drip trays should be frequently removed and ensure no leakage of oil/chemicals from machines.

Air Quality

- Enhance water spraying frequency to reduce dust impact.
- All machines on-site should be regularly checked.

Water Quality

- Stagnant water at the site should be regularly removed.
- No leakage of site runoff from the site near site boundary and discharge point should be ensured.
- The trail at the vehicular site entrance should be regularly cleaned.

5 Compliance with Environmental Permit

The status of the required submission under the EP during the reporting period is summarized in **Table 5.1**.

Table 5.1: Status of Submissions under the Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report for July 2016	12 August 2016

6 Report in Non-compliance, Complaints, Notification of Summons and Successful Prosecutions

6.1 Record on Non-compliance of Action and Limit Levels

There was no breach of Action or Limit Levels for Air Quality and Noise monitoring in the reporting month.

6.2 Record on Environmental Complaints Received

One environmental complaint was referred from EPD on 13 July 2016 in the last reporting month. The complaint was handled in accordance with the EM&A Manual and relevant parties including the Engineer's Representative and IEC were informed of the complaint.

The complainant claimed that muddy water was generated from the WKCDA construction sites and discharged to the harbour, and yellowish muddy water can be seen discharging to the Victoria Harbour via the drainage reserve outfall. The investigation results revealed that all wastewater treatment facilities were in place for treating all site runoff and wastewater generated from the construction activities during the concerned period. No muddy water was found during daily discharge water quality checking. Therefore, the muddy water discharged to the harbour was unlikely to be from works associated with M+ Museum and Lyric Theatre Complex. Nonetheless, the contractors were reminded to strictly implement mitigation measures to ensure the water discharge complies with the standards as stipulated in the discharge license.

The cumulative statistics on complaints were provided in **Appendix K**.

6.3 Record on Notifications of Summons and Successful Prosecution

No notifications of summons or successful prosecution were received this month. The cumulative statistics on notifications of summons and successful prosecutions were provided in **Appendix K**.

7 Future Key Issues

7.1 Construction Works for the Coming Month(s)

7.1.1 M+ Museum

The major site works scheduled to be commissioned in the coming month include:

- Excavation
- Construction of pile caps
- Construction of slab
- Construction of columns & walls

7.1.2 Lyric Theatre Complex

The major site works scheduled to be commissioned in the coming month include:

- H-Pile Construction
- Bored Pile Construction
- Excavation and lateral support

7.2 Key Issues for the Coming Month

7.2.1 M+ Museum

Key issues to be considered in the coming month include:

- Generation of dust from construction works;
- Noise impact from operating equipment and machinery on-site;
- Generation of site surface runoffs and wastewater from activities on-site;
- Management of stockpiles and slopes, particularly on rainy days;
- Sorting, recycling, storage and disposal of general refuse and construction waste; and
- Management of chemicals and avoidance of oil spillage on-site.

7.2.2 Lyric Theatre Complex

Key issues to be considered in the coming month include:

- Generation of dust from construction works;
- Noise impact from operating equipment and machinery on-site;
- Generation of site surface runoffs and wastewater from activities on-site;
- Management of stockpiles and slopes, particularly on rainy days;
- Sorting, recycling, storage and disposal of general refuse and construction waste; and
- Management of chemicals and avoidance of oil spillage on-site.

7.3 Monitoring Schedule for the Coming Month

The environmental site inspection and environmental monitoring will be continued in the coming month. Impact monitoring for air quality and noise in accordance with the approved EM&A Manual has commenced since 31 October 2015 and 5 March 2016 respectively. The tentative monitoring schedule for the coming month is shown in the **Appendix E**.

8 Conclusions and Recommendations

8.1 Conclusions

The EM&A programme as recommended in the EM&A Manual has been undertaken since the construction of M+ Museum main works commenced on 31 October 2015, and the construction of Lyric Theatre Complex foundation works commenced on 1 March 2016.

Monitoring of air quality and noise with respect to the Projects is underway. In particular, the 1-hour TSP, 24-hour TSP, noise level (as Leq, 30 minutes) under monitoring have been checked against established Action and Limit levels. There was no breach of Action and Limit Levels for 1-hour TSP, 24-hour TSP and noise in the reporting month.

No environmental complaint and no notifications of summons or successful prosecution were received during the reporting month.

Weekly construction phase site inspections and bi-weekly landscape and visual impact inspections were conducted during the reporting month as required. It was observed that the Contractors had implemented all possible and feasible mitigation measures to mitigate the potential environmental impacts during construction phase works.

8.2 Recommendations

Potential environmental impacts due to the construction activities, including air quality, noise, water quality, waste, landscape and visual, will be monitored or reviewed. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

Figure 1 Site Layout Plan and Monitoring Stations

Appendices

A.	Project Organisation	25
B.	Tentative Construction Programme	26
C.	Action and Limit Levels for Construction Phase	27
D.	Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact	28
E.	Monitoring Schedule	29
F.	Calibration Certifications	30
G.	Graphical Plots of the Monitoring Results	31
H.	Meteorological Data Extracted from Hong Kong Observatory	32
I.	Waste Flow table	33
J.	Environmental Mitigation Measures – Implementation Status	34
K.	Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions	35

A. Project Organisation

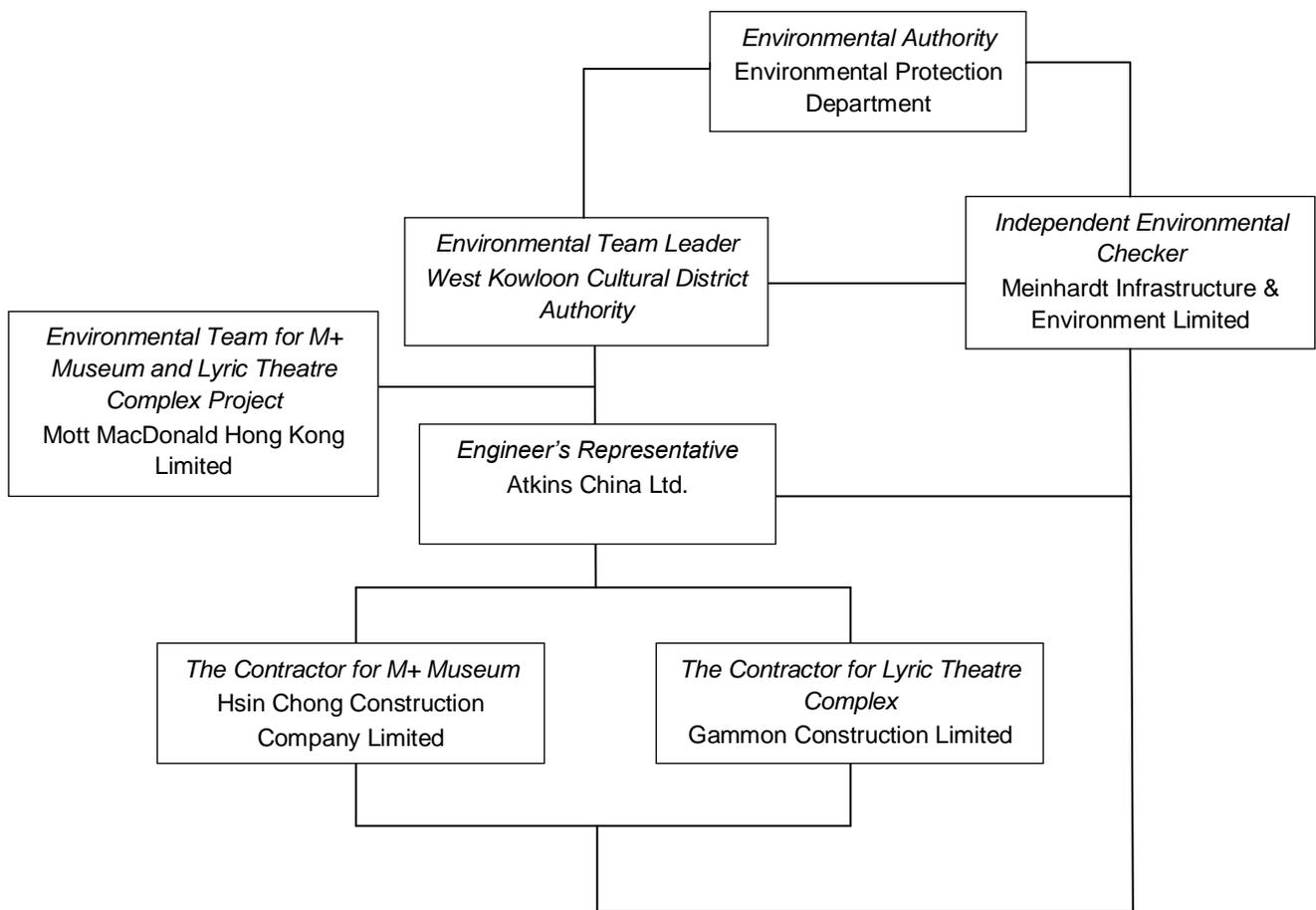


Table A-1: Contact information

Company Name	Role	Name	Telephone
Atkins China Ltd.	Senior Resident Engineer	Mr. Alfred Lee	5401 7289
Meinhardt Infrastructure & Environment Limited	IEC	Mr. Fredrick Leong	2859 1739
Hsin Chong Construction Company Limited	Environmental Manager	Mr. Leo Chow	9266 6855
Gammon Construction Limited	Environmental Manager	Ms. Michelle Tang	9267 8866
Mott MacDonald Hong Kong Ltd.	Contractor's Environmental Team Leader	Mr Brandon Wong	2828 5875
West kowloon Cultural District Authority	Senior Environmental Specialist	Mr. Brian Tam	2200 0059

B. Tentative Construction Programme

M+ Museum

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016					
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06			
3MRP Three Months Rolling Programme Update (31 July 2016)																															
Contract Key Dates & Milestones																															
Contract Dates																															
CP02	Contract Period (1218 days)	1216	26-Sep-15	23-Jan-19	26-Sep-15 A	25-Jan-19	25%	-2	0																						
Schedule of Milestones																															
Cost Centre A - Preliminaries and General Requirements																															
MSA.07	Compliance Review to the CA's satisfaction on Project Time & Construct	0		30-Sep-16		30-Sep-16	0%	0	6														Compliance Review to the CA's s								
Cost Centre B - M+																															
MSB.04	Complete Pile Caps for Trusses 1, 2 & 5 (t=M9)	0		31-Aug-16		31-Aug-16	0%	0	30														Complete Pile Caps for Trusses 1, 2 & 5 (t=M9), Comple								
MSB.05	Complete all Columns, Structural Cores and other work necessary for Tr	0		30-Sep-16		30-Sep-16	0%	0	29														Complete all Columns, Structural								
MSB.03	Complete Excavation to 100% of Overall Volume of Bulk Excavation Mat	0		30-Sep-16		30-Sep-16	0%	0	29														Complete Excavation to 100% of								
Cost Centre C - Public Works and Tunnel Protection Works																															
MSC.01	Obtain Notice of No Objection from Contract Administrator for all Truss S	0		31-Aug-16		31-Aug-16	0%	0	30														Obtain Notice of No Objection from Contract Administrato								
MSC.03	Complete Pile Caps for Trusses 1, 2 & 5 (t=M9)	0		31-Aug-16		31-Aug-16	0%	0	30														Complete Pile Caps for Trusses 1, 2 & 5 (t=M9), Comple								
MSC.02	First delivery of major Truss Steelwork elements to the Site for Trusses (0		30-Sep-16		30-Sep-16	0%	0	29														First delivery of major Truss Steel								
MSC.04i	Complete of all work necessary for commencement of erection of steelw	0		30-Sep-16		30-Sep-16	0%	0	29														Complete of all work necessary f								
MSC.04ii	Complete all Columns, Structural Cores and other work necessary for Tr	0		30-Sep-16		30-Sep-16	0%	0	29														Complete all Columns, Structural								
Interface Dates																															
Access Date																															
AD1420	M45 - At-grade Road Footpath along M+ Basement (from PIW) (01Jun2	0	11-Aug-16		11-Aug-16		0%	0	363														M45 - At-grade Road Footpath along M+ Basement (from PIW) (01Jun20								
AD1410	M44 - At-grade Road Footpath at ICP / SPS Frontage (from PIW) (01Jun	0	11-Aug-16		11-Aug-16		0%	0	406														M44 - At-grade Road Footpath at ICP / SPS Frontage (from PIW) (01Jun2								
AD1350	M39 - Lyric Waterfront / through ESS Compound (Subject to Gov't Appr	0	31-Aug-16		31-Aug-16		0%	0	542														M39 - Lyric Waterfront / through ESS Compound (Subjec								
AD1340	M38 - Lyric Waterfront (Part of MTR Area A1) (from Lyric) (31Aug2016)	0	31-Aug-16		31-Aug-16		0%	0	542														M38 - Lyric Waterfront (Part of MTR Area A1) (from Lyric								
AD1380	M42 - Lyric Waterfront East of Barging Point	0	01-Oct-16		01-Oct-16		0%	0	592														M42 - Lyric Waterfront East of B								
AD1370	M41 - Lyric Waterfront at Barging Point (Part of MTR Area 3) (Following I	0	01-Oct-16		01-Oct-16		0%	0	592														M41 - Lyric Waterfront at Bargin								
AD1110	M12 - Lyric Interface North (2nd access) (30Nov16)	0	16-Oct-16		16-Oct-16		0%	0	67														M12 - Lyric Interfac								
Interface Schedule (Refer to Interface Schedule - Appendix D1 20-Nov-2015)																															
Lyric Theatre Complex and Extended Basement (Lyric)																															
Along Interface North of AEL																															
IF1020	Complete excavation north of AEL for B2/F slab and vacate M12	0		25-Aug-16		25-Aug-16	0%	0	67														Complete excavation north of AEL for B2/F slab and vacate M								
IF1060	Take possession of M12 for external wall construction	0	22-Oct-16		22-Oct-16		0%	0	61														Take possessio								
Along Interface South of AEL																															
IF1050	Take possession of M38 and M39	0	31-Aug-16		31-Aug-16		0%	0	542														Take possession of M38 and M39, Take possession of M3								
DCS Basement Area																															
IF1030	Take possession of M15 and M16 after pipe piles and grouting by Lyric C	0	22-Aug-16		22-Aug-16*		0%	0	0														Take possession of M15 and M16 after pipe piles and grouting by								
Grid 6 & 12 Area																															
IF1036	Complete PC109 & Basement Road Wall between PC109 & 116 to G/F L	0		25-Aug-16		25-Aug-16	0%	0	883														Complete PC109 & Basement Road Wall between PC109 & 1								
IF1039	Complete Basement Road Wall between PC96, 103 & 105 to G/F Level	0		03-Oct-16		03-Oct-16	0%	0	844														Complete Basement Road Wa								
IF1034	Complete External Wall from B1/F to G/F Level between Grid 6 & 12 (M1	0		01-Nov-16		01-Nov-16	0%	0	815														Compl								
PIW Phase 1																															
Civil & Structural Interface with PIW At-Grade Road																															

- ◆ Baseline Milestone
- Primary Baseline
- ◆ Milestone
- Non-Critical
- Critical Bar
- Actual Work

West Kowloon Cultural District Authority

3MRP-10 Three Months Rolling Programme Status at 31 July 2016



CMWP-10			
Date	Revision	Che...	Approved
06-Apr-16	CMWP Monthly Update Status at 31 Mar 2016	Jojo	Ricky Lau / Chris Ch...
06-May-16	CMWP Monthly Update Status at 30 April 2016	Jojo	Ricky Lau / Chris Ch...
08-Jun-16	CMWP Monthly Update Status at 31 May 2016	Jojo	Ricky Lau / Chris Ch...
14-Jul-16	CMWP Monthly Update Status at 30 June 2016	Jojo	Ricky Lau / Chris Ch...
08-Aug-16	CMWP Monthly Update Status at 31 July 2016	Jojo	Ricky Lau / Chris Ch...

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016					August 2016					September 2016					October 2016					November 2016		
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06				
M+ North West Boundary																																
IF2090	Take possession of the At-grade road footway within M45	0	11-Aug-16		11-Aug-16		0%	0	644																							
IF2095	Submit Hoarding Design for BD Approval	30	11-Aug-16	09-Sep-16	11-Aug-16	09-Sep-16	0%	0	644																							
Interface Car Park Utilities Works																																
IF2190	Complete pavement interface with At-grade road	10	30-Aug-16	13-Sep-16	30-Aug-16	13-Sep-16	0%	0	85																							
IF2200	Remove hoarding along footway & vacate footway	5	15-Sep-16	22-Sep-16	15-Sep-16	22-Sep-16	0%	0	85																							
IF2180	Construct U/G utilities connections from footway to ICP/SPS	70	30-Jun-16	17-Oct-16	06-Jun-16 A	29-Aug-16	50%	30	85																							
Sewage Pump Station																																
IF2290	Construction of SPS incl. ELS, Structure, T&C	361	19-May-16	16-Oct-17	20-May-16 A	28-Sep-17	10%	11	-62																							
Drainage Interface with PIW																																
IF2310	PIW take possession of M26, M04 (by others)	0	18-Nov-16		18-Nov-16		0%	0	710																							
IF2320	Construct the DN150 storm drain within At-grade Road (M26)	72	18-Nov-16	16-Feb-17	18-Nov-16	16-Feb-17	0%	0	509																							
Water Main Interface with PIW																																
IF2370	Take possession of At-grade road within Portion M45	0	11-Aug-16		11-Aug-16		0%	0	858																							
IF2380	Remove hoarding fixed to the sheet pile	5	11-Aug-16	16-Aug-16	11-Aug-16	16-Aug-16	0%	0	619																							
IF2390	Install hoarding on road-side edge of footway (500mm clearance from c	12	18-Aug-16	03-Sep-16	18-Aug-16	03-Sep-16	0%	0	619																							
IF2400	Construct two DN150 DI fresh water, and one DN100 DI salt water pipe	12	05-Sep-16	22-Sep-16	05-Sep-16	22-Sep-16	0%	0	619																							
IF2410	Pressure test, Remove blank flange and make final connections (by WSI	1	23-Sep-16	23-Sep-16	23-Sep-16	23-Sep-16	0%	0	619																							
IF2420	Backfill pipes to the footway formation levels	1	24-Sep-16	24-Sep-16	24-Sep-16	24-Sep-16	0%	0	619																							
IF2430	Complete WSD works for At-grade road (8Jul17)	0		24-Sep-16		24-Sep-16	0%	0	853																							
Towngas Interface with PIW																																
IF2440	Take possession of At-grade road within Portion M44	0	11-Aug-16		11-Aug-16		0%	0	712																							
IF2450	Trench excavation for gas pipe installation	5	11-Aug-16	16-Aug-16	11-Aug-16	16-Aug-16	0%	0	514																							
IF2460	Construct portion of M+ & RDE building gas main (by Towngas)	130	18-Aug-16	09-Feb-17	18-Aug-16	09-Feb-17	0%	0	514																							
Power Interface with PIW																																
IF2230	Take possession of the completed At-grade road pavement in M44	0	11-Aug-16		11-Aug-16		0%	0	709																							
IF2240	Excavate trenches for laying 11kV & 132kV cable by CLP	73	11-Aug-16	22-Nov-16	11-Aug-16	22-Nov-16	0%	0	512																							
IF2250	Backfilling footway to adjust ground level	5	24-Nov-16	29-Nov-16	24-Nov-16	29-Nov-16	0%	0	511																							
Telecoms Interface with PIW																																
IF2500	Take possession of the completed At-grade road pavement in M44	0	11-Aug-16		11-Aug-16		0%	0	406																							
IF2510	Excavate trenches for laying telecom ducts	5	11-Aug-16	16-Aug-16	11-Aug-16	16-Aug-16	0%	0	291																							
IF2520	Lay ducts & leave connecting ends for PIW drawpit consstruction (agree	72	18-Aug-16	26-Nov-16	18-Aug-16	26-Nov-16	0%	0	291																							
IF2530	Backfilling footway to adjust ground level	5	28-Nov-16	02-Dec-16	28-Nov-16	02-Dec-16	0%	0	508																							
Sewerage Interface with PIW																																
IF4010	Construct the DN375 sewer drain within Austin Road West and its footw	50	29-Feb-16	03-May-16	05-Dec-15 A	29-Aug-16	90%	-77	636																							
IF4020	Vacate L08, L19 to Lyric foundation contractor	0		29-Aug-16		29-Aug-16	0%	0	879																							
Seawater Intake & Discharge Pipes Interface with PIW																																
IF4100	Take Possession of M15,M16, M38 & M39	0	02-Sep-16		02-Sep-16		0%	0	395																							
IF4110	Install two DN600 Seawater Intake mains, DN100 Chorinationand three	120	02-Sep-16	09-Feb-17	02-Sep-16	09-Feb-17	0%	0	395																							
Summary Facade Programme																																
Major Key Milestone Dates																																
SMS.1010	Start of Embeds Installation at M+ Podium	0	08-Oct-16		08-Oct-16		0%	0	840																							
Pre-Construction, Procurements & Bulk Production																																
SUM.0020	Facade - Shop Drawings	145	31-Mar-16	23-Sep-16	05-Mar-16 A	04-Nov-16	30%	-34	131																							
SUM.0025	Facade Door - Shop Drawings	98	08-Aug-16	03-Dec-16	08-Aug-16	03-Dec-16	0%	0	25																							
SUM.0050	Facade - Material Submission	205	31-Mar-16	05-Dec-16	22-Oct-15 A	29-Aug-16	70%	81	66																							

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016						
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06				
Facade Door Package # 11: CSF Bldg (Total = 2 nos)																																
DS.2004.766	Facade Door Package # 11 - 1st Submission	12	01-Sep-16	15-Sep-16	01-Sep-16*	15-Sep-16	0%	0	39	DS.2004.766, Facade Door Package # 11 - 1st Submission																						
DS.2004.776	Facade Door Package # 11 - Comment on 1st Submission	12	17-Sep-16	30-Sep-16	17-Sep-16	30-Sep-16	0%	0	39	DS.2004.776, Facade Door Package # 11 - Comment on 1st Submission																						
DS.2004.786	Facade Door Package # 11 - 2nd Submission	11	03-Oct-16	15-Oct-16	03-Oct-16	15-Oct-16	0%	0	39	DS.2004.786, Facade Door Package # 11 - 2nd Submission																						
DS.2004.796	Facade Door Package # 11 - Comment on 2nd Submission	10	17-Oct-16	27-Oct-16	17-Oct-16	27-Oct-16	0%	0	39	DS.2004.796, Facade Door Package # 11 - Comment on 2nd Submission																						
DS.2004.806	Facade Door Package # 11 - 3rd Submission	6	28-Oct-16	03-Nov-16	28-Oct-16	03-Nov-16	0%	0	39	DS.2004.806, Facade Door Package # 11 - 3rd Submission																						
DS.2004.816	Facade Door Package # 11 - Approval	12	04-Nov-16	17-Nov-16	04-Nov-16	17-Nov-16	0%	0	39	DS.2004.816, Facade Door Package # 11 - Approval																						
Facade Door Package # 12: B1/F Smoke Vent Panel (Total = 1 no)																																
DS.2004.826	Facade Door Package # 12 - 1st Submission	12	01-Sep-16	15-Sep-16	01-Sep-16*	15-Sep-16	0%	0	37	DS.2004.826, Facade Door Package # 12 - 1st Submission																						
DS.2004.836	Facade Door Package # 12 - Comment on 1st Submission	11	17-Sep-16	29-Sep-16	17-Sep-16	29-Sep-16	0%	0	37	DS.2004.836, Facade Door Package # 12 - Comment on 1st Submission																						
DS.2004.846	Facade Door Package # 12 - 2nd Submission	12	30-Sep-16	15-Oct-16	30-Sep-16	15-Oct-16	0%	0	37	DS.2004.846, Facade Door Package # 12 - 2nd Submission																						
DS.2004.856	Facade Door Package # 12 - Comment on 2nd Submission	12	17-Oct-16	29-Oct-16	17-Oct-16	29-Oct-16	0%	0	37	DS.2004.856, Facade Door Package # 12 - Comment on 2nd Submission																						
DS.2004.866	Facade Door Package # 12 - 3rd Submission	6	31-Oct-16	05-Nov-16	31-Oct-16	05-Nov-16	0%	0	37	DS.2004.866, Facade Door Package # 12 - 3rd Submission																						
DS.2004.876	Facade Door Package # 12 - Approval	12	07-Nov-16	19-Nov-16	07-Nov-16	19-Nov-16	0%	0	37	DS.2004.876, Facade Door Package # 12 - Approval																						
Embed BD Submission																																
M+ Podium																																
M+ Podium (B1/F) - Embed Submission																																
DS.2005.12	Preparation of BD Consent Application	5	14-Sep-16	20-Sep-16	14-Sep-16	20-Sep-16	0%	0	3	DS.2005.12, Preparation of BD Consent Application																						
DS.2005.10	BD Submission & Approval	60	11-Aug-16	09-Oct-16	16-Jul-16 A	13-Sep-16	30%	26	5	DS.2005.10, BD Submission & Approval																						
DS.2005.14	BD Consent Application	30	21-Sep-16	20-Oct-16	21-Sep-16	20-Oct-16	0%	0	3	DS.2005.14, BD Consent Application																						
M+ Podium (G/F to 3/F) - Embed Submission																																
DS.2005.22	RSC Submitted to BD	3	01-Aug-16	03-Aug-16	01-Aug-16	03-Aug-16	0%	0	24	DS.2005.22, RSC Submitted to BD																						
DS.2005.24	BD Submission & Approval	60	04-Aug-16	02-Oct-16	04-Aug-16	02-Oct-16	0%	0	28	DS.2005.24, BD Submission & Approval																						
DS.2005.26	Preparation of BD Consent Application	6	03-Oct-16	08-Oct-16	03-Oct-16	08-Oct-16	0%	0	23	DS.2005.26, Preparation of BD Consent Application																						
DS.2005.28	BD Consent Application	30	09-Oct-16	07-Nov-16	09-Oct-16	07-Nov-16	0%	0	29	DS.2005.28, BD Consent Application																						
M+ Tower																																
M+ Tower (4/F to RF/F) - Embed Submission																																
DS.2006.02	1st embed BD submission to Consultants	11	01-Aug-16	12-Aug-16	01-Aug-16	12-Aug-16	0%	0	63	DS.2006.02, 1st embed BD submission to Consultants																						
DS.2006.04	1st embed BD submission Comments	11	13-Aug-16	25-Aug-16	13-Aug-16	25-Aug-16	0%	0	63	DS.2006.04, 1st embed BD submission Comments																						
DS.2006.06	2nd embed BD submission to Consultants	6	26-Aug-16	01-Sep-16	26-Aug-16	01-Sep-16	0%	0	63	DS.2006.06, 2nd embed BD submission to Consultants																						
DS.2006.08	RSC Submitted to BD	3	02-Sep-16	06-Sep-16	02-Sep-16	06-Sep-16	0%	0	63	DS.2006.08, RSC Submitted to BD																						
DS.2006.10	BD Submission & Approval	60	06-Sep-16	05-Nov-16	06-Sep-16	05-Nov-16	0%	0	77	DS.2006.10, BD Submission & Approval																						
DS.2006.12	Preparation of BD Consent Application	6	05-Nov-16	11-Nov-16	05-Nov-16	11-Nov-16	0%	0	63	DS.2006.12, Preparation of BD Consent Application																						
DS.2006.14	BD Consent Application	30	12-Nov-16	11-Dec-16	12-Nov-16	11-Dec-16	0%	0	79	DS.2006.14, BD Consent Application																						
BD Submission, Consent & Approval																																
Tower Precast Unitized Facade																																
DS.2016.12	1st BD Submission to Consultant	10	15-Jul-16	27-Jul-16	05-Jun-16 A	12-Aug-16	60%	-14	58	DS.2016.12, 1st BD Submission to Consultant, 1st BD Submission to Consultant																						
DS.2016.14	Comment on 1st Submission	11	13-Aug-16	25-Aug-16	13-Aug-16	25-Aug-16	0%	0	58	DS.2016.14, Comment on 1st Submission																						
DS.2016.16	2nd Submission	10	26-Aug-16	06-Sep-16	26-Aug-16	06-Sep-16	0%	0	58	DS.2016.16, 2nd Submission																						
DS.2016.18	Comment on 2nd Submission	11	07-Sep-16	21-Sep-16	07-Sep-16	21-Sep-16	0%	0	58	DS.2016.18, Comment on 2nd Submission																						
DS.2016.20	3rd Submission	10	21-Sep-16	03-Oct-16	21-Sep-16	03-Oct-16	0%	0	58	DS.2016.20, 3rd Submission																						
DS.2016.22	Comment on 3rd Submission	12	04-Oct-16	18-Oct-16	04-Oct-16	18-Oct-16	0%	0	58	DS.2016.22, Comment on 3rd Submission																						
DS.2016.24	RSE Submitted to BD	4	19-Oct-16	22-Oct-16	19-Oct-16	22-Oct-16	0%	0	58	DS.2016.24, RSE Submitted to BD																						
DS.2016.26	BD Submission & Approval	60	23-Oct-16	21-Dec-16	23-Oct-16	21-Dec-16	0%	0	70	DS.2016.26, BD Submission & Approval																						
Podium Precast Unitized Facade																																
DS.2016.32	1st BD Submission to Consultant	9	08-Aug-16	17-Aug-16	08-Aug-16*	17-Aug-16	0%	0	115	DS.2016.32, 1st BD Submission to Consultant																						

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016		
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06
DS.2016.34	Comment on 1st Submission	12	18-Aug-16	31-Aug-16	18-Aug-16	31-Aug-16	0%	0	115									DS.2016.34, Comment on 1st Submission										
DS.2016.36	2nd Submission	9	01-Sep-16	10-Sep-16	01-Sep-16	10-Sep-16	0%	0	115									DS.2016.36, 2nd Submission										
DS.2016.38	Comment on 2nd Submission	11	12-Sep-16	24-Sep-16	12-Sep-16	24-Sep-16	0%	0	115									DS.2016.38, Comment on 2nd Subm										
DS.2016.40	3rd Submission	11	26-Sep-16	08-Oct-16	26-Sep-16	08-Oct-16	0%	0	115									DS.2016.40, 3rd Submiss										
DS.2016.42	Comment on 3rd Submission	11	11-Oct-16	22-Oct-16	11-Oct-16	22-Oct-16	0%	0	115									DS.2016.42, C										
DS.2016.44	RSE Submitted to BD	3	24-Oct-16	27-Oct-16	24-Oct-16	27-Oct-16	0%	0	115									DS.2016.44										
DS.2016.46	BD Submission & Approval	60	27-Oct-16	26-Dec-16	27-Oct-16	26-Dec-16	0%	0	141									DS.2016.46										
Glass Wall with T Mullion (Kinked & Straight B1/F & G/F),CW-01a-03d																												
DS.2016.52	1st BD Submission to Consultant	10	14-Sep-16	26-Sep-16	14-Sep-16	26-Sep-16	0%	0	119									DS.2016.52, 1st BD Submission to										
DS.2016.54	Comment on 1st Submission	11	27-Sep-16	12-Oct-16	27-Sep-16	12-Oct-16	0%	0	119									DS.2016.54, Comment										
DS.2016.56	2nd Submission	10	12-Oct-16	24-Oct-16	12-Oct-16	24-Oct-16	0%	0	119									DS.2016.56,										
DS.2016.58	Comment on 2nd Submission	12	24-Oct-16	07-Nov-16	24-Oct-16	07-Nov-16	0%	0	119									DS										
DS.2016.60	3rd Submission	10	07-Nov-16	18-Nov-16	07-Nov-16	18-Nov-16	0%	0	119									DS										
DS.2016.62	Comment on 3rd Submission	10	18-Nov-16	30-Nov-16	18-Nov-16	30-Nov-16	0%	0	119									DS										
Glass Wall with Precast Mullion & Ceramic Mullion,CW-04 to 05d and 07																												
DS.2016.72	1st BD Submission to Consultant	10	20-Sep-16	30-Sep-16	20-Sep-16*	30-Sep-16	0%	0	87									DS.2016.72, 1st BD Submission										
DS.2016.74	Comment on 1st Submission	11	03-Oct-16	17-Oct-16	03-Oct-16	17-Oct-16	0%	0	87									DS.2016.74, Comr										
DS.2016.76	2nd Submission	11	18-Oct-16	29-Oct-16	18-Oct-16	29-Oct-16	0%	0	87									DS.2016										
DS.2016.78	Comment on 2nd Submission	12	31-Oct-16	12-Nov-16	31-Oct-16	12-Nov-16	0%	0	87									DS										
DS.2016.80	3rd Submission	9	14-Nov-16	23-Nov-16	14-Nov-16	23-Nov-16	0%	0	87									DS										
DS.2016.82	Comment on 3rd Submission	11	24-Nov-16	06-Dec-16	24-Nov-16	06-Dec-16	0%	0	87									DS										
Podium Ceramic Concrete Tubes & with Perforated Cladding,CE01a,01b,02a																												
DS.2016.092	1st BD Submission to Consultant	9	27-Sep-16	08-Oct-16	27-Sep-16*	08-Oct-16	0%	0	104									DS.2016.092, 1st BD Sub										
DS.2016.094	Comment on 1st Submission	12	11-Oct-16	24-Oct-16	11-Oct-16	24-Oct-16	0%	0	104									DS.2016.094										
DS.2016.096	2nd Submission	10	25-Oct-16	04-Nov-16	25-Oct-16	04-Nov-16	0%	0	104									DS.2										
DS.2016.098	Comment on 2nd Submission	12	05-Nov-16	18-Nov-16	05-Nov-16	18-Nov-16	0%	0	104									DS										
DS.2016.100	3rd Submission	10	19-Nov-16	30-Nov-16	19-Nov-16	30-Nov-16	0%	0	104									DS										
Garden Gallery Ceramic Cladding & Ceiling,CE-3a,3b,3c																												
DS.2016.112	1st BD Submission to Consultant	9	27-Sep-16	07-Oct-16	27-Sep-16*	07-Oct-16	0%	0	180									DS.2016.112, 1st BD Subr										
DS.2016.114	Comment on 1st Submission	11	08-Oct-16	21-Oct-16	08-Oct-16	21-Oct-16	0%	0	180									DS.2016.114, C										
DS.2016.116	2nd Submission	11	22-Oct-16	03-Nov-16	22-Oct-16	03-Nov-16	0%	0	180									DS.2										
DS.2016.118	Comment on 2nd Submission	11	04-Nov-16	16-Nov-16	04-Nov-16	16-Nov-16	0%	0	180									DS										
DS.2016.120	3rd Submission	10	17-Nov-16	28-Nov-16	17-Nov-16	28-Nov-16	0%	0	180									DS										
DS.2016.122	Comment on 3rd Submission	12	29-Nov-16	12-Dec-16	29-Nov-16	12-Dec-16	0%	0	180									DS										
L3 Storefront,CW-08a,08b																												
DS.2016.132	1st BD Submission to Consultant	10	04-Aug-16	15-Aug-16	04-Aug-16	15-Aug-16	0%	0	300					DS.2016.132, 1st BD Submission to Consultant														
DS.2016.134	Comment on 1st Submission	12	15-Aug-16	29-Aug-16	15-Aug-16	29-Aug-16	0%	0	300					DS.2016.134, Comment on 1st Submission														
DS.2016.136	2nd Submission	10	29-Aug-16	09-Sep-16	29-Aug-16	09-Sep-16	0%	0	300					DS.2016.136, 2nd Submission														
DS.2016.138	Comment on 2nd Submission	11	09-Sep-16	23-Sep-16	09-Sep-16	23-Sep-16	0%	0	300					DS.2016.138, Comment on 2nd Subm														
DS.2016.140	3rd Submission	10	23-Sep-16	06-Oct-16	23-Sep-16	06-Oct-16	0%	0	300					DS.2016.140, 3rd Submissi														
DS.2016.142	Comment on 3rd Submission	12	06-Oct-16	21-Oct-16	06-Oct-16	21-Oct-16	0%	0	300					DS.2016.142, C														
DS.2016.144	RSE Submitted to BD	3	21-Oct-16	25-Oct-16	21-Oct-16	25-Oct-16	0%	0	300					DS.2016.144														
DS.2016.146	BD Submission & Approval	60	25-Oct-16	24-Dec-16	25-Oct-16	24-Dec-16	0%	0	370					DS.2016.146														
Strip Glazing at Skylight Gallery L3 & Plaza Skylight,CW-10,SK-01,02																												
DS.2016.152	1st BD Submission to Consultant	10	10-Sep-16	23-Sep-16	10-Sep-16*	23-Sep-16	0%	0	229					DS.2016.152, 1st BD Submission to C														
DS.2016.154	Comment on 1st Submission	12	23-Sep-16	07-Oct-16	23-Sep-16	07-Oct-16	0%	0	229					DS.2016.154, Comment o														

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016	
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30
Shopdrawing Submission																											
DS.2021.116	Approval of Visual Mock Up Drawing	13	15-Jun-16	30-Jun-16	27-May-16 A	15-Aug-16	5%	-37	12	DS.2021.116, Approval of Visual Mock Up Drawing, Approval of Visual Mock Up Drawing																	
Ordering & Production of Hybrid Mock Up Mateial																											
DS.2021.118	Production of Steel Frame and Alum Cladding	30	16-May-16	20-Jun-16	02-Mar-16 A	03-Aug-16	90%	-36	25	DS.2021.118, Production of Steel Frame and Alum Cladding, Production of Steel Frame and Alum Cladding																	
Installation of Mock Up Sample																											
DS.2021.124	Installation of Steel Frame and Flashing	10	15-Aug-16	26-Aug-16	15-Aug-16	26-Aug-16	0%	0	12	DS.2021.124, Installation of Steel Frame and Flashing																	
DS.2021.126	Glazing	2	26-Aug-16	29-Aug-16	26-Aug-16	29-Aug-16	0%	0	12	DS.2021.126, Glazing																	
DS.2021.128	Application of Structural Sealant	2	29-Aug-16	30-Aug-16	29-Aug-16	30-Aug-16	0%	0	12	DS.2021.128, Application of Structural Sealant																	
DS.2021.98	Inspection & Approval of Visual Mock Up	10	02-Sep-16	13-Sep-16	02-Sep-16	13-Sep-16	0%	0	12	DS.2021.98, Inspection & Approval of Visual Mock Up																	
L3 Storefront,CW-08																											
Shopdrawing Submission																											
DS.2021.146	Approval of Visual Mock Up Drawing	13	15-Jun-16	30-Jun-16	11-May-16 A	04-Aug-16	50%	-28	140	DS.2021.146, Approval of Visual Mock Up Drawing, Approval of Visual Mock Up Drawing																	
Ordering & Production of Hybrid Mock Up Mateial																											
DS.2021.152	Production of Steel Frame and Alum Cladding	36	05-Apr-16	19-May-16	04-Mar-16 A	16-Aug-16	70%	-74	125	DS.2021.152, Production of Steel Frame and Alum Cladding, Production of Steel Frame and Alum Cladding																	
Installation of Mock Up Sample																											
DS.2021.158	Installation of Steel Frame and Flashing	6	17-Aug-16	23-Aug-16	17-Aug-16	23-Aug-16	0%	0	125	DS.2021.158, Installation of Steel Frame and Flashing																	
DS.2021.160	Install Glazing	2	23-Aug-16	25-Aug-16	23-Aug-16	25-Aug-16	0%	0	125	DS.2021.160, Install Glazing																	
DS.2021.162	Application of Structural Sealant	2	25-Aug-16	26-Aug-16	25-Aug-16	26-Aug-16	0%	0	125	DS.2021.162, Application of Structural Sealant																	
DS.2021.163	Inspection & Approval of Visual Mock Up	11	29-Aug-16	10-Sep-16	29-Aug-16	10-Sep-16	0%	0	125	DS.2021.163, Inspection & Approval of Visual Mock Up																	
Garden Galley Visual Mock Up,ce-03a,03c																											
Visual Mock Up Drawing Submission																											
DS.2021.172	Approval on Shop Drawings	10	01-Aug-16	11-Aug-16	01-Aug-16*	11-Aug-16	0%	0	110	DS.2021.172, Approval on Shop Drawings																	
DS.2021.174	Approval of Sample of Terracotta	4	09-Aug-16	12-Aug-16	09-Aug-16	12-Aug-16	0%	0	110	DS.2021.174, Approval of Sample of Terracotta																	
Terracotta																											
DS.2021.176	Production of Terracotta	24	16-Aug-16	12-Sep-16	16-Aug-16	12-Sep-16	0%	0	110	DS.2021.176, Production of Terracotta																	
DS.2021.178	Delivery of Terracotta to Precast Factory	1	24-Sep-16	24-Sep-16	24-Sep-16	24-Sep-16	0%	0	110	DS.2021.178, Delivery of Terracotta																	
Installation																											
DS.2021.187	Delivery of ceramic precast mullion to site	2	26-Sep-16	27-Sep-16	26-Sep-16	27-Sep-16	0%	0	110	DS.2021.187, Delivery of ceramic precast mullion to site																	
DS.2021.188	Installation of Terracotta on Mock-up	6	29-Sep-16	06-Oct-16	29-Sep-16	06-Oct-16	0%	0	110	DS.2021.188, Installation of Terracotta on Mock-up																	
Production Mock Up																											
Tower Precast Facade Panels w/ Percast Concrete , Terracotta, lighting & Curtain Wall																											
Tower Facade - Ordering & Production of Material																											
DS.2022.4	Sealant Ordering (Typical two weeks time, tailor made need three mont	12	27-Oct-16	09-Nov-16	27-Oct-16*	09-Nov-16	0%	0	128	DS.2022.4, Sealant Ordering (Typical two weeks time, tailor made need three mont																	
Tower Facade - Glass Production & Fabrication																											
DS.2022.6	Coated Glass Production	48	27-Oct-16	22-Dec-16	27-Oct-16*	22-Dec-16	0%	0	68	DS.2022.6, Coated Glass Production																	
Tower Facade - Curtain Wall glazed panel production and Fabricatioin																											
DS.2022.12	Die Making	21	27-Oct-16	19-Nov-16	27-Oct-16*	19-Nov-16	0%	0	84	DS.2022.12, Die Making																	
DS.2022.16	Aluminium Extrusion Production	12	23-Nov-16	06-Dec-16	23-Nov-16	06-Dec-16	0%	0	84	DS.2022.16, Aluminium Extrusion Production																	
DS.2022.14	PVF2 Paint Ordering	12	23-Nov-16	06-Dec-16	23-Nov-16	06-Dec-16	0%	0	84	DS.2022.14, PVF2 Paint Ordering																	
Tower Facade - Terracotta																											
DS.2022.22	Ordering of Terracotta	10	27-Oct-16	08-Nov-16	27-Oct-16	08-Nov-16	0%	0	94	DS.2022.22, Ordering of Terracotta																	
DS.2022.24	Die Making of Terracotta	45	08-Nov-16	03-Jan-17	08-Nov-16	03-Jan-17	0%	0	94	DS.2022.24, Die Making of Terracotta																	
DS.2022.26	Production & delivery of Terracotta Mockup Sample	45	22-Nov-16	17-Jan-17	22-Nov-16	17-Jan-17	0%	0	94	DS.2022.26, Production & delivery of Terracotta Mockup Sample																	
Tower Facade - Precast Concrete Facade																											
Tower Facade - Precast Facade Die Making																											
DS.2022.28	Tower Facade Precast Concrete Mould Making	45	27-Oct-16	17-Dec-16	27-Oct-16	17-Dec-16	0%	0	72	DS.2022.28, Tower Facade Precast Concrete Mould Making																	

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016		
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06
DS.2260.18	1st Shop Drawing Submission	11	24-Aug-16	05-Sep-16	24-Aug-16	05-Sep-16	0%	0	5									█	DS.2260.18, 1st Shop Drawing Submission									
DS.2260.20	1st Shop Drawing Comment	11	06-Sep-16	19-Sep-16	06-Sep-16	19-Sep-16	0%	0	125									█	DS.2260.20, 1st Shop Drawing Comment									
DS.2260.21	2nd Shop Drawing Submission	6	20-Sep-16	26-Sep-16	20-Sep-16	26-Sep-16	0%	0	125									█	DS.2260.21, 2nd Shop Drawing Submission									
DS.2260.22	Shop Drawing Approval	11	27-Sep-16	12-Oct-16	27-Sep-16	12-Oct-16	0%	0	125									█	DS.2260.22, Shop Drawing Approval									
CSF Embed BD Submission & Approval																												
DS.2260.24	BD Drawing Preparation & 1st BD Submission to Consultants	11	01-Aug-16	13-Aug-16	01-Aug-16*	13-Aug-16	0%	0	59					█	DS.2260.24, BD Drawing Preparation & 1st BD Submission to Consultants													
DS.2260.26	BD Drawing submission 1st Comments	11	13-Aug-16	26-Aug-16	13-Aug-16	26-Aug-16	0%	0	59					█	DS.2260.26, BD Drawing submission 1st Comments													
DS.2260.28	BD Drawing Preparation & 2nd BD Submission to Consultants	11	26-Aug-16	08-Sep-16	26-Aug-16	08-Sep-16	0%	0	59					█	DS.2260.28, BD Drawing Preparation & 2nd BD Submission to Consultants													
DS.2260.30	RSE Submission to BD	3	08-Sep-16	12-Sep-16	08-Sep-16	12-Sep-16	0%	0	59					█	DS.2260.30, RSE Submission to BD													
DS.2260.32	BD Submission & Approval	48	12-Sep-16	10-Nov-16	12-Sep-16	10-Nov-16	0%	0	59					█	DS.2260.32, BD Submission & Approval													
DS.2260.34	Preparation of BD Consent Application	6	10-Nov-16	17-Nov-16	10-Nov-16	17-Nov-16	0%	0	59					█	DS.2260.34, Preparation of BD Consent Application													
DS.2260.36	BD Consent Application & Approval	24	17-Nov-16	15-Dec-16	17-Nov-16	15-Dec-16	0%	0	59					█	DS.2260.36, BD Consent Application & Approval													
CSF Glass Wall BD Submission & Approval																												
DS.2260.38	BD Drawing Preparation & 1st BD Submission to Consultants	11	06-Sep-16	20-Sep-16	06-Sep-16	20-Sep-16	0%	0	5									█	DS.2260.38, BD Drawing Preparation & 1st BD Submission to Consultants									
DS.2260.40	BD Drawing submission 1st Comments	11	20-Sep-16	04-Oct-16	20-Sep-16	04-Oct-16	0%	0	5									█	DS.2260.40, BD Drawing submission 1st Comments									
DS.2260.42	BD Drawing Preparation & 2nd BD Submission to Consultants	11	04-Oct-16	18-Oct-16	04-Oct-16	18-Oct-16	0%	0	5									█	DS.2260.42, BD Drawing Preparation & 2nd BD Submission to Consultants									
DS.2260.44	BD Drawing submission 2nd Comments	11	18-Oct-16	31-Oct-16	18-Oct-16	31-Oct-16	0%	0	5									█	DS.2260.44, BD Drawing submission 2nd Comments									
DS.2260.46	BD Drawing Preparation & 3rd BD Submission to Consultants	11	31-Oct-16	12-Nov-16	31-Oct-16	12-Nov-16	0%	0	5									█	DS.2260.46, BD Drawing Preparation & 3rd BD Submission to Consultants									
DS.2260.48	RSE Submission to BD	3	14-Nov-16	17-Nov-16	14-Nov-16	17-Nov-16	0%	0	5									█	DS.2260.48, RSE Submission to BD									
DS.2260.50	BD Submission & Approval	48	17-Nov-16	16-Jan-17	17-Nov-16	16-Jan-17	0%	0	5									█	DS.2260.50, BD Submission & Approval									
CSF Glass Wall Performance Testing																												
Drawing Submission																												
DS.2260.58	1st Shop Drawing Submission	11	31-Oct-16	12-Nov-16	31-Oct-16	12-Nov-16	0%	0	111									█	DS.2260.58, 1st Shop Drawing Submission									
DS.2260.60	1st Shop Drawing Comment	11	14-Nov-16	26-Nov-16	14-Nov-16	26-Nov-16	0%	0	111									█	DS.2260.60, 1st Shop Drawing Comment									
DS.2260.62	2nd Shop Drawing Submission	11	26-Nov-16	09-Dec-16	26-Nov-16	09-Dec-16	0%	0	111									█	DS.2260.62, 2nd Shop Drawing Submission									
Ordering & Production of Material																												
Glass Production & Fabrication																												
DS.2260.66	Coated Glass Production	48	12-Oct-16	07-Dec-16	12-Oct-16*	07-Dec-16	0%	0	125									█	DS.2260.66, Coated Glass Production									
Curtain Wall glazed panel production and Fabrication																												
DS.2260.70	Die Making	48	06-Sep-16	03-Nov-16	06-Sep-16*	03-Nov-16	0%	0	147									█	DS.2260.70, Die Making									
DS.2260.72	PVF2 Paint Ordering	49	06-Sep-16	04-Nov-16	06-Sep-16*	04-Nov-16	0%	0	163									█	DS.2260.72, PVF2 Paint Ordering									
DS.2260.74	Aluminium Extrusion Production	17	04-Nov-16	23-Nov-16	04-Nov-16	23-Nov-16	0%	0	147									█	DS.2260.74, Aluminium Extrusion Production									
DS.2260.76	Application of PVF2 Coating	6	23-Nov-16	30-Nov-16	23-Nov-16	30-Nov-16	0%	0	147									█	DS.2260.76, Application of PVF2 Coating									
Bulk Ordering & Production of Material																												
Curtain Wall glazed panel production and Fabrication																												
DS.2260.92	Die Making	48	01-Nov-16	28-Dec-16	01-Nov-16*	28-Dec-16	0%	0	145									█	DS.2260.92, Die Making									
DS.2260.94	PVF2 Paint Ordering	49	01-Nov-16	29-Dec-16	01-Nov-16	29-Dec-16	0%	0	161									█	DS.2260.94, PVF2 Paint Ordering									
Glass Production & Fabrication																												
DS.2260.102	Coated Glass Production	48	14-Nov-16	11-Jan-17	14-Nov-16*	11-Jan-17	0%	0	140									█	DS.2260.102, Coated Glass Production									
(Redland) Precast Facade for M+ Podium & CSF Bldg																												
(Redland) General Submission																												
(Redland) Project Quality Plan																												
DS.3240	PQP - 2nd Submission and Approval	12	01-Aug-16	13-Aug-16	01-Aug-16	13-Aug-16	0%	0	75					█	DS.3240, PQP - 2nd Submission and Approval													
DS.3250	PQP - Approval of Project Quality Plan	0		13-Aug-16		13-Aug-16	0%	0	75									█	PQP - Approval of Project Quality Plan, PQP - Approval of Project Quality Plan									
(Redland) Production Method Statement																												
DS.3290	PMS - 2nd Submission and Approval	12	01-Aug-16	13-Aug-16	01-Aug-16	13-Aug-16	0%	0	75					█	DS.3290, PMS - 2nd Submission and Approval													

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016			November 2016				
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	
DS.1055	Steel Truss Support Fabrication for Truss # 1 & 2 (Column 68 & Column	21	04-Jun-16	24-Jun-16	09-May-16 A	29-Aug-16	75%	-66	25											DS.1055, Steel Truss Support Fabrication for Truss # 1 &									
DS.1110	Steel Truss Support Fabrication for Truss 5 (*C25)	21	31-Jul-16	20-Aug-16	25-Jun-16 A	29-Aug-16	16%	-9	67											DS.1110, Steel Truss Support Fabrication for Truss 5 (*C2									
DS.1056	Steel Truss Support Fabrication for Truss 3 (*C85 & C86)	21	10-Aug-16	30-Aug-16	10-Aug-16	30-Aug-16	0%	0	46											DS.1056, Steel Truss Support Fabrication for Truss 3 (*C									
DS.1090	Steel Truss Support Fabrication for Truss 4 (*C94 & *C96)	21	31-Aug-16	20-Sep-16	31-Aug-16	20-Sep-16	0%	0	56											DS.1090, Steel Truss Support Fabrication									
Steel Truss Support Delivery to Site																													
DS.1055.10	Steel Truss Support for Truss # 1 & 2(Column 68 & Column 71)	0	01-Sep-16		01-Sep-16		0%	0	23											Steel Truss Support for Truss # 1 & 2(Column 68 & Colu									
DS.1050.10	Steel Truss Support @ East Core Wall for Trusses # 1, 2 & 5	0	02-Sep-16		02-Sep-16		0%	0	11											Steel Truss Support @ East Core Wall for Trusses # 1, 2									
DS.1130.10	Steel Truss Support for Truss # 5 (*C25)	0	10-Sep-16		10-Sep-16		0%	0	67											Steel Truss Support for Truss # 5 (*C25), Steel T									
DS.1090.10	Steel Truss Support for Truss # 3 (*C85 & C86)	0	01-Oct-16		01-Oct-16		0%	0	46											Steel Truss Support for Truss #									
DS.1110.10	Steel Truss Support for Truss # 4 (*C94 & *C96)	0	01-Oct-16		01-Oct-16		0%	0	46											Steel Truss Support for Truss #									
Steel Truss Members Fabrication																													
DS.1060.1	Steel Truss Fabrication for Truss # 1	69	30-Apr-16	07-Jul-16	23-Apr-16 A	20-Aug-16	65%	-44	13											DS.1060.1, Steel Truss Fabrication for Truss # 1, Steel Truss Fab									
DS.1120	Steel Truss Fabrication for Truss # 5	69	30-Apr-16	07-Jul-16	23-Apr-16 A	17-Sep-16	17%	-72	20											DS.1120, Steel Truss Fabrication for Truss									
DS.1070	Steel Truss Fabrication for Truss # 2	69	01-May-16	08-Jul-16	23-Apr-16 A	31-Aug-16	59%	-54	20											DS.1070, Steel Truss Fabrication for Truss # 2, Steel Tru									
DS.1080	Steel Truss Fabrication for Truss # 3	69	05-May-16	12-Jul-16	23-Apr-16 A	01-Oct-16	1%	-81	20											DS.1080, Steel Truss Fabricatio									
DS.1100	Steel Truss Fabrication for Truss # 4	69	13-May-16	20-Jul-16	09-May-16 A	01-Oct-16	1%	-73	25											DS.1100, Steel Truss Fabricatio									
Steel Truss Members Delivery to Site																													
DS.1070.10	Steel Truss Members for Truss # 1	0	24-Aug-16		24-Aug-16		0%	0	13											Steel Truss Members for Truss # 1, Steel Truss Members for Tr									
DS.1080.10	Steel Truss Members for Truss # 2	0	10-Sep-16		10-Sep-16		0%	0	20											Steel Truss Members for Truss # 2, Steel Truss M									
DS.1140.10	Steel Truss Members for Truss # 5	0	19-Sep-16		19-Sep-16		0%	0	20											Steel Truss Members for Truss # 5, Steel									
DS.1100.10	Steel Truss Members for Truss # 3	0	07-Oct-16		07-Oct-16		0%	0	39											Steel Truss Members for Tr									
DS.1120.10	Steel Truss Members for Truss # 4	0	21-Oct-16		21-Oct-16		0%	0	25											Steel Truss Mem									
Building Services																													
MVAC																													
DS.3070	MVAC - Shop Drawings, Materials & Method Statements Submission	120	01-Dec-15	29-Mar-16	01-Dec-15 A	15-Sep-16	31%	-170	5											DS.3070, MVAC - Shop Drawings, Materials									
DS.3080	MVAC - CA Review & Comments	30	23-Aug-16	21-Sep-16	01-Apr-16 A	05-Aug-16	80%	47	18											DS.3080, MVAC - CA Review & Comme									
DS.3090	MVAC - Incorporate Comments & Resubmit	30	15-Sep-16	14-Oct-16	15-Apr-16 A	19-Aug-16	70%	56	18											DS.3090, MVAC - Inc									
DS.3100	MVAC - CA Review & Approval	30	13-Oct-16	11-Nov-16	02-May-16 A	02-Sep-16	60%	70	18																				
DS.3110	MVAC - Procurement and Delivery	180	16-Sep-16	14-Mar-17	16-Sep-16	14-Mar-17	0%	0	5																				
Electrical and ELV Systems																													
DS.4120	Elect & ELV Systems - Shop Drawings and Materials Submission and App	120	29-Feb-16	27-Jun-16	01-Dec-15 A	12-Oct-16	39%	-106	9											DS.4120, Elect & ELV S									
DS.4130	Elect & ELV Systems - CA Review & Comments	30	01-Aug-16	30-Aug-16	01-Apr-16 A	05-Aug-16	80%	25	48											DS.4130, Elect & ELV Systems - CA Review & Comments									
DS.4140	Elect & ELV Systems - Incorporate Comments & Resubmit	30	31-Aug-16	29-Sep-16	15-Apr-16 A	19-Aug-16	70%	41	48											DS.4140, Elect & ELV Systems -									
DS.4150	Elect & ELV Systems - CA Review & Approval	30	30-Sep-16	29-Oct-16	16-May-16 A	02-Sep-16	60%	57	48											DS.4150,									
DS.4160	Elect & ELV Systems - Procurement and Delivery	150	12-Oct-16	11-Mar-17	12-Oct-16	11-Mar-17	0%	0	9																				
Fire Services																													
DS.4010	FS - Shop Drawings and Materials Submission and Approval	120	01-Dec-15	29-Mar-16	01-Dec-15 A	30-Aug-16	44%	-154	1											DS.4010, FS - Shop Drawings and Materials Submission a									
DS.4020	FS - CA Review & Comments	30	01-Jun-16	30-Jun-16	15-Apr-16 A	05-Aug-16	80%	-36	2											DS.4020, FS - CA Review & Comments, FS - CA Review & Comments									
DS.4030	FS - Incorporate Comments & Resubmit	30	01-Jul-16	30-Jul-16	22-Apr-16 A	17-Aug-16	70%	-18	2											DS.4030, FS - Incorporate Comments & Resubmit, FS - Incorporate									
DS.4040	FS - CA Review & Approval	30	31-Jul-16	29-Aug-16	16-May-16 A	29-Aug-16	60%	0	2											DS.4040, FS - CA Review & Approval, FS - CA Review & A									
DS.4050	FS - Procurement and Delivery	200	31-Aug-16	18-Mar-17	31-Aug-16	18-Mar-17	0%	0	1																				
Plumbing and Drainage																													
DS.3010	Plumbing & Drainage - Shop Drawings, Materials & Method Statements !	90	30-Dec-15	28-Mar-16	30-Dec-15 A	15-Sep-16	48%	-171	35											DS.3010, Plumbing & Drainage - Shop Draw									
DS.3020	Plumbing & Drainage - CA Review & Comments	30	01-Aug-16	30-Aug-16	01-Apr-16 A	05-Aug-16	80%	25	50											DS.3020, Plumbing & Drainage - CA Review & Comments									
DS.3030	Plumbing & Drainage - Incorporate Comments & Resubmit	30	31-Aug-16	29-Sep-16	14-Apr-16 A	19-Aug-16	70%	41	50											DS.3030, Plumbing & Drainage -									
DS.3040	Plumbing & Drainage - CA Review & Approval	30	30-Sep-16	29-Oct-16	02-May-16 A	31-Aug-16	60%	59	50											DS.3040,									

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016	
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30
VMU Step 2.2 - Concrete Stair																											
VMU MEP Building Service Works																											
A00.3480	Concrete Stair - Electrical Works for LED Lighting on Handrail & Stair	8	17-Jun-16	25-Jun-16	02-May-16 A	09-Aug-16	10%	-36	34	A00.3480, Concrete Stair - Electrical Works for LED Lighting on Handrail &																	
VMU MEP Testing and Commissioning																											
A00.3485	VMU - Building Services Testing and Commissioning	6	31-Aug-16	06-Sep-16	31-Aug-16	06-Sep-16	0%	0	16	A00.3485, VMU - Building Services Testing and Commissioning																	
VMU Statutory Submission & Inspection																											
VMU WSD (FS Pipeworks)																											
A00.3880	VMU - Submit Form WW046 (Part 1 & 2) to WSD (Subject to MJV 1st Su	90	30-Apr-16	28-Jul-16	12-Jan-16 A	09-Aug-16	86%	-12	19	A00.3880, VMU - Submit Form WW046 (Part 1 & 2) to WSD (Subject to M																	
A00.3890	VMU - Submit Form WW046 (Part 3) to WSD (by MJV)	6	10-Aug-16	15-Aug-16	10-Aug-16	15-Aug-16	0%	0	19	A00.3890, VMU - Submit Form WW046 (Part 3) to WSD (by MJV)																	
A00.3900	VMU - Submit Form WW046 (Part 4) to WSD	6	16-Aug-16	21-Aug-16	16-Aug-16	21-Aug-16	0%	0	19	A00.3900, VMU - Submit Form WW046 (Part 4) to WSD																	
A00.3910	VMU - Inspection and Approval by WSD	1	28-Aug-16	28-Aug-16	28-Aug-16	28-Aug-16	0%	0	19	A00.3910, VMU - Inspection and Approval by WSD																	
A00.3920	VMU - Tie-In Connection to Existing Dog House	2	29-Aug-16	30-Aug-16	29-Aug-16	30-Aug-16	0%	0	16	A00.3920, VMU - Tie-In Connection to Existing Dog House																	
VMU EMSD (Electrical)																											
A00.3930	VMU - Prepare & Submit Form WR1 to EMSD (For records only)	6	07-Sep-16	13-Sep-16	07-Sep-16	13-Sep-16	0%	0	20	A00.3930, VMU - Prepare & Submit Form WR1 to EMSD (For records only)																	
VMU FSD (Fire Service)																											
A00.3490	VMU - Form 314 & 501 Submission	0	07-Sep-16		07-Sep-16		0%	0	20	VMU - Form 314 & 501 Submission, VMU - Form 314 & 501 Submission																	
A00.3500	VMU - FSD's Inspection & Fire Certificate Issuance	12	07-Sep-16	18-Sep-16	07-Sep-16	18-Sep-16	0%	0	20	A00.3500, VMU - FSD's Inspection & Fire Certificate Issuance																	
VMU BD (OP)																											
A00.3510	VMU - Submission of BA14	0	19-Sep-16		19-Sep-16		0%	0	20	VMU - Submission of BA14, VMU - Submission of BA14																	
A00.3520	VMU - BD Inspection	12	19-Sep-16	30-Sep-16	19-Sep-16	30-Sep-16	0%	0	20	A00.3520, VMU - BD Inspection																	
A00.3530	VMU - M+ OP	0		30-Sep-16		30-Sep-16	0%	0	20	VMU - M+ OP, VMU - M+ OP,																	
Last Date for Exercising Provisional Sum & Optional Items (Refer Annex B to Preamble) (To be revised)																											
Conservation & Storage Facility (CSF)																											
Storage - Fitting-out Works																											
PA1.4	Photo studio (2/F) - x-ray protection enhancement	0		29-Sep-16		29-Sep-16	0%	0	848	Photo studio (2/F) - x-ray protection enhancement																	
Conservation Laboratory - Furniture and Fixtures																											
PA6.5	Fixed furniture in pantry	0		29-Sep-16		29-Sep-16	0%	0	848	Fixed furniture in pantry, Fixed furniture in pantry																	
Conservation Laboratory - Laboratory Equipment																											
PA7.1	Exhaust trucks-overhead mounted fume extraction arms	0		29-Sep-16		29-Sep-16	0%	0	848	Exhaust trucks-overhead mounted fume extraction arms																	
PA7.2	Fume hood cabinet	0		29-Sep-16		29-Sep-16	0%	0	848	Fume hood cabinet, Fume hood cabinet																	
PA7.3	Exhaust wall (size 5m (L) x 3m (H))	0		29-Sep-16		29-Sep-16	0%	0	848	Exhaust wall (size 5m (L) x 3m (H))																	
PA7.5	Wet shower area free standing enclosure	0		29-Sep-16		29-Sep-16	0%	0	848	Wet shower area free standing enclosure																	
PA7.7	Stainless steel laboratory sink	0		29-Sep-16		29-Sep-16	0%	0	848	Stainless steel laboratory sink, Stainless steel laboratory sink																	
Museum																											
Juke Box Installation																											
PE3.2	Equipment system and machinery for "Juke Box" installation	0		29-Sep-16		29-Sep-16	0%	0	848	Equipment system and machinery for "Juke Box" installation																	
Items Related to Museum Operations																											
PE4.6	People counting system - module enhancement to CCTV system	0		29-Sep-16		29-Sep-16	0%	0	848	People counting system - module enhancement to CCTV system																	
Back of House including Museum Workshop and Art Handling																											
Workshop																											
PH4.3	Exhaust wall	0		29-Sep-16		29-Sep-16	0%	0	848	Exhaust wall, Exhaust wall,																	
L1 and B1 Museum Shop including Espresso Bar																											
Fitting-out Works																											
PJ2.2	Architectural lightings	0		29-Sep-16		29-Sep-16	0%	0	848	Architectural lightings, Architectural lightings																	
PJ2.3	Security shutter	0		29-Sep-16		29-Sep-16	0%	0	848	Security shutter, Security shutter																	
Signage																											

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016			November 2016												
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06									
B10.2360	AEL North - ELS Stage 5 Site Formation (A9) - 2nd layer struts	8	11-Aug-16	20-Aug-16	11-Aug-16	20-Aug-16*	0%	0	-4																												
Portion A8, B6, A12, B7																																					
B10.3570	AEL North - ELS Stage 4 Site Formation (Portion A8, B6)	26	31-May-16	11-Jul-16	29-Mar-16 A	19-Aug-16	50%	-26	37																												
B10.3580	AEL North - ELS Stage 5 Site Formation (Portion A12, B7)	30	01-Aug-16	13-Sep-16	01-Aug-16	13-Sep-16	0%	0	60																												
Portion A12																																					
B10.3910	AEL North - ELS Stage 5 Site Formation (Portion A12) - 1st Layer Struts	2	11-Aug-16	13-Aug-16	11-Aug-16*	13-Aug-16	0%	0	0																												
B10.3920	AEL North - ELS Stage 5 Site Formation (Portion A12) - 2nd Layer Struts	5	15-Aug-16	20-Aug-16	15-Aug-16	20-Aug-16	0%	0	4																												
B10.3930	AEL North - ELS Stage 5 Site Formation (Portion A12) - Trim & Blinding	5	22-Aug-16	27-Aug-16	22-Aug-16	27-Aug-16*	0%	0	4																												
AEL South																																					
DCS																																					
B10.2220	DCS - Remove 1st Layer Struts at +4.2mPD	11	01-Aug-16	16-Aug-16	01-Aug-16	16-Aug-16	0%	0	476																												
B10.1210a	DCS - Construct Sump Pit & Overflow Pipes (Defer Area)	25	01-Aug-16	29-Aug-16	20-Jul-16 A	20-Aug-16	30%	7	718																												
B10.2230	DCS - Backfilling and Install Access Hatch and Misc. Works	50	18-Aug-16	01-Nov-16	18-Aug-16	01-Nov-16	0%	0	476																												
AEL South except DCS																																					
B10.1090	AEL South - Plant Room - Excavate to +2.45mPD for Plant Room (G.L.8-	16	01-Aug-16	23-Aug-16	01-Aug-16	23-Aug-16	0%	0	169																												
AEL North East of Portion A10 (for Area M12 h/o)																																					
C10.0390	Vacate Portion M12 for Lyric Contractor for Foundations (App.D1.Item 5,	0		25-Aug-16		25-Aug-16	0%	0	43																												
ICP																																					
B10.3220	ICP - Pile Cap Construction of Area A	25	30-Jul-16	05-Sep-16	16-Jul-16 A	17-Sep-16	10%	-8	-55																												
B10.3240	ICP - Lateral Support	50	30-Jul-16	15-Oct-16	30-May-16 A	15-Nov-16	15%	-24	-55																												
B10.3230	ICP - Pile Cap Construction of Area B	25	19-Sep-16	27-Oct-16	19-Sep-16	27-Oct-16	0%	0	-55																												
B10.3250	ICP - Complete Excavation & Lateral Support	0		15-Nov-16		15-Nov-16	0%	0	-55																												
Structures																																					
Basement Structures / Sub-Structure																																					
Pilecaps																																					
AEL North																																					
Stage 3 - Pilecap (A4,A5,B4,B5)																																					
Pilecap (A4 & A5)																																					
B10.2060h	AEL North - ELS Stage 4 - Construct Pilecap & B2 Slab (A5)	5	05-Aug-16	10-Aug-16	12-Jul-16 A	06-Aug-16	70%	3	46																												
B10.2060p	AEL North - ELS Stage 4 - Extend 1st height of basement wall	10	03-Aug-16	13-Aug-16	28-Jul-16 A	13-Aug-16	10%	0	56																												
Pilecap (B4 & B5)																																					
B10.2070l	AEL North - Complete Pilecaps for RC Columns of Truss T1 & T2	0		06-Aug-16		06-Aug-16	0%	0	12																												
B10.2070j	AEL North - ELS Stage 4 - Construct Pilecap & B2 Slab (B5)	7	12-Aug-16	19-Aug-16	14-Jul-16 A	13-Aug-16	30%	5	4																												
B10.2070m	AEL North - ELS Stage 4 - Extend 1st height of basement wall	12	08-Aug-16	20-Aug-16	08-Aug-16	20-Aug-16	0%	0	16																												
B10.2070k	AEL North - ELS Stage 4 - Extend Upper Pile caps (B5) for Truss T1 & T2	14	22-Aug-16	06-Sep-16	28-Jul-16 A	06-Aug-16	25%	26	12																												
Stage 4 to 7: ELS & Excavation (A6, A7, A8, A9, A10, A11, A12 & B6, B7, B8, B9)																																					
Pilecaps - Portion (A6, A7 & A8)																																					
B10.3101	AEL North - BD Stage 4 - Pile Cap Construction (Portion A6, A7)	43	09-May-16	14-Jul-16	27-Apr-16 A	08-Aug-16	90%	-16	5																												
Pile Cap Portion A7																																					
B10.3111	AEL North - BD Stage 4 - Pile Cap Construction (Portion A7)	43	27-Apr-16	02-Jul-16	27-Apr-16 A	08-Aug-16*	90%	-23	-23																												
Pilecaps - Portion (B8, A9 & B9)																																					
B10.3103	AEL North - BD Stage 6 - Pile Cap Construction (Portion B8 & A9, B9)	30	30-Jul-16	12-Sep-16	04-Jul-16 A	20-Sep-16	5%	-5	1																												
B10.3104	AEL North - BD Stage 6 - Underground Drainage (Portion B8 & A9, B9)	12	03-Sep-16	20-Sep-16	03-Sep-16	20-Sep-16	0%	0	161																												
Pile Cap Portion B8																																					
B10.3113	AEL North - BD Stage 6 - Pile Cap Construction (Portion B8)	10	07-Sep-16	20-Sep-16	07-Sep-16*	20-Sep-16*	0%	0	-22																												
B10.3114	AEL North - BD Stage 6 - Underground Drainage (Portion B8)	6	10-Oct-16	18-Oct-16	10-Oct-16*	18-Oct-16*	0%	0	-38																												

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016						
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06				
B10.3525	AEL North - Wall, Column & B1 Slab (Portion B1E-5)	18	12-Aug-16	29-Aug-16	15-Jul-16 A	13-Aug-16*	70%	16	-166	B10.3525, AEL North - Wall, Column & B1 Slab (Portion B1E-5)																						
B10.3540	AEL North - Wall, Column & B1 Slab (Portion B1F)	20	05-Aug-16	02-Sep-16	01-Jul-16 A	23-Aug-16	40%	6	35	B10.3540, AEL North - Wall, Column & B1 Slab (Portion B1F)																						
B10.3065	AEL North - Wall, Column & B1 Slab (Portion B1D)	19	02-Sep-16	29-Sep-16	02-Sep-16	29-Sep-16	0%	0	11	B10.3065, AEL North - Wall, Column & B1 Slab (Portion B1D)																						
B10.3690	AEL North - Wall, Column & B1 Slab (Portion B1R)	20	06-Sep-16	07-Oct-16	06-Sep-16	07-Oct-16	0%	0	7	B10.3690, AEL North - Wall, Column & B1 Slab (Portion B1R)																						
B10.3560	AEL North - Wall, Column & B1 Slab (Portion B1G) (Portion A6, A7)	14	29-Sep-16	21-Oct-16	29-Sep-16	21-Oct-16	0%	0	5	B10.3560, AEL North - Wall, Column & B1 Slab (Portion B1G) (Portion A6, A7)																						
B10.3680	AEL North - Wall, Column & B1 Slab (Portion B1L) (Access Ramp)	26	12-Nov-16	12-Dec-16	12-Nov-16	12-Dec-16	0%	0	75	B10.3680, AEL North - Wall, Column & B1 Slab (Portion B1L) (Access Ramp)																						
AEL North - B1/F Slab for Truss T1, T2 & T5 Erection																																
C10.0120	AEL North - Construct Found Space Basement Wall and Cols to +1.7mPD	15	12-Aug-16	02-Sep-16	12-Aug-16	02-Sep-16	0%	0	602	C10.0120, AEL North - Construct Found Space Basement Wall and Cols to +1.7mPD																						
B10.3090	AEL North - Wall, Column & B1 Slab (Portion A4 & A5)	18	08-Aug-16	02-Sep-16	08-Aug-16	02-Sep-16	0%	0	157	B10.3090, AEL North - Wall, Column & B1 Slab (Portion A4 & A5)																						
AEL North - B1/F Slab for CSF & RDE (North of GL 1)																																
B10.3170	AEL North - Wall, Column & B1 Slab (Portion B1K) (Portion A12, B7)	12	29-Oct-16	11-Nov-16	29-Oct-16	11-Nov-16	0%	0	33	B10.3170, AEL North - Wall, Column & B1 Slab (Portion B1K) (Portion A12, B7)																						
B10.3150	AEL North - Wall, Column & B1 Slab (Portion B1H) (Portion A10, A11, A12)	45	22-Oct-16	14-Dec-16	22-Oct-16	14-Dec-16	0%	0	5	B10.3150, AEL North - Wall, Column & B1 Slab (Portion B1H) (Portion A10, A11, A12)																						
AEL South - B1/F Slab for DCS to facilitate Truss Erection																																
B10.2125e	AEL South (DCS) - Construct Walls & Columns to B1 Slab - part 5	4	31-Jul-16	03-Aug-16	23-Jul-16 A	08-Aug-16	70%	-5	900	B10.2125e, AEL South (DCS) - Construct Walls & Columns to B1 Slab - part 5																						
B10.2115	AEL South (DCS) - Remove 2nd Layer Struts at 0.0mPD of DCS Plant Room	8	01-Aug-16	12-Aug-16	01-Aug-16	12-Aug-16	0%	0	25	B10.2115, AEL South (DCS) - Remove 2nd Layer Struts at 0.0mPD of DCS Plant Room																						
B10.2155	AEL South (DCS) -- Pile caps & Sump Pits (Deferred area)	15	31-Jul-16	14-Aug-16	01-Jul-16 A	10-Aug-16	70%	4	898	B10.2155, AEL South (DCS) -- Pile caps & Sump Pits (Deferred area)																						
B10.2125f	AEL South (DCS) - Construct Walls & Columns to B1 Slab - part 6	16	31-Jul-16	15-Aug-16	29-Jul-16 A	13-Aug-16	20%	2	895	B10.2125f, AEL South (DCS) - Construct Walls & Columns to B1 Slab - part 6																						
B10.2125d	AEL South (DCS) - Construct Walls & Columns to B1 Slab - part 4	17	31-Jul-16	16-Aug-16	23-Jul-16 A	08-Aug-16	70%	8	900	B10.2125d, AEL South (DCS) - Construct Walls & Columns to B1 Slab - part 4																						
B10.2135	AEL South (DCS) - B1 Floor Slab at ~+6.05mPD - Bay 2	11	03-Aug-16	17-Aug-16	29-Jul-16 A	12-Aug-16*	20%	3	206	B10.2135, AEL South (DCS) - B1 Floor Slab at ~+6.05mPD - Bay 2																						
B10.2145	AEL South (DCS) - B1 Floor Slab at ~+6.05mPD - Bay 3	11	15-Aug-16	30-Aug-16	15-Aug-16	30-Aug-16	0%	0	629	B10.2145, AEL South (DCS) - B1 Floor Slab at ~+6.05mPD - Bay 3																						
AEL South - RC Structures Prior to Area M14 H/O																																
B10.1039b	AEL South - Construct Core Wall on PC96 from GF to 1/F Level	25	31-Jul-16	24-Aug-16	31-Jul-16 A	24-Aug-16	10%	0	0	B10.1039b, AEL South - Construct Core Wall on PC96 from GF to 1/F Level																						
B10.3310	AEL South - Construct Basement Road Wall between PC 109 & 116 to G/F Level	17	01-Aug-16	25-Aug-16	01-Aug-16	25-Aug-16	0%	0	181	B10.3310, AEL South - Construct Basement Road Wall between PC 109 & 116 to G/F Level																						
B10.3290	AEL South - Construct Basement Road Wall between PC 96 & PC 105 to G/F Level	17	01-Aug-16	25-Aug-16	01-Aug-16	25-Aug-16	0%	0	181	B10.3290, AEL South - Construct Basement Road Wall between PC 96 & PC 105 to G/F Level																						
B10.1040	AEL South - Construct Core Wall on PC96 from 1/F to 1M/F Level	15	25-Aug-16	15-Sep-16	25-Aug-16	15-Sep-16	0%	0	0	B10.1040, AEL South - Construct Core Wall on PC96 from 1/F to 1M/F Level																						
B10.3300	AEL South - Construct External Wall between PC 96 & PC105 to G/F Level	25	26-Aug-16	03-Oct-16	26-Aug-16	03-Oct-16	0%	0	181	B10.3300, AEL South - Construct External Wall between PC 96 & PC105 to G/F Level																						
B10.3315	AEL South - Construct Walls, Column & Staircases to G/F Level	27	06-Sep-16	18-Oct-16	06-Sep-16	18-Oct-16	0%	0	181	B10.3315, AEL South - Construct Walls, Column & Staircases to G/F Level																						
B10.3320	AEL South - Construct G/F slab between PC 105, 109 & 116	16	11-Oct-16	01-Nov-16	11-Oct-16	01-Nov-16	0%	0	181	B10.3320, AEL South - Construct G/F slab between PC 105, 109 & 116																						
Podium Super-Structures																																
Trusses																																
AEL Tunnel Zone -Trusses 1																																
C10.0145	AEL Tunnel Zone - Construct RC Column for Steel Trusses T1	21	17-Aug-16	10-Sep-16	17-Aug-16	10-Sep-16	0%	0	4	C10.0145, AEL Tunnel Zone - Construct RC Column for Steel Trusses T1																						
C10.0160	AEL Tunnel Zone - Truss 1 Concreting of 1st pour of bottom chord (750r)	12	17-Sep-16	30-Sep-16	17-Sep-16	30-Sep-16	0%	0	0	C10.0160, AEL Tunnel Zone - Truss 1 Concreting of 1st pour of bottom chord (750r)																						
C10.0185	AEL Tunnel Zone - Truss 1 install bottom steel plates	24	03-Oct-16	31-Oct-16	03-Oct-16	31-Oct-16	0%	0	5	C10.0185, AEL Tunnel Zone - Truss 1 install bottom steel plates																						
C10.0195	AEL Tunnel Zone - Truss 1 Concreting of 2nd pour of bottom chord	15	11-Nov-16	28-Nov-16	11-Nov-16	28-Nov-16	0%	0	5	C10.0195, AEL Tunnel Zone - Truss 1 Concreting of 2nd pour of bottom chord																						
C10.0190	AEL Tunnel Zone - Truss 1 install temp platform, top nodes & inclined struts	24	01-Nov-16	28-Nov-16	01-Nov-16	28-Nov-16	0%	0	5	C10.0190, AEL Tunnel Zone - Truss 1 install temp platform, top nodes & inclined struts																						
C10.0150	AEL Tunnel Zone - Erection of Temp Working Platform and Falsework for Truss 1	50	13-Oct-16	09-Dec-16	12-Jul-16 A	15-Sep-16	20%	70	0	C10.0150, AEL Tunnel Zone - Erection of Temp Working Platform and Falsework for Truss 1																						
C10.0210	AEL Tunnel Zone - Truss 1 install top beam steel plates	18	29-Nov-16	19-Dec-16	29-Nov-16	19-Dec-16	0%	0	5	C10.0210, AEL Tunnel Zone - Truss 1 install top beam steel plates																						
C10.0240	AEL Tunnel Zone - Truss 1 Concreting of inclined member	37	29-Nov-16	13-Jan-17	29-Nov-16	13-Jan-17	0%	0	5	C10.0240, AEL Tunnel Zone - Truss 1 Concreting of inclined member																						
C10.0155	AEL Tunnel Zone - Truss 1 Construction Summary	117	17-Sep-16	09-Feb-17	17-Sep-16	09-Feb-17	0%	0	5	C10.0155, AEL Tunnel Zone - Truss 1 Construction Summary																						
AEL Tunnel Zone -Trusses 2																																
C10.0161	AEL Tunnel Zone - Construct RC Column for Steel Trusses T2	22	17-Aug-16	10-Sep-16	17-Aug-16	10-Sep-16	0%	0	4	C10.0161, AEL Tunnel Zone - Construct RC Column for Steel Trusses T2																						
C10.0170	AEL Tunnel Zone - Truss 2 Concreting of 1st pour of bottom chord (750r)	12	24-Sep-16	08-Oct-16	24-Sep-16	08-Oct-16	0%	0	0	C10.0170, AEL Tunnel Zone - Truss 2 Concreting of 1st pour of bottom chord (750r)																						
C10.0198	AEL Tunnel Zone - Truss 2 install bottom steel plates	24	08-Oct-16	05-Nov-16	08-Oct-16	05-Nov-16	0%	0	0	C10.0198, AEL Tunnel Zone - Truss 2 install bottom steel plates																						
C10.0200	AEL Tunnel Zone - Truss 2 install temp. platform, top nodes & inclined struts	24	07-Nov-16	03-Dec-16	07-Nov-16	03-Dec-16	0%	0	0	C10.0200, AEL Tunnel Zone - Truss 2 install temp. platform, top nodes & inclined struts																						
C10.0205	AEL Tunnel Zone - Truss 2 Concreting of 2nd pour of bottom chord	15	17-Nov-16	03-Dec-16	17-Nov-16	03-Dec-16	0%	0	0	C10.0205, AEL Tunnel Zone - Truss 2 Concreting of 2nd pour of bottom chord																						

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	July 2016				August 2016				September 2016				October 2016				November 2016				
										03	10	17	24	31	07	14	21	28	04	11	18	25	02	09	16	23	30	06		
C10.0162	AEL Tunnel Zone - Erection of Temp Working Platform and Falsework for	50	29-Oct-16	28-Dec-16	12-Jul-16 A	15-Sep-16	20%	84	6																					
C10.0165	AEL Tunnel Zone - Truss 2 Construction Summary	124	24-Sep-16	24-Feb-17	24-Sep-16	24-Feb-17	0%	0	0																					
AEL Tunnel Zone -Trusses 5																														
C10.0168	AEL Tunnel Zone - Construct Composite Columns for Truss T5	26	06-Aug-16	06-Sep-16	23-Jul-16 A	30-Aug-16	10%	6	26																					
C10.0180	AEL Tunnel Zone - Truss 5 Concreting of 1st pour of bottom chord (750r	12	24-Sep-16	08-Oct-16	24-Sep-16	08-Oct-16	0%	0	6																					
C10.0215	AEL Tunnel Zone - Truss 5 install bottom steel plates	24	11-Oct-16	07-Nov-16	11-Oct-16	07-Nov-16	0%	0	6																					
C10.0220	AEL Tunnel Zone - Truss 5 install temp. platform, top nodes & inclined st	24	08-Nov-16	05-Dec-16	08-Nov-16	05-Dec-16	0%	0	6																					
C10.0225	AEL Tunnel Zone - Truss 5 Concreting of 2nd pour of bottom chord	15	18-Nov-16	05-Dec-16	18-Nov-16	05-Dec-16	0%	0	6																					
C10.0172	AEL Tunnel Zone - Erection of Temp Working Platform and Falsework for	50	29-Oct-16	28-Dec-16	12-Jul-16 A	15-Sep-16	20%	84	40																					
C10.0175	AEL Tunnel Zone - Truss 5 Construction Summary	105	24-Sep-16	02-Feb-17	24-Sep-16	02-Feb-17	0%	0	6																					
AEL South - Trusses 3																														
B6A.1999	AEL Tunnel Zone - Construct Composite/RC Columns for Truss T3	20	10-Aug-16	01-Sep-16	10-Aug-16*	01-Sep-16	0%	0	5																					
B6A.2000	AEL South - Erection of Temp Working Platform and Falsework for Truss	46	02-Sep-16	28-Oct-16	02-Sep-16*	28-Oct-16	0%	0	5																					
B6A.2030	AEL South - Truss 3 Concreting of 1st pour of bottom chord (750mm)	12	03-Nov-16	16-Nov-16	03-Nov-16	16-Nov-16	0%	0	5																					
B6A.2045	AEL South - Truss 3 install bottom steel plates	24	17-Nov-16	14-Dec-16	17-Nov-16	14-Dec-16	0%	0	5																					
B6A.2020	AEL South - Truss 3 Construction Summary	135	03-Nov-16	20-Apr-17	03-Nov-16	20-Apr-17	0%	0	5																					
AEL South - Trusses 4																														
B6A.2024	AEL Tunnel Zone - Construct Composite Columns for Truss T4	21	10-Aug-16	02-Sep-16	10-Aug-16	02-Sep-16	0%	0	54																					
B6A.2025	AEL South - Erection of Temp Working Platform and Falsework for Truss	46	02-Sep-16	28-Oct-16	02-Sep-16	28-Oct-16	0%	0	13																					
B6A.2040	AEL South - Truss 4 Concreting of 1st pour of bottom chord (750mm)	12	03-Nov-16	16-Nov-16	03-Nov-16	16-Nov-16	0%	0	5																					
B6A.2058	AEL South - Truss 4 install bottom steel plates	24	17-Nov-16	14-Dec-16	17-Nov-16	14-Dec-16	0%	0	5																					
B6A.2035	AEL South - Truss 4 Construction Summary	105	03-Nov-16	11-Mar-17	03-Nov-16	11-Mar-17	0%	0	5																					
G/F Slabs - Walls, Columns & G/F Slab																														
AEL North																														
B20.0000	Podium G/F Portion GF1A - Wall, Column & G/F slab (GL 8-10/A-D)	18	08-Oct-16	29-Oct-16	08-Oct-16	29-Oct-16	0%	0	8																					
B20.0005	Podium G/F Portion GF1 Tower Footprint - Wall, Column & Structure (GL	14	21-Oct-16	05-Nov-16	21-Oct-16	05-Nov-16	0%	0	8																					
B20.0015	Podium G/F Portion GF1 - Wall, Column & G/F slab (GL 4-7/A-D)	23	21-Oct-16	16-Nov-16	21-Oct-16	16-Nov-16	0%	0	2																					
B20.0050	Podium G/F Portion GF2 - Wall, Column & G/F slab (GL 1-4/A-D')	23	17-Nov-16	13-Dec-16	17-Nov-16	13-Dec-16	0%	0	2																					
1/F Slabs - Walls, Columns & 1/F Slab																														
AEL North																														
B20.0425	Podium 1/F Tower Footprint (Block A) - Core Wall, Column & 1/F Slab (C	18	14-Nov-16	03-Dec-16	14-Nov-16	03-Dec-16	0%	0	2																					
SPS Structures (include Excavation)																														
D01.3010	SPS - Construct Basement Structure	100	01-Aug-16	28-Nov-16	25-Jul-16 A	25-Nov-16	5%	2	-79																					
ICP Structures (include Excavation)																														
A3980	ICP - ELS works (Provisional)	110	31-May-16	12-Nov-16	20-May-16 A	24-Nov-16	30%	-10	-63																					
A4490	ICP - Structure works	244	25-Nov-16	21-Sep-17	25-Nov-16	21-Sep-17	0%	0	-74																					
Building Services																														
M+ Basement Building Service																														
B2/F MEP																														
First Fix																														
B40.8985	Early Access for Building Services (1st Fix)	0	10-Nov-16		10-Nov-16		0%	0	180																					
B40.8990	B2/F - Building Services - Zone A - 1st Fix	60	10-Nov-16	21-Jan-17	10-Nov-16	21-Jan-17	0%	0	180																					
B40.8995	B2/F - Building Services - 1st Fix - Summary	210	10-Nov-16	28-Jul-17	10-Nov-16	28-Jul-17	0%	0	40																					
SPS MEP																														
D01.3020	SPS - Installation of Sewage/Drainage Pipes and Manholes	70	26-Nov-16	22-Feb-17	26-Nov-16	22-Feb-17	0%	0	-79																					
ABWF																														

Lyric Theatre Complex

Activity ID	Activity Name	Durn. (Days)	Programme Rev A Start	Programme Rev A Finish	Current / Actual Start	Current / Actual Finish	Physical % Complete	Finish Variance	Float (Days)	2016												2017											
										Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
LT.0122	Pipe Pile and Grout Curtain; Portions L04, L05, L14, L24, M14 and M14b (PP 443 nos and CPP 3 nos.)	215	21-May-16	08-Feb-17	12-Mar-16 A	11-Jan-17	56%	21	140																								
LT.3030	Clutched Pipe Pile and Grout Curtain; Portions M14a, L16 and L01 (CPP 82 nos.)	89	25-Jun-16	12-Oct-16	07-Jul-16 A	12-Oct-16	55%	-1	90																								
Sheet Pile in Area 6																																	
LT.0124	Sheet Piles Installation in Portion L06; 1,472m2	32	21-Jun-16	28-Jul-16	07-Jun-16 A	25-Jul-16 A	100%	4																									
LT.2945	Sheet Piles Installation in Portions L07 and M12; 1,640m2	35	29-Jul-16	07-Sep-16	04-Jul-16 A	15-Sep-16	70%	-7	8																								
LT.2950	Instrument Installation for Instrumental Sheet Pile	15	28-May-16	15-Jun-16	21-May-16 A	31-May-16 A	100%	13																									
LT.2955	Drive Instrumental Sheet Pile and Report Submission	10	08-Jun-16	20-Jun-16	01-Jun-16 A	16-Jun-16 A	100%	4																									
Contract Administrator's Instruction No. 8																																	
LT.3050	Pre-grouting Works adjacent Seawall Portion L03	21	17-Sep-16	13-Oct-16	16-Aug-16 A	15-Sep-16	50%	21	110																								
LT.3060	Pipe Pile and Grout Curtain; Portion L02 (PP 21nos.)	20	13-Sep-16	07-Oct-16	20-Oct-16	11-Nov-16	0%	-29	189																								
LT.3070	Clutched Pipe Pile and Grout Curtain; Portion L03 (CPP 104 nos. and PP 4 nos)	125	14-Oct-16	15-Mar-17	13-Oct-16	14-Mar-17	0%	1	90																								
BA14																																	
LT.0126	Submission of BA14 for Stage 1 ELS Sheet Piling Works at Area 6	2	08-Sep-16	09-Sep-16	17-Sep-16	19-Sep-16	0%	-7	8																								
LT.0127	BD's Acknowledgement	14	09-Sep-16	23-Sep-16	19-Sep-16	03-Oct-16	0%	-10	9																								
LT.0128	Submission of BA14 for Stage 1 ELS Piling Works at Area 1 to 5	2	16-Mar-17	17-Mar-17	15-Mar-17	16-Mar-17	0%	1	90																								
LT.0129	BD's Acknowledgement	14	17-Mar-17	31-Mar-17	16-Mar-17	30-Mar-17	0%	1	115																								
Pumping Test																																	
LT.0131	Install Area 1 to Area 5 Pumping Test Instrumentation & Wells (16 PW + 32 OW) and Submission of Initial Readin	22	13-Jun-17	08-Jul-17	14-Jun-17	10-Jul-17	0%	-1	11																								
LT.0132	Carry Out Pumping Test in Area 1 to Area 5 and Submission to BD	20	09-Jul-17	28-Jul-17	11-Jul-17	30-Jul-17	0%	-2	13																								
LT.0133	Obtain BD's Acknowledgement of Area 1 to 5 Pumping Test Results	45	29-Jul-17	11-Sep-17	31-Jul-17	13-Sep-17	0%	-2	30																								
LT.0134	Install Area 6 Pumping Test Instrumentation & Wells (3 PW + 6 OW) and Submission of Initial Readings	21	07-Dec-16	04-Jan-17	01-Dec-16	28-Dec-16	0%	5	12																								
LT.0135	Carry Out Pumping Test in Area 6 and submission to BD	16	11-Jan-17	26-Jan-17	31-Dec-16	15-Jan-17	0%	10	13																								
LT.0136	Obtain BD's Acknowledgement of Area 6 Pumping Test Results	45	26-Jan-17	12-Mar-17	16-Jan-17	01-Mar-17	0%	10	13																								
Option Stage 2 ELS and Excavation Works at Area 6																																	
LT.0138	Bulk Excavation and Installation of Struts	102	25-Apr-17	26-Aug-17	22-Apr-17	24-Aug-17	0%	1	2																								
LT.0139	Trim Pile Head and Clearance	27	26-Aug-17	27-Sep-17	24-Aug-17	25-Sep-17	0%	1	14																								
LT.3075	Submission of BA8 and BA10 for Bulk Excavation Works	35	14-Mar-17	18-Apr-17	04-Mar-17	07-Apr-17	0%	10	13																								
LT.3080	Installation of Temporary Platform	22	18-Apr-17	16-May-17	07-Apr-17	09-May-17	0%	5	8																								
BA14 for Option Stage 2 ELS and Excavation Works at Area 6																																	
LT.0141	Submission of BA14 for Stage 2 ELS and Excavation Works at Area 6	2	26-Aug-17	29-Aug-17	24-Aug-17	26-Aug-17	0%	1	2																								
LT.0142	BD's Acknowledgement	45	28-Aug-17	12-Oct-17	27-Aug-17	10-Oct-17	0%	1	3																								

- Secondary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

**WEST KOWLOON CULTURAL DISTRICT AUTHORITY
FOUNDATION WORKS FOR LYRIC THEATRE COMPLEX
AND THE EXTENDED BASEMENT IN ZONE 3B
SUMMARY PROGRAMME BASED ON
CONSTRUCTION WORKS PROGRAMME - REV. "A"**



Date	Revision	Checked	Approved
02-Sep-16	For Information	R.L.	A.W.

C. Action and Limit Levels for Construction Phase

Air Quality

The Action and Limit Levels for 1-hour and 24-hour TSP for the monitoring station are presented in following tables:

Table C-1: Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1	273.7	500
AM2	274.2	500

Table C-2: Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1	143.6	260
AM2	151.1	260

Noise

The Action and Limit Levels for Noise for the monitoring stations are presented in following table:

Table C-3: Action and Limit Levels for Construction Noise

Time Period & Monitoring Locations	Action Level	Limit Level
NM1		
0700-1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)

D. Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact

Air Quality

In case the Action and Limit Levels are not complied during construction stage, the following Event and Action Plan should be followed:

Table D-1: Event and Action Plan for Air Quality

Event	Action			
	ET	IEC	WKCDA	Contractor
Action Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and WKCDA; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and WKCDA; 3. Advise the WKCDA on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and WKCDA; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Monitor the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial to WKCDA within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform WKCDA, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the WKCDA on the effectiveness of the proposed remedial measures; 5. Monitor the implementation of 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.

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

Construction Noise

In case the Action and Limit Levels are not complied during construction stage, the following Event and Action Plan should be followed:

Table D-2: Event and Action Plan for Construction Noise

Event	Action			
	ET Leader	IEC	WKCD A	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify WKCD A, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, WKCD A and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the WKCD A accordingly; 3. Advise the WKCD A on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and WKCD A; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Inform IEC, WKCD A, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and WKCD A on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and WKCD A informed of the results; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst WKCD A, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the WKCD A accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and WKCD A within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the WKCD A until the exceedance is abated.

Landscape and Visual Impact

In case of non-compliance of landscape and visual impacts, procedures in accordance with the Event and Action Plan should be followed:

Table D-3: Event and Action Plan for Landscape and Visual Impact

Event	Action			
	ET Leader	IEC	WKCD A	Contractor
Design Check	<ol style="list-style-type: none"> 1. Design check to make sure the design complies with all the proposed mitigation measures in the EIA report; 2. Prepare and submit report. 	<ol style="list-style-type: none"> 1. Check report submitted by ET; 2. Recommend remedial design if necessary. 	<ol style="list-style-type: none"> 1. Undertake remedial design if necessary. 	-
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Identify source of non-conformity; 2. Report to IEC and WKCD A; 3. Discuss remedial actions with IEC, WKCD A and Contractor; 4. Monitor remedial actions until rectification has been completed. 	<ol style="list-style-type: none"> 1. Check and verify source of non-conformity; 2. Discuss remedial actions with ET and Contractor; 3. Advise WKCD A on effectiveness of proposed remedial actions; 4. Check implementation of remedial actions. 	<ol style="list-style-type: none"> 1. Notify Contractor; 2. Ensure remedial actions are properly implemented. 	<ol style="list-style-type: none"> 1. Amend working method as necessary; 2. Rectify damage and undertake necessary replacement and remedial actions.
Repeated non-conformity	<ol style="list-style-type: none"> 1. Identify source of non-conformity; 2. Report to IEC and WKCD A; 3. Increase monitoring frequency; 4. Discuss remedial actions with IEC, WKCD A and Contractor; 5. Monitor remedial actions until rectification has been completed; 6. If non-conformity rectified, reduce monitoring frequency back to normal. 	<ol style="list-style-type: none"> 1. Check and verify source of non-conformity; 2. Check Contractor's working method; 3. Discuss remedial actions with ET and Contractor; 4. Advise WKCD A on effectiveness of proposed remedial actions; 5. Supervise implementation of remedial actions. 	<ol style="list-style-type: none"> 1. Notify Contractor; 2. Ensure remedial actions are properly implemented. 	<ol style="list-style-type: none"> 1. Amend working method as necessary; 2. Rectify damage and undertake necessary replacement and remedial actions.

E. Monitoring Schedule

AUGUST 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	4	5	6
7	8	9 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	10	11	12	13
14	15 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	16	17	18	19 AM1, AM2 - 24hrTSP, 1hr TSP x3	20
21	22	23	24	25 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	26	27
28	29	30	31 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring			
		Notes: AM1 - International Commerce Centre (ICC) AM2 - The Harbourside Tower 1 NM1A - International Commerce Centre (ICC) *24hr TSP impact monitoring at AM2 station on 31 August 2016 was suspended due to electricity issue.				

SEPTEMBER 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	7	8	9	10
11	12 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	13	14	15	16	17 AM1, AM2 - 24hrTSP, 1hr TSP x3
18	19	20	21	22	23 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	24
25	26	27	28	29 AM1, AM2 - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	30	
		Notes: AM1 - International Commerce Centre (ICC) AM2 - The Harbourside Tower 1 NM1A - International Commerce Centre (ICC)				

F. Calibration Certifications

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM1(ICC)
 Calibrated by : K.T.Ho
 Date : 16/06/2016

Sampler

Model : TE-5170
 Serial Number : S/N 0767

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 14 Mar 2016
 Slope (m) : 2.09532
 Intercept (b) : -0.03812
 Correlation Coefficient(r) : 0.99994

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008
 Ta(K) : 304

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.0	3.118	1.514	58	57.19
2 13 holes	8.0	2.789	1.358	50	49.30
3 10 holes	5.8	2.375	1.161	40	39.44
4 7 holes	4.0	1.972	0.969	32	31.55
5 5 holes	2.2	1.462	0.727	20	19.72

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m): 47.189 Intercept(b): -14.634 Correlation Coefficient(r): 0.9995

Checked by: 
 Magnum Fan

Date: 22/06/2016

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM1(ICC)
 Calibrated by : K.T.Ho
 Date : 16/08/2016

Sampler

Model : TE-5170
 Serial Number : S/N 0767

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 14 Mar 2015
 Slope (m) : 2.09532
 Intercept (b) : -0.03812
 Correlation Coefficient(r) : 0.99994

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008
 Ta(K) : 303

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.2	3.160	1.534	60	59.36
2 13 holes	8.4	2.867	1.395	53	52.43
3 10 holes	6.2	2.463	1.203	44	43.54
4 7 holes	4.4	2.075	1.018	36	35.61
5 5 holes	2.6	1.595	0.790	26	25.72

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m): 45.015 Intercept(b): -10.155

Correlation Coefficient(r): 0.9996

Checked by: 
 Magnum Fan

Date: 23/08/2016

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM2 (Harbourside)
 Calibrated by : K.T.Ho
 Date : 16/06/2016

Sampler

Model : TE-5170
 Serial Number : S/N 8919

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 14 Mar 2016
 Slope (m) : 2.10326
 Intercept (b) : -0.06696
 Correlation Coefficient(r) : 0.99989

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008
 Ta(K) : 304

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.0	3.416	1.656	58	57.19
2 13 holes	9.0	2.958	1.438	50	49.30
3 10 holes	7.0	2.609	1.272	42	41.41
4 7 holes	4.4	2.068	1.015	32	31.55
5 5 holes	2.4	1.528	0.758	20	19.72

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m): 41.792 Intercept(b): -11.482 Correlation Coefficient(r): 0.9992

Checked by: 
 Magnum Fan

Date: 22/06/2016

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM2 (Harbourside)
 Calibrated by : K.T.Ho
 Date : 16/08/2016

Sampler

Model : TE-5170
 Serial Number : S/N 8919

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 14 Mar 2016
 Slope (m) : 2.10326
 Intercept (b) : -0.06696
 Correlation Coefficient(r) : 0.99989

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008
 Ta(K) : 303

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.2	3.455	1.675	60	59.36
2 13 holes	9.2	3.001	1.458	52	51.44
3 10 holes	7.2	2.654	1.294	44	43.53
4 7 holes	4.6	2.122	1.041	34	33.64
5 5 holes	2.6	1.595	0.790	24	23.74

Notes: $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$, $X = Z/m - b$, $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship

Slope(m): 40.647 Intercept(b): -8.533 Correlation Coefficient(r): 0.9994

Checked by: 
 Magnum Fan

Date: 23/08/2016



SIBATA SCIENTIFIC TECHNOLOGY LTD.

1-1-62, Nakane, Soka, Saitama, 340-0005 Japan

TEL : 048-933-1582 FAX : 048-933-1591

CALIBRATION CERTIFICATE

Date: October 7, 2015

Equipment Name	: Digital Dust Indicator, Model LD-3B
Code No.	: 080000-42
Quantity	: 1 unit
Serial No.	: 245834
Sensitivity	: 0.001 mg/m ³
Sensitivity Adjustment	: 710CPM
Scale Setting	: October 2, 2015

We hereby certify that the above mentioned instrument has been calibrated satisfactory.

· Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Shintaro Okamura

Shintaro Okamura

Overseas Sales Division

TEST CERTIFICATE

Report No. 15-1461

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.



SIBATA SCIENTIFIC TECHNOLOGY LTD.
DATE 05/October /2015

APPROVED BY	VERIFIED BY	ISSUED BY

PRODUCT NAME	: Digital Dust Indicator
MODEL NUMBER	: LD--3B
SERIAL NUMBER	: 245834
CALIBRATION DATE	: 02-October-2015

Testing Category	Judging Standard	Judgment	
Function Test	Switch, Display, Wiring will normally function	OK	
Sensitivity Calibration	Count is $\pm 2\%$ accurate to the master by the standard calibration particle	Reading of Master	Correction
		797 CPM	-0.6 %
		2068 CPM	-1.4 %
		1038 CPM	+0.4 %
Dust Concentration Measuring	Count is $\pm 10\%$ accurate to the master under the 3 different concentration.	532 CPM	+1.1 %
		OK	
Stability	The maximum value of the sensitivity adjustment scale setting value of the machine and the difference with minimum value are within 5% compared with the maximum value. (The measurement is repeated three times for one minute.)	OK	
		Reference Value(S)	
		710 CPM	Test atmosphere
		Temperature	Humidity
		23 °C	60 %
Synthetic Judgment		Good	



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELAND, OH
 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 14, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
 Operator Tisch Orifice I.D. - 2454 Pa (mm) - 745.49

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4020	3.2	2.00
2	NA	NA	1.00	1.0060	6.4	4.00
3	NA	NA	1.00	0.9010	7.9	5.00
4	NA	NA	1.00	0.8590	8.8	5.50
5	NA	NA	1.00	0.7090	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9866	0.7037	1.4078	0.9957	0.7102	0.8896
0.9824	0.9765	1.9909	0.9914	0.9855	1.2581
0.9803	1.0880	2.2259	0.9893	1.0980	1.4066
0.9792	1.1399	2.3345	0.9882	1.1504	1.4753
0.9738	1.3735	2.8155	0.9828	1.3862	1.7792
Qstd slope (m) = 2.10326			Qa slope (m) = 1.31703		
intercept (b) = -0.06696			intercept (b) = -0.04232		
coefficient (r) = 0.99989			coefficient (r) = 0.99989		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}
 Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C162665
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-1067) Date of Receipt / 收件日期 : 12 May 2016

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00131627
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 May 2016

TEST RESULTS / 測試結果

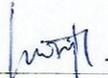
The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA
- Rohde & Schwarz Laboratory, Germany

Tested By
測試

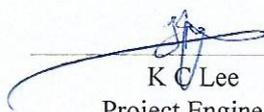
:


H T Wong

Technical Officer

Certified By
核證

:


K C Lee

Project Engineer

Date of Issue
簽發日期

:

20 May 2016

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Page 1 of 3

Certificate of Calibration

校正證書

Certificate No. : C162665

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C160077
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

<u>UUT Setting</u>				<u>Applied Value</u>		<u>UUT Reading (dB)</u>	<u>IEC 61672 Class 1 Spec. (dB)</u>
<u>Range (dB)</u>	<u>Function</u>	<u>Frequency Weighting</u>	<u>Time Weighting</u>	<u>Level (dB)</u>	<u>Freq. (kHz)</u>		
30 - 130	L _A	A	Fast	94.00	1	93.7	± 1.1

- 6.1.2 Linearity

<u>UUT Setting</u>				<u>Applied Value</u>		<u>UUT Reading (dB)</u>
<u>Range (dB)</u>	<u>Function</u>	<u>Frequency Weighting</u>	<u>Time Weighting</u>	<u>Level (dB)</u>	<u>Freq. (kHz)</u>	
30 - 130	L _A	A	Fast	94.00	1	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

- 6.2 Time Weighting

<u>UUT Setting</u>				<u>Applied Value</u>		<u>UUT Reading (dB)</u>	<u>IEC 61672 Class 1 Spec. (dB)</u>
<u>Range (dB)</u>	<u>Function</u>	<u>Frequency Weighting</u>	<u>Time Weighting</u>	<u>Level (dB)</u>	<u>Freq. (kHz)</u>		
30 - 130	L _A	A	Fast	94.00	1	93.7	Ref.
			Slow				

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C162665
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L _A	A	Fast	94.00	63 Hz	67.5	-26.2 ± 1.5
					125 Hz	77.5	-16.1 ± 1.5
					250 Hz	85.0	-8.6 ± 1.4
					500 Hz	90.4	-3.2 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	94.9	+1.2 ± 1.6
					4 kHz	94.7	+1.0 ± 1.6
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.3	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L _C	C	Fast	94.00	63 Hz	67.4	-0.8 ± 1.5
					125 Hz	77.5	-0.2 ± 1.5
					250 Hz	85.0	0.0 ± 1.4
					500 Hz	90.4	0.0 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	94.9	-0.2 ± 1.6
					4 kHz	94.7	-0.8 ± 1.6
					8 kHz	92.6	-3.0 (+2.1 ; -3.1)
					12.5 kHz	89.3	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 06946

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C163248
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-1307) Date of Receipt / 收件日期 : 10 June 2016

Description / 儀器名稱 : Sound Level Calibrator
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10997142
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

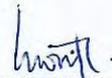
DATE OF TEST / 測試日期 : 15 June 2016

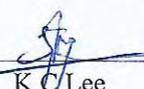
TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By : 
測試 : _____
H T Wong
Technical Officer

Certified By : 
核證 : _____
K C Lee
Project Engineer

Date of Issue : 17 June 2016
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C163248
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C153519
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.7	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.985	1 kHz $\pm 2\%$	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

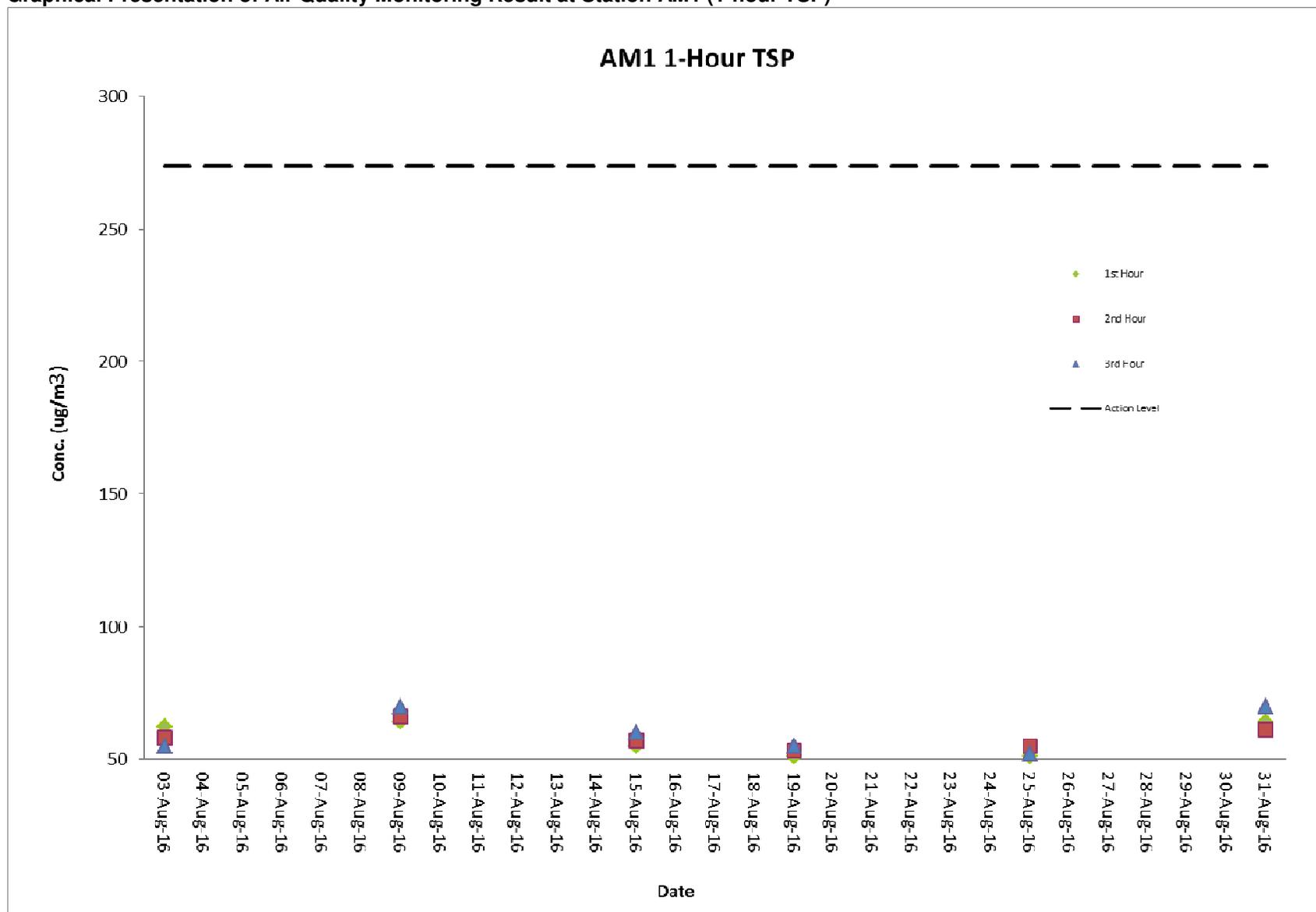
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

G. Graphical Plots of the Monitoring Results

Air Quality Monitoring Result at Station AM1 (1-hour TSP)

Date	Weather Condition	Time	Conc. ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1 st Hour	2 nd Hour	3 rd Hour		
03-Aug-16	Cloudy	10:45 - 16:00	62	58	55	273.7	500
09-Aug-16	Sunny	10:21 - 16:00	64	66	70	273.7	500
15-Aug-16	Cloudy	10:40 - 16:00	55	57	60	273.7	500
19-Aug-16	Fine	8:04 - 11:04	51	53	55	273.7	500
25-Aug-16	Sunny	10:47 - 16:00	51	55	52	273.7	500
31-Aug-16	Fine	10:30 - 16:00	64	61	70	273.7	500

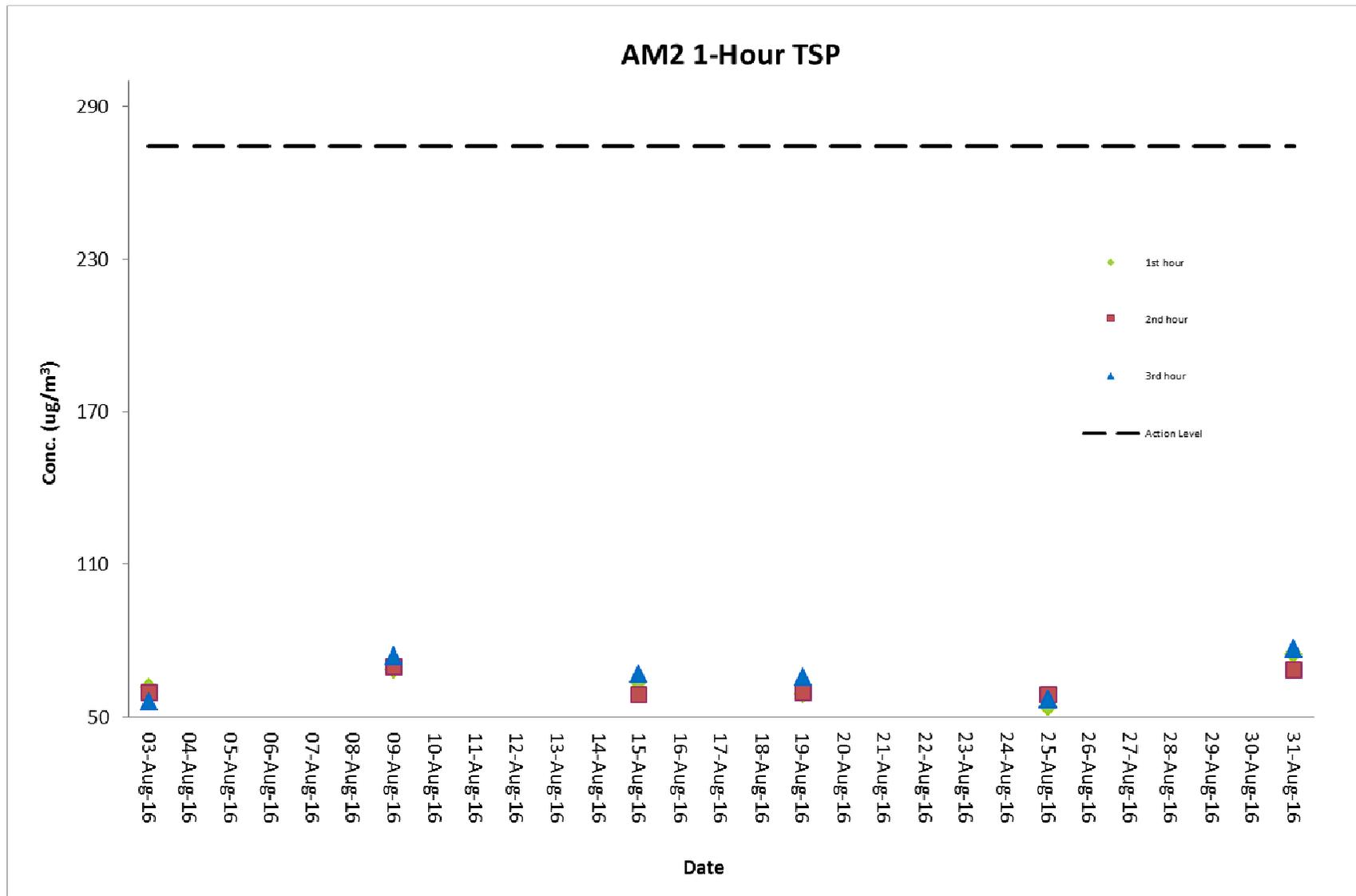
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



Air Quality Monitoring Result at Station AM2 (1-hour TSP)

Date	Weather Condition	Time	Conc. ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1 st Hour	2 nd Hour	3 rd Hour		
03-Aug-16	Cloudy	10:53 - 16:10	62	60	56	274.2	500
09-Aug-16	Sunny	10:33 - 16:10	69	70	74	274.2	500
15-Aug-16	Cloudy	10:52 - 16:10	64	59	67	274.2	500
19-Aug-16	Fine	8:14 - 11:14	59	60	66	274.2	500
25-Aug-16	Sunny	10:57 - 16:10	54	59	57	274.2	500
31-Aug-16	Fine	10:42 - 16:10	75	69	77	274.2	500

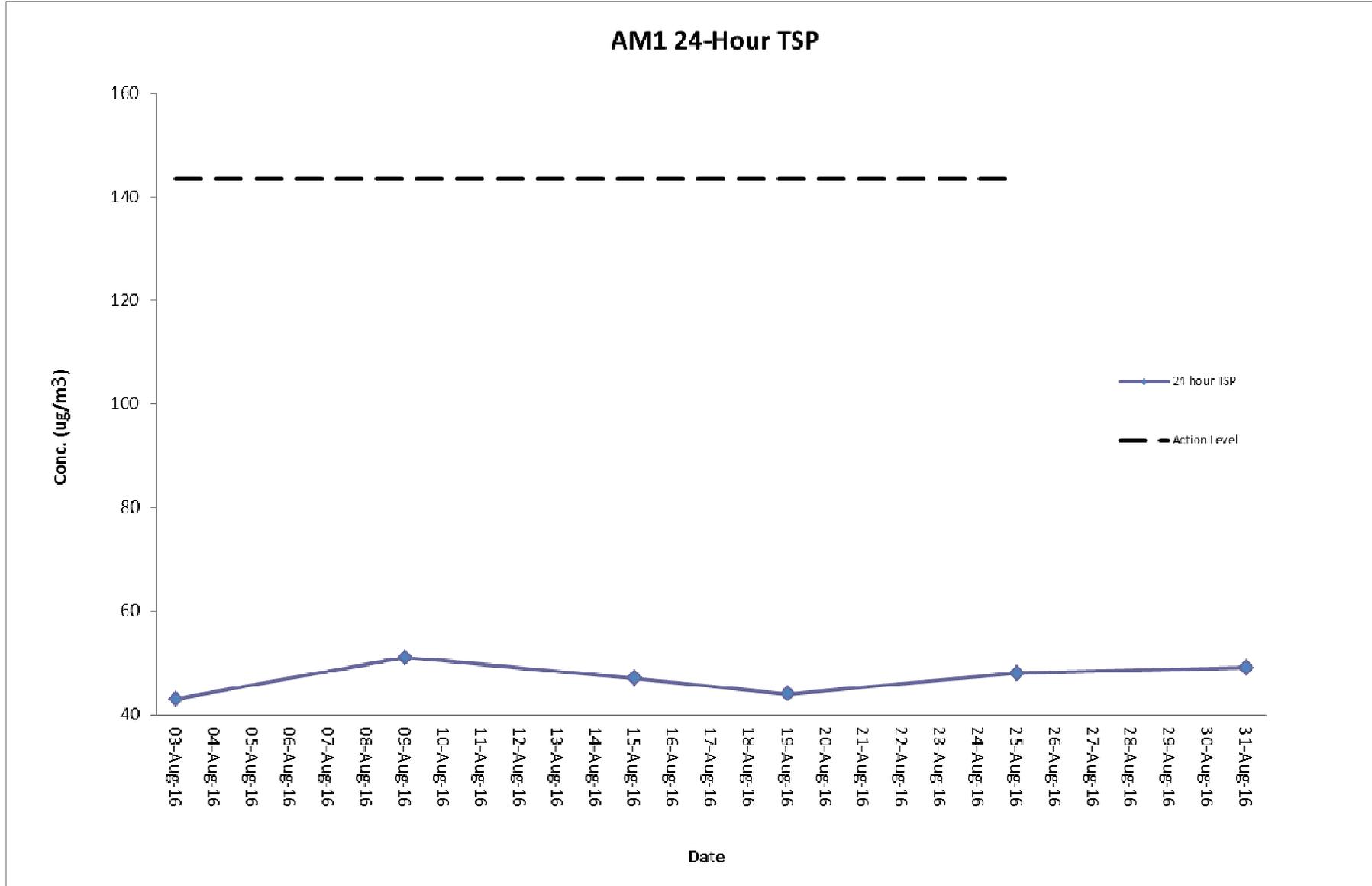
Graphical Presentation of Air Quality Monitoring Result at Station AM2 (1-hour TSP)



Air Quality Monitoring Result at Station AM1 (24-hour TSP)

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			Conc. (µg/m ³)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
03-Aug-16	10:43	04-Aug-16	10:43	2.8156	2.8917	19524.38	19548.38	24	1.24	1.24	1.24	43	Cloudy	143.6	260
09-Aug-16	10:23	10-Aug-16	10:23	2.8094	2.9002	19848.38	19872.38	24	1.24	1.24	1.24	51	Sunny	143.6	260
15-Aug-16	10:42	16-Aug-16	10:42	2.8117	2.8922	19872.38	19896.38	24	1.24	1.24	1.24	45	Cloudy	143.6	260
19-Aug-16	08:00	20-Aug-16	08:00	2.816	2.8927	19896.38	19920.38	24	1.2	1.2	1.2	44	Fine	143.6	260
25-Aug-16	10:45	26-Aug-16	10:45	2.7944	2.8771	19920.38	19944.38	24	1.2	1.2	1.2	48	Sunny	143.6	260
31-Aug-16	10:32	01-Sep-16	10:32	2.787	2.8711	19944.38	19968.38	24	1.2	1.2	1.2	49	Fine	143.6	260

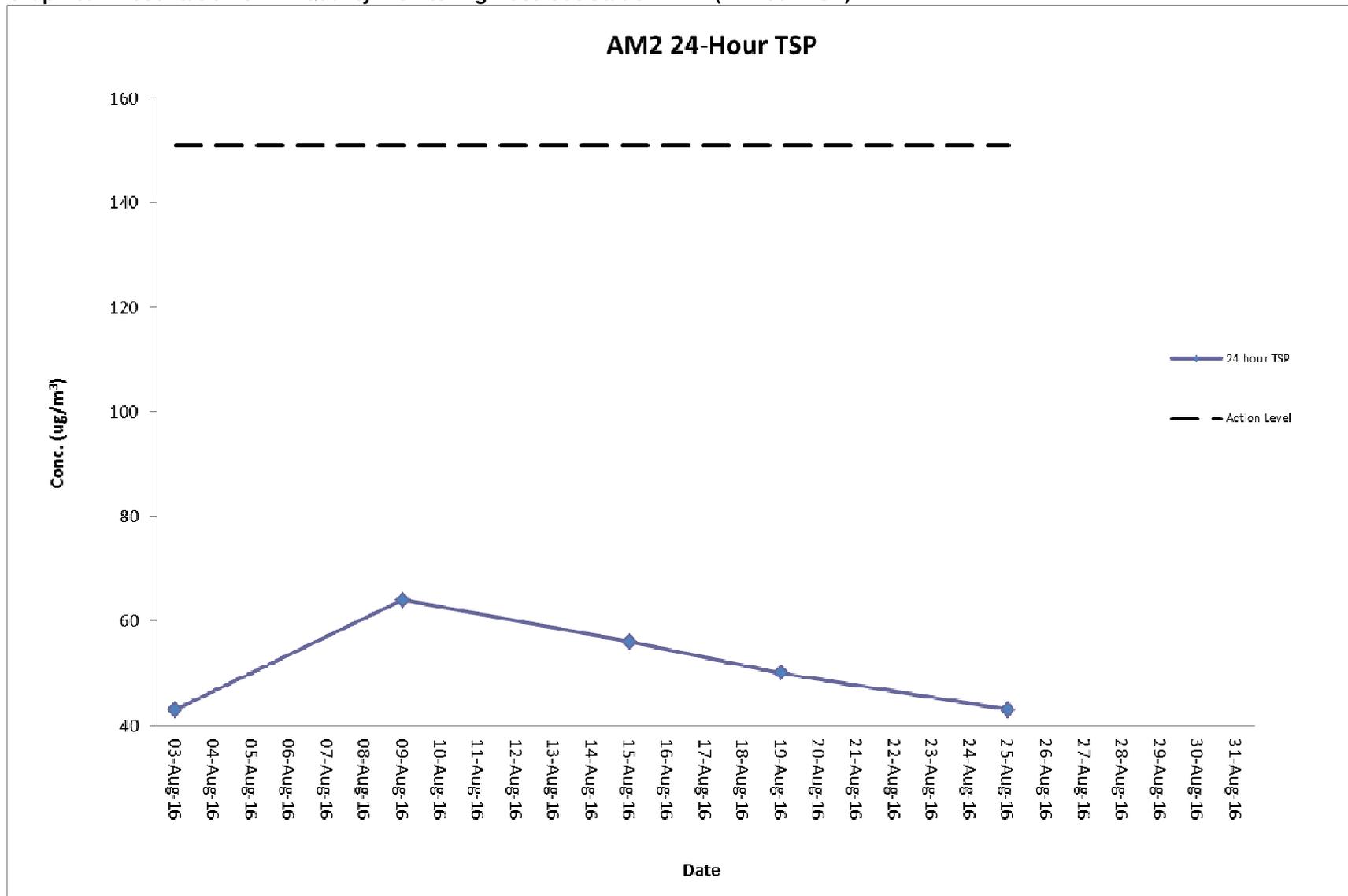
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



Air Quality Monitoring Result at Station AM2 (24-hour TSP)

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			Conc. (µg/m ³)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
03-Aug-16	10:55	04-Aug-16	10:55	2.8185	2.8972	15527.59	15551.59	24	1.28	1.28	1.28	43	Cloudy	151.1	260
09-Aug-16	10:35	10-Aug-16	10:35	2.8229	2.9411	15551.59	15575.59	24	1.28	1.28	1.28	64	Sunny	151.1	260
15-Aug-16	10:54	16-Aug-16	10:54	2.8216	2.9221	15575.59	15599.59	24	1.24	1.24	1.24	56	Cloudy	151.1	260
19-Aug-16	08:18	20-Aug-16	08:18	2.809	2.8979	15599.59	15623.59	24	1.24	1.24	1.24	50	Fine	151.1	260
25-Aug-16	11:00	26-Aug-16	11:00	2.7893	2.8669	15623.59	15647.59	24	1.24	1.24	1.24	43	Sunny	151.1	260
31-Aug-16		01-Sep-16		Suspended due to Electricity Issue										151.1	260

Graphical Presentation of Air Quality Monitoring Result at Station AM2 (24-hour TSP)



Noise Monitoring Result at Station NM1A

Date	Time	Measured L ₁₀ dB(A)	Measured L ₉₀ dB(A)	L _{eq} (30 min.) dB(A)
02-Aug-16	14:00	68.7	64.1	69.2
02-Aug-16	14:05	69.0	65.0	
02-Aug-16	14:10	68.8	64.2	
02-Aug-16	14:15	67.9	63.9	
02-Aug-16	14:20	66.7	62.7	
02-Aug-16	14:25	67.9	63.4	
09-Aug-16	14:00	68.7	64.5	69.2
09-Aug-16	14:05	67.9	63.1	
09-Aug-16	14:10	67.1	63.4	
09-Aug-16	14:15	68.2	64.5	
09-Aug-16	14:20	68.8	64.2	
09-Aug-16	14:25	67.9	63.9	
15-Aug-16	14:00	68.2	63.7	68.7
15-Aug-16	14:05	67.6	63.4	
15-Aug-16	14:10	67.9	63.5	
15-Aug-16	14:15	66.8	62.9	
15-Aug-16	14:20	68.0	63.9	
15-Aug-16	14:25	67.9	63.2	
25-Aug-16	14:00	68.9	64.1	69.0
25-Aug-16	14:05	67.4	63.2	
25-Aug-16	14:10	66.7	62.9	
25-Aug-16	14:15	68.2	64.7	
25-Aug-16	14:20	67.7	63.8	
25-Aug-16	14:25	68.4	64.0	
31-Aug-16	14:00	68.4	63.1	69.1
31-Aug-16	14:05	67.9	62.9	
31-Aug-16	14:10	68.8	64.7	
31-Aug-16	14:15	68.2	63.8	
31-Aug-16	14:20	68.6	64.1	

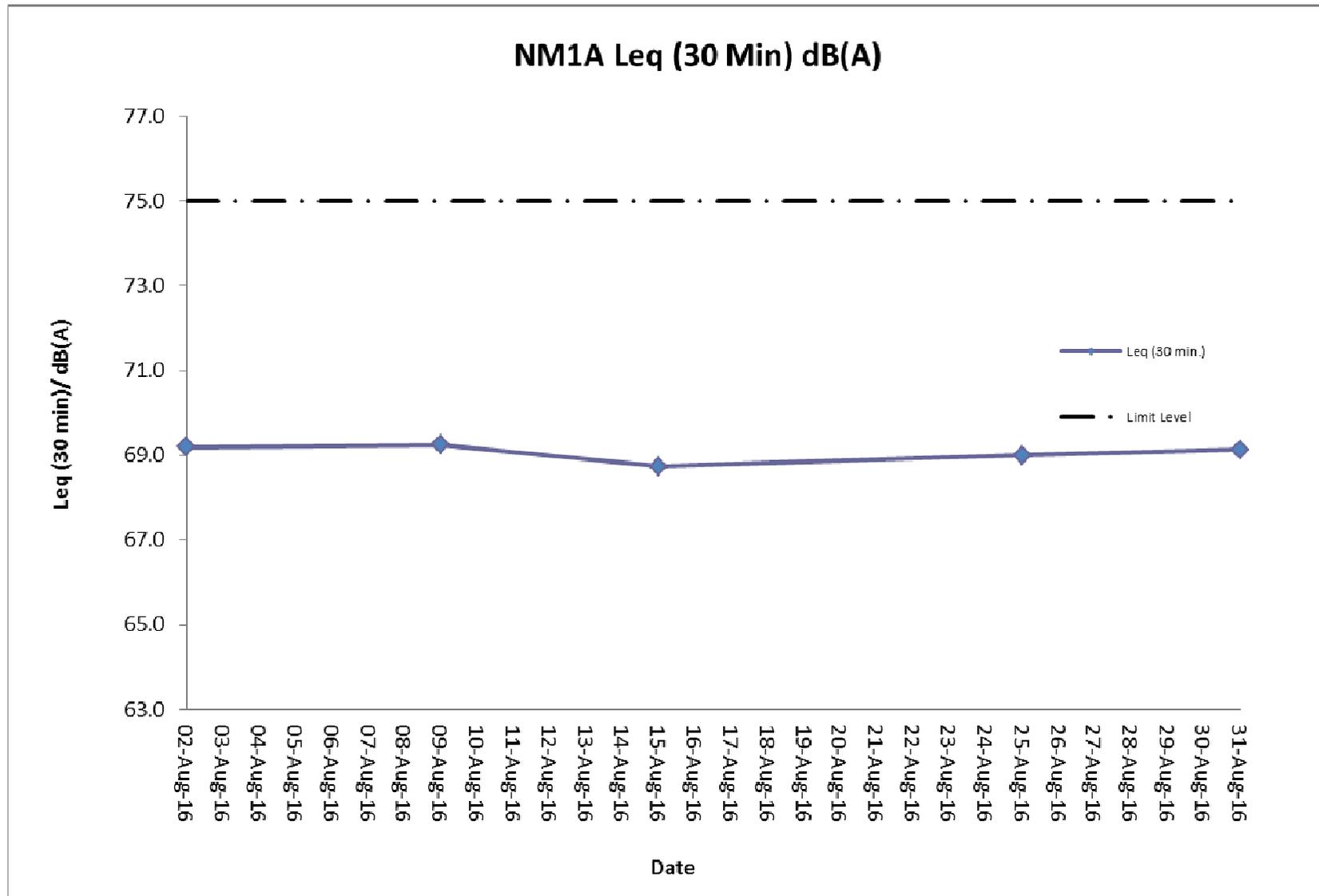
Remarks:

+3dB (A) correction was applied to free-field measurement.



The station set-up of a free-field measurement at Station NM1A.

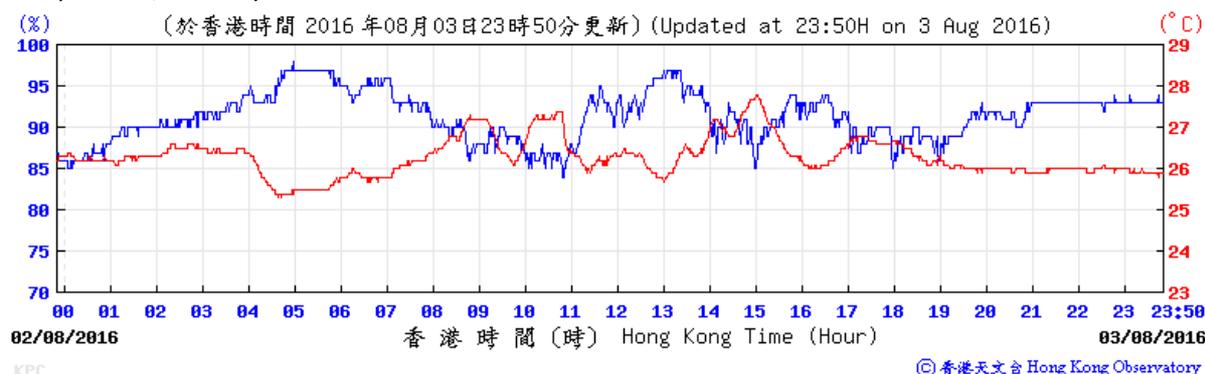
Graphical Presentation Noise Monitoring Result at Station NM1A



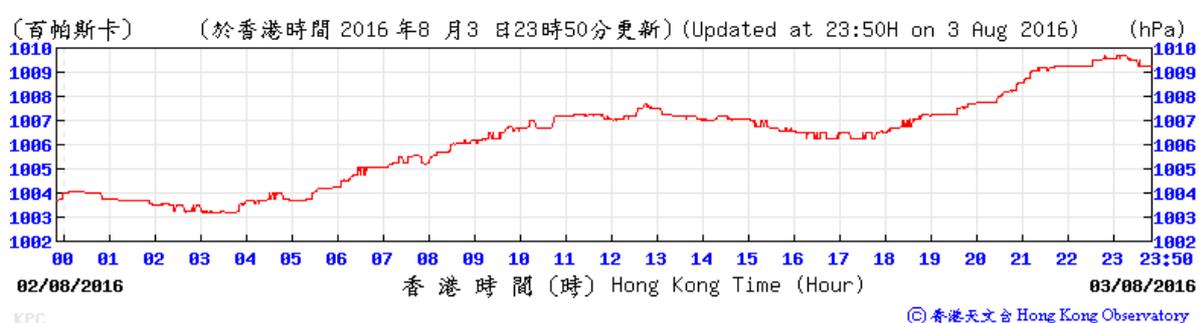
H. Meteorological Data Extracted from Hong Kong Observatory

Table H-1: Extract of Meteorological Observations for King's Park Automatic Weather Station, August 2016

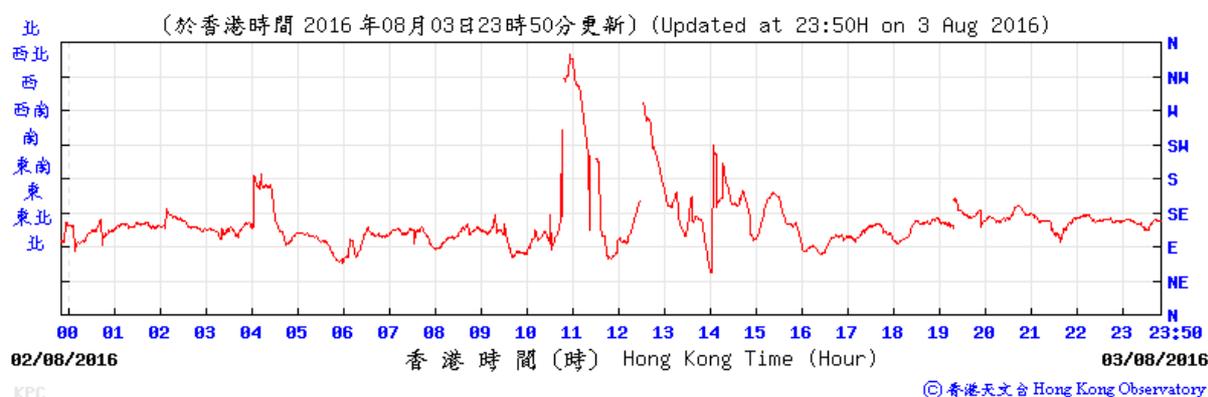
Temperature/Humidity:



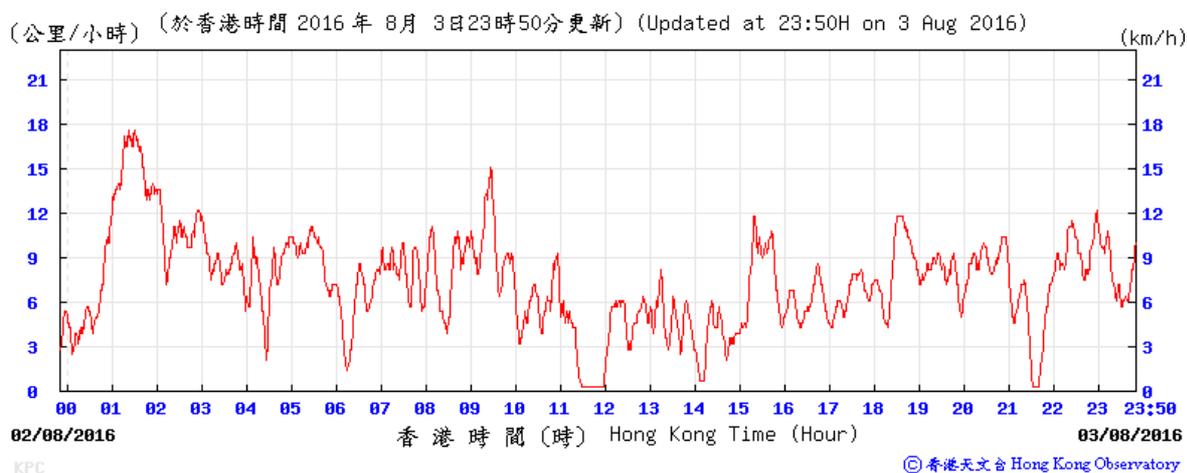
Pressure:



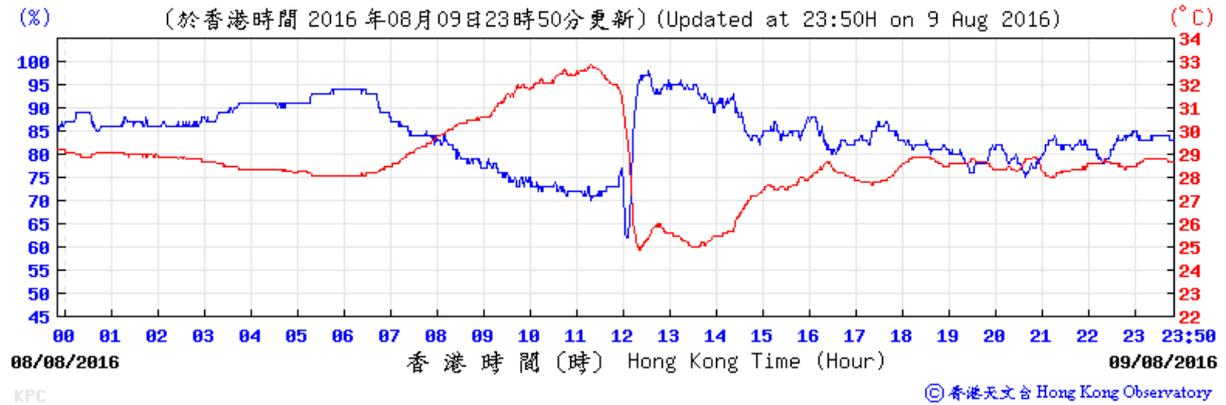
Wind Direction:



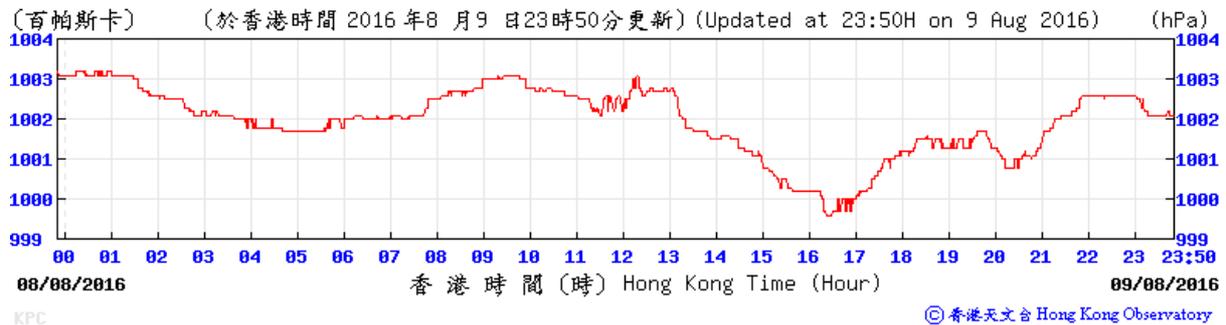
Wind Speed:



Temperature/Humidity:



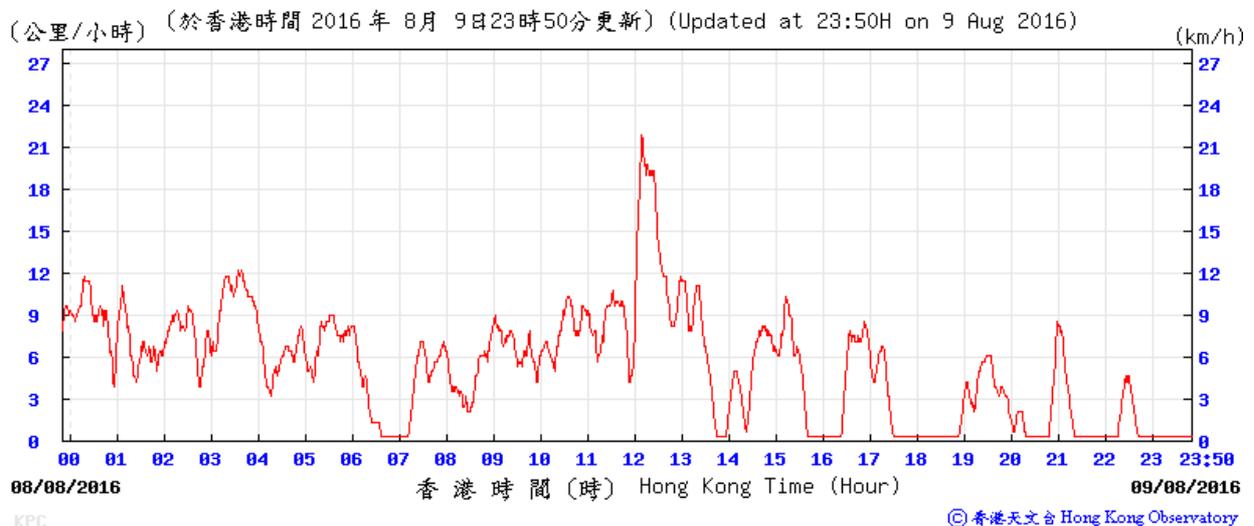
Pressure:



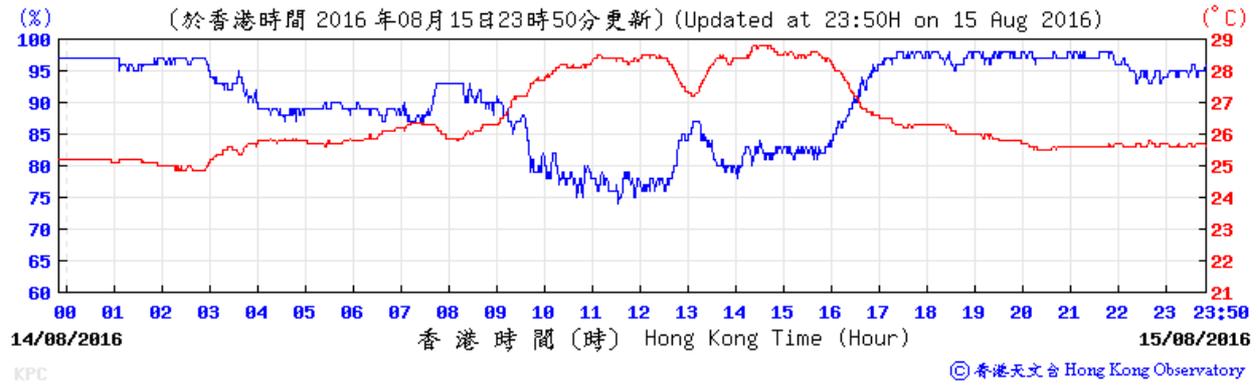
Wind Direction:



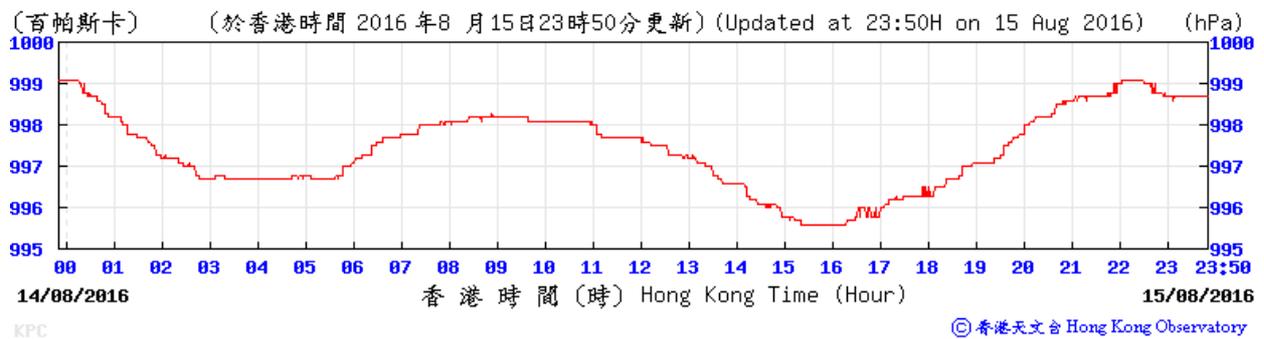
Wind Speed:



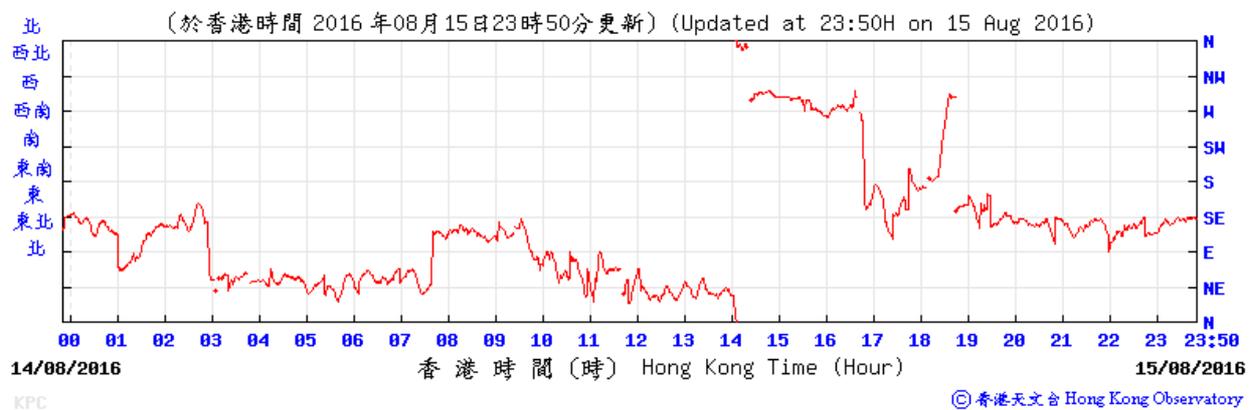
Temperature/Humidity:



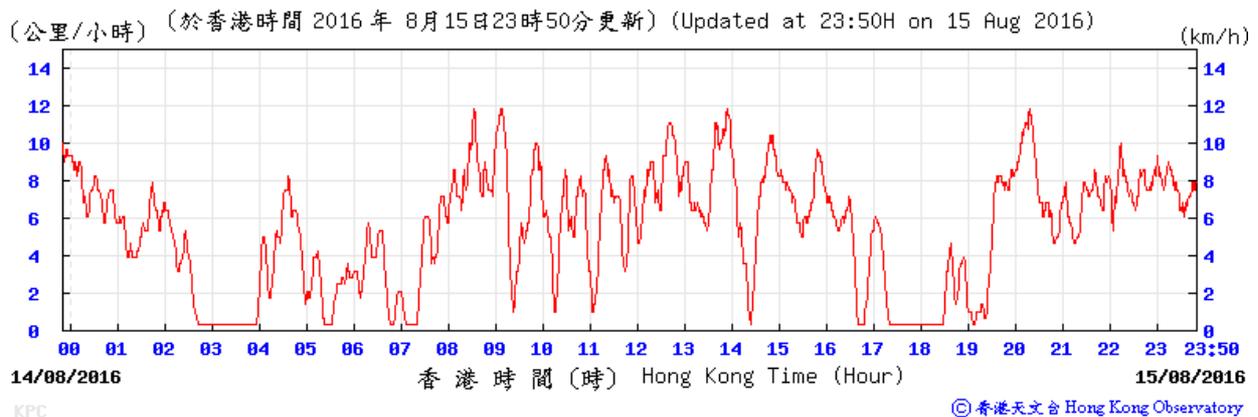
Pressure:



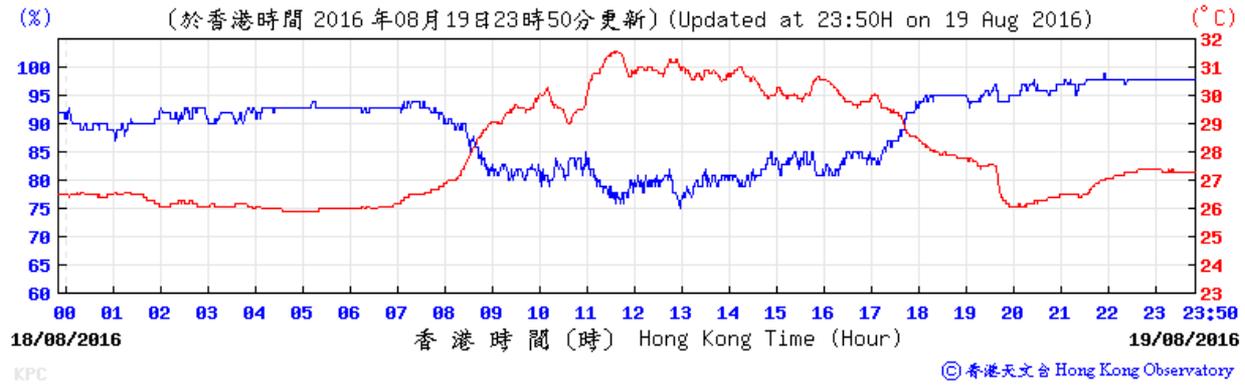
Wind Direction:



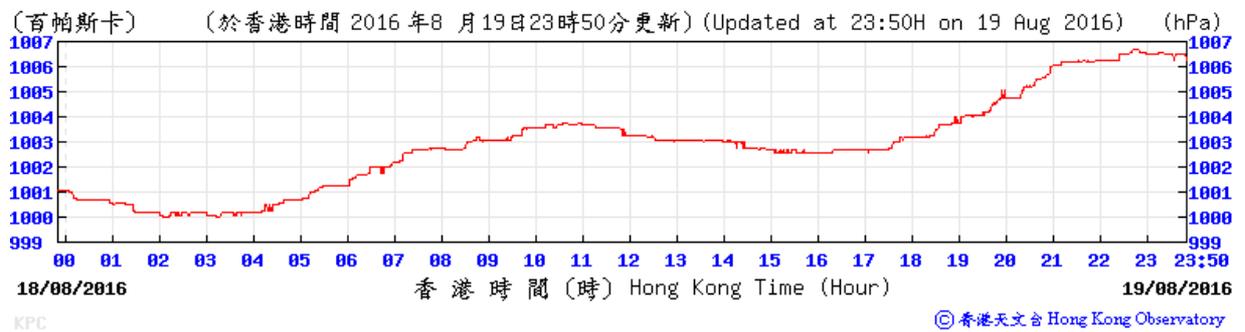
Wind Speed:



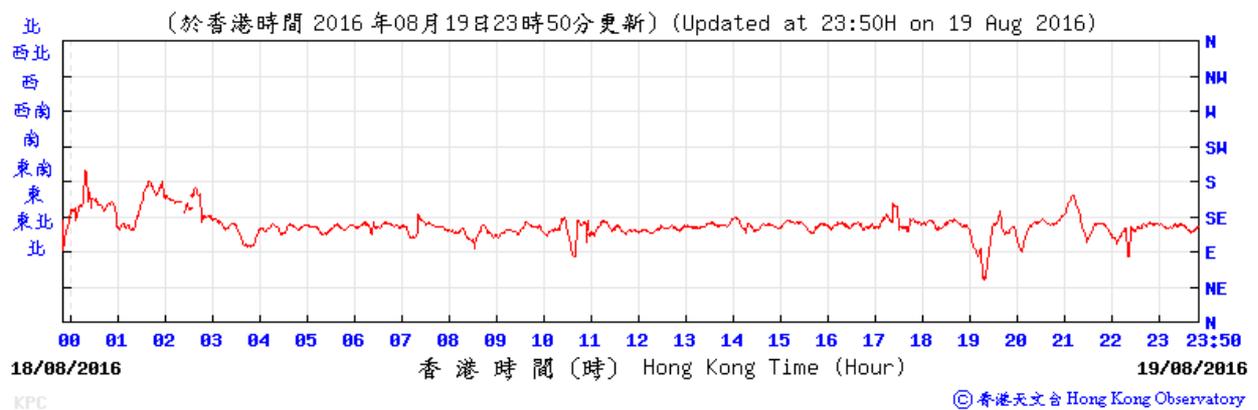
Temperature/Humidity:



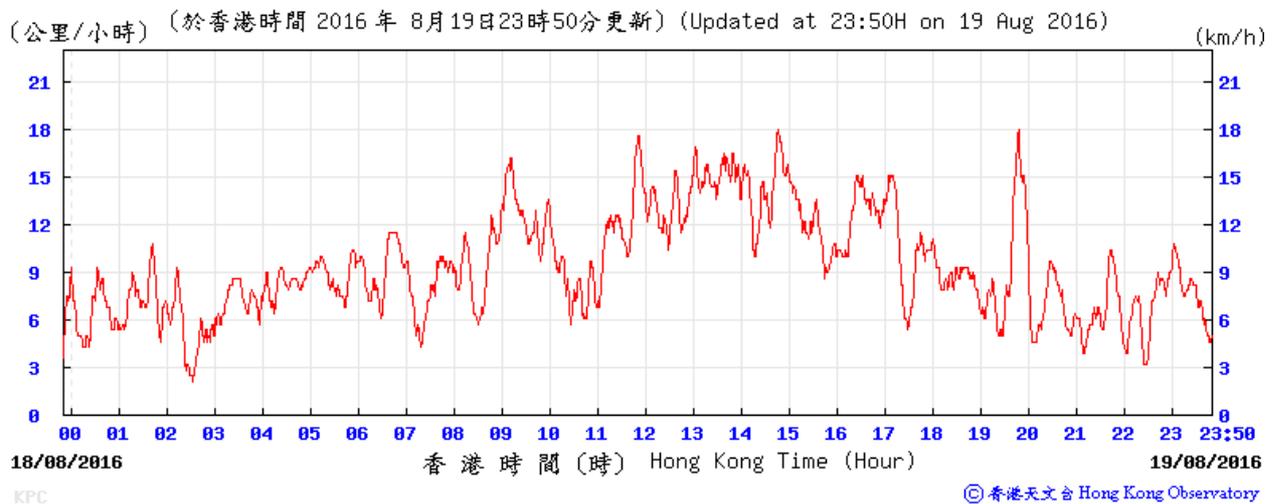
Pressure:



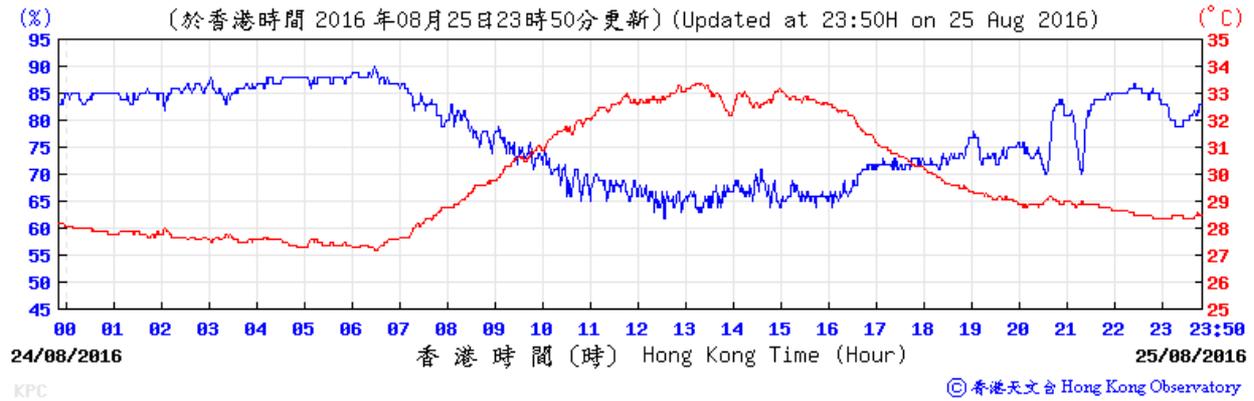
Wind Direction:



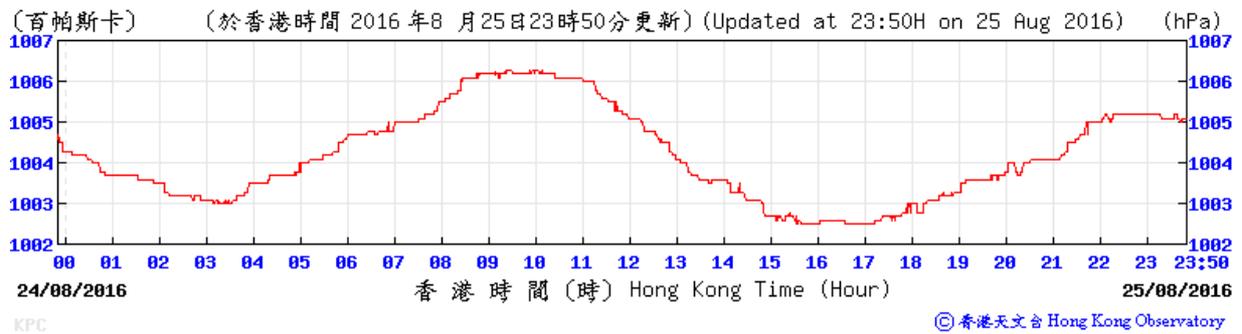
Wind Speed:



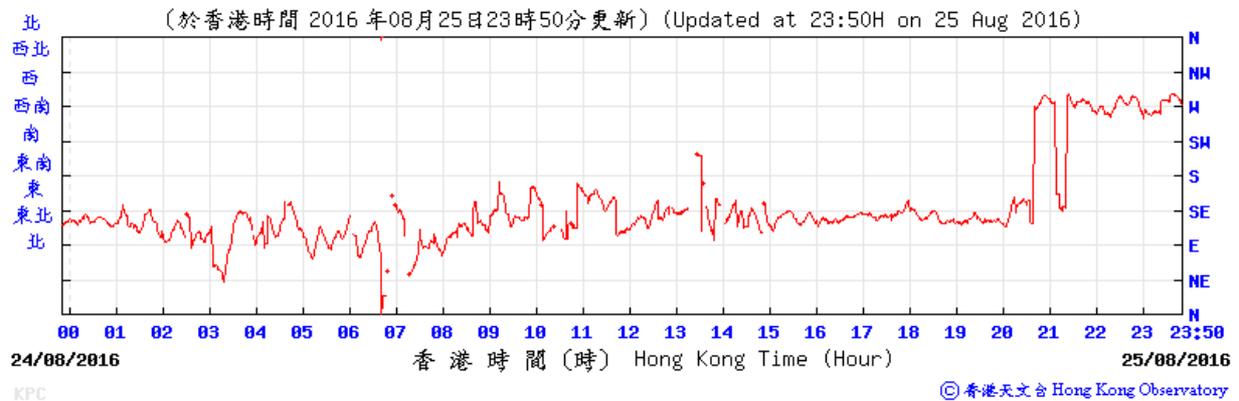
Temperature/Humidity:



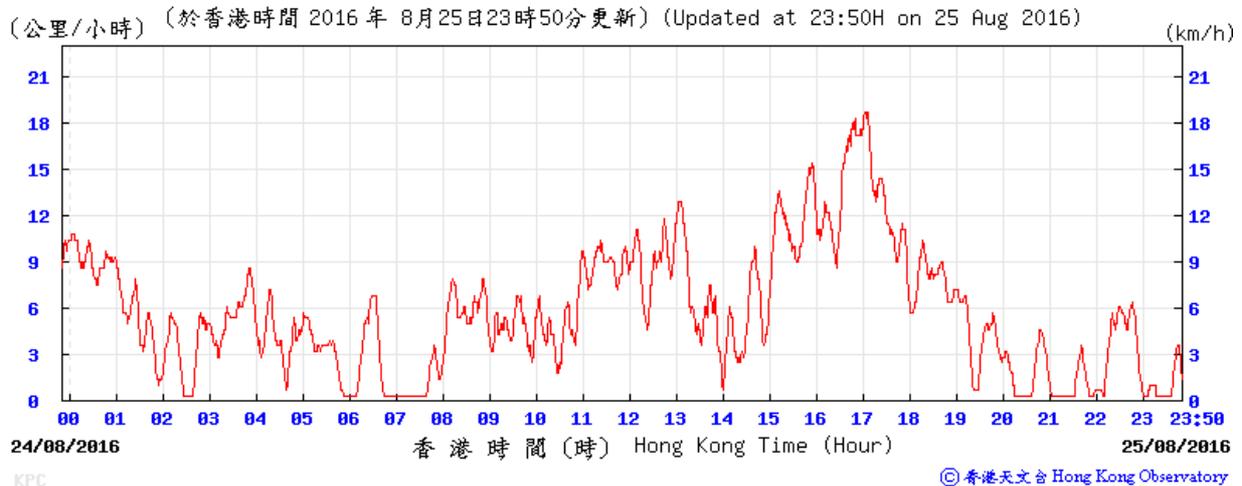
Pressure:



Wind Direction:



Wind Speed:



Meteorological data for 31 August 2016 was not available.

I. Waste Flow table

M+ Museum

Table I-1: Monthly Waste Flow Table for M+ Museum

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2015													
Nov	46607.4	0.0	0.0	8240.0	38367.4	0.0	0.0	76.2	0.0	0.0	0.0	0.0	67.6
Dec	29652.9	0.0	0.0	29621.4	31.5	0.0	0.0	26.3	0.0	0.0	0.0	1.0	66.0
Sub-total (2015)	76260.3	0.0	0.0	37861.4	38398.9	0.0	0.0	102.5	0.0	0.0	0.0	1.0	133.6
2016													
Jan	21077.4	0.0	6352.0	14576.0	149.4	0.0	0.0	18.8	0.0	0.0	0.0	0.0	23.2
Feb	7626.2	0.0	3424.0	4048.0	154.2	0.0	0.0	59.8	0.0	0.0	0.0	0.0	20.5
Mar	10442.5	0.0	1600.0	7888.0	954.5	0.0	0.0	29.7	0.0	0.0	0.0	0.0	46.3
Apr	30413.2	0.0	6352.0	23408.0	653.2	0.0	0.0	25.8	0.1	0.0	27.8	0.0	34.5
May	24083.5	0.0	112.0	23216.0	755.5	0.0	0.0	61.5	0.4	0.0	33.6	0.0	62.3
Jun	7880.1	0.0	4736.0	2384.0	760.1	0.0	0.0	106.6	0.1	0.0	14.6	0.0	52.8
Jul	5893.1	0.0	2656.0	2240.0	997.1	0.0	0.0	77.6	0.0	0.0	33.6	0.0	83.1
Aug	13709.6	0.0	0.0	12432.0	1277.6	0.0	0.0	111.3	0.3	0.0	38.5	0.0	104.9
Sep													
Oct													
Nov													
Dec													
Sub-total (2016)	121125.5	0.0	25232.0	90192.0	5701.5	0.0	0.0	491.1	0.9	0.0	148.1	0.0	427.7
Total	197385.8	0.0	25232.0	128053.4	44100.4	0.0	0.0	593.6	0.9	0.0	148.1	1.0	561.3

Note:
 -219.23 ton and 1058.34 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively in the reporting month.

-For inert C&D materials reused in other projects, the projects refer to (1) Green Valley; (2) Advance Works for Shek Wu Hui Sewage Treatment Works (3) Design and Construction of Kai Tak Cable Tunnel, CLP; (4) MTR Contract 1002 Whampoa Station and Overrun Tunnel; (5) CEDD Tuen Mun Area 54 Contract No. CV/2015/03; (6) Union Construction Ltd.'s site; (7) Foundation Works at Marriot Hotel at Ocean Park.

Lyric Theatre Complex

Table I-2: Monthly Waste Flow Table for Lyric Theatre Complex

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2016													
Mar	2702.1	0.0	0.0	0.0	2702.1	0.0	0.0	4.5	0.1	0.0	0.0	0.0	30.6
Apr	8631.5	0.0	0.0	0.0	8631.5	0.0	0.0	16.0	0.0	0.0	0.0	0.0	19.2
May	12487.8	0.0	0.0	0.0	12487.8	0.0	0.0	34.0	0.0	0.0	0.0	0.7	60.5
Jun	8600.8	0.0	0.0	0.0	8600.8	0.0	0.0	31.4	0.1	0.0	0.0	0.5	13.5
Jul	12624.2	0.0	0.0	0.0	12624.2	0.0	0.0	19.6	0.0	0.0	0.0	2.0	9.9
Aug	14419.9	0.0	0.0	0.0	14419.9	0.0	0.0	43.9	0.0	0.0	0.0	0.0	11.1
Sep	0.0												
Oct	0.0												
Nov	0.0												
Dec	0.0												
Sub-total (2016)	59466.3	0.0	0.0	0.0	59466.3	0.0	0.0	149.3	0.2	0.0	0.0	3.2	144.8
2017													
Jan	0.0												
Feb	0.0												
Mar	0.0												
Apr	0.0												
May	0.0												
Jun	0.0												
Sub-total (2017)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	59466.3	0.0	0.0	0.0	59466.3	0.0	0.0	149.3	0.2	0.0	0.0	3.2	144.8

Note:
 -2631.8 ton and 11788.1 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 respectively in the reporting month.

J. Environmental Mitigation Measures – Implementation Status

Table J-1: Environmental Mitigation Measures Implementation Status

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
Air Quality Impact (Construction)			
2.1 & 10.3.1	<p>General Dust Control Measures</p> <p>Frequent water spraying for active construction areas (12 times a day or once every one hour), including Heavy construction activities such as construction of buildings or roads, drilling, ground excavation, cut and fill operations (i.e., earth moving)</p>	Obs	Obs
2.1 & 10.3.1	<p>Best Practice For Dust Control</p> <p>The relevant best practices for dust control as stipulated in the Air Pollution Control (construction Dust) Regulation should be adopted to further reduce the construction dust impacts from the Project. These best practices include:</p> <p><i>Good Site Management</i></p> <ul style="list-style-type: none"> Good site management is important to help reducing potential air quality impact down to an acceptable level. As a general guide, the Contractor should maintain high standard of housekeeping to prevent emission of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning. <p><i>Disturbed Parts of the Roads</i></p> <ul style="list-style-type: none"> Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet. <p><i>Exposed Earth</i></p> <ul style="list-style-type: none"> Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies. <p><i>Loading, Unloading or Transfer of Dusty Materials</i></p> <ul style="list-style-type: none"> All dusty materials should be sprayed with water immediately prior to any loading or transfer operation 	<p>✓</p> <p>✓</p> <p>✓</p> <p>N/A</p> <p>✓</p>	<p>Rem</p> <p>✓</p> <p>✓</p> <p>N/A</p> <p>✓</p>

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	so as to keep the dusty material wet.		
	<i>Debris Handling</i>		
	<ul style="list-style-type: none"> Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides. 	✓	✓
	<ul style="list-style-type: none"> Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped. 	✓	✓
	<i>Transport of Dusty Materials</i>		
	<ul style="list-style-type: none"> Vehicle used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards. 	✓	✓
	<i>Wheel washing</i>		
	<ul style="list-style-type: none"> Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels. 	Obs	✓
	<i>Use of vehicles</i>		
	<ul style="list-style-type: none"> The speed of the trucks within the site should be controlled to about 10km/hour in order to reduce adverse dust impacts and secure the safe movement around the site. 	✓	✓
	<ul style="list-style-type: none"> Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels. 	✓	✓
	<ul style="list-style-type: none"> Where a vehicle leaving the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle. 	✓	✓
	<i>Site hoarding</i>		
	<ul style="list-style-type: none"> Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit. 	✓	✓
2.1 & 10.3.1	<p>Best Practicable Means for Cement Works (Concrete Batching Plant)</p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93) should be followed and implemented to further reduce the construction dust impacts of the Project. These best practices include:</p> <p>Exhaust from Dust Arrestment Plant</p> <ul style="list-style-type: none"> Wherever possible the final discharge point from particulate matter arrestment plant, where is not 	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	necessary to achieve dispersion from residual pollutants, should be at low level to minimise the effect on the local community in the case of abnormal emissions and to facilitate maintenance and inspection		
	Emission Limits		
	<ul style="list-style-type: none"> All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist or smoke 	N/A	N/A
	Engineering Design/Technical Requirements		
	<ul style="list-style-type: none"> As a general guidance, the loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to prevent the release of visible dust and/or other noxious or offensive emissions 	N/A	N/A
-	<p>Non-Road Mobile Machinery (NRMM):</p> <p>All NRMMs operating on-site which are subject to emission control of Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation are approved/exempted (as the case may be) and affixed with the requisite approval/exemption labels.</p>	✓	✓
Noise Impact (Construction)			
3.1 & 10.4.1	<p>Good Site Practice</p> <p>Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:</p> <ul style="list-style-type: none"> only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works; machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs; mobile plant should be sited as far away from NSRs as possible; and material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities. 	✓	Obs
		✓	✓
		✓	✓
		✓	✓
		✓	✓
3.1 & 10.4.1	<p>Adoption of Quieter PME</p> <p>The recommended quieter PME adopted in the assessment were taken from the EPD's QPME Inventory and "Sound Power Levels of Other Commonly Used PME" are presented in Table 4.26 in the EIA report. It</p>	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	should be noted that the silenced PME selected for assessment can be found in Hong Kong.		
3.1 & 10.4.1	Use of Movable Noise Barriers Movable noise barriers can be very effective in screening noise from particular items of plant when constructing the Project. Noise barriers located along the active works area close to the noise generating component of a PME could produce at least 10 dB(A) screening for stationary plant and 5 dB(A) for mobile plant provided the direct line of sight between the PME and the NSRs is blocked.	✓	✓
3.1 & 10.4.1	Use of Noise Enclosure/ Acoustic Shed The use of noise enclosure or acoustic shed is to cover stationary PME such as air compressor and concrete pump. With the adoption of the noise enclosure, the PME could be completely screened, and noise reduction of 15 dB(A) can be achieved according to the EIAO Guidance Note No.9/2010.	N/A	N/A
3.1 & 10.4.1	Use of Noise Insulating Fabric Noise insulating fabric can also be adopted for certain PME (e.g. drill rig, pilling machine etc). The fabric should be lapped such that there are no openings or gaps on the joints. According to the approved Tsim Sha Tsui Station Northern Subway EIA report (AEIAR-127/2008), a noise reduction of 10 dB(A) can be achieved for the PME lapped with the noise insulating fabric.	✓	✓
3.1 & 10.4.1	Scheduling of Construction Works outside School Examination Periods During construction phase, the contractor should liaise with the educational institutions (including NSRs LCS and CRGPS) to obtain the examination schedule and avoid the noisy construction activities during school examination periods.	N/A	N/A
Water Quality Impact (Construction)			
4.1 & 10.5.1	Construction site runoff and drainage The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts: <ul style="list-style-type: none"> ▪ At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system should be undertaken by the WKCD's Contractor prior to the commencement of construction; ▪ Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the WKCD's Contractor prior to the commencement of construction. 	Rem	Rem
		✓	Obs

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	<ul style="list-style-type: none"> All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times. 	Rem/ Obs	Obs
	<ul style="list-style-type: none"> Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities. 	✓	✓
	<ul style="list-style-type: none"> All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. 	Obs	✓
	<ul style="list-style-type: none"> Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. 	✓	✓
	<ul style="list-style-type: none"> Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and stormwater runoff being directed into foul sewers. 	✓	✓
	<ul style="list-style-type: none"> Precautions should be taken at any time of the year when rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. 	✓	✓
	<ul style="list-style-type: none"> Bentonite slurries used in piling or slurry walling should be reconditioned and reused wherever practicable. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 	N/A	N/A
	<p>Barging facilities and activities</p> <p>Recommendations for good site practices during operation of the proposed barging point include:</p>		
	<ul style="list-style-type: none"> All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel 	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	<p>movement or propeller wash;</p> <ul style="list-style-type: none"> ▪ Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation; ▪ All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and ▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site. 	N/A N/A N/A	N/A N/A N/A
4.1 & 10.5.1	<p>Sewage effluent from construction workforce</p> <p>Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</p>	✓	✓
4.1 & 10.5.1	<p>General construction activities</p> <ul style="list-style-type: none"> ▪ Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used. ▪ Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event. 	Obs Obs	✓ Obs
Waste Management Implications (Construction)			
6.1 & 10.7.1	<p>Good Site Practices</p> <p>Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> ▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site ▪ Training of site personnel in proper waste management and chemical handling procedures ▪ Provision of sufficient waste disposal points and regular collection of waste ▪ Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers ▪ Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust 	✓ ✓ Obs ✓ ✓	✓ ✓ ✓ ✓ ✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	introduction to public roads <ul style="list-style-type: none"> Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the inert or non-inert C&D materials is not anticipated 	✓	✓
6.1 & 10.7.1	Waste Reduction Measures Recommendations to achieve waste reduction include: <ul style="list-style-type: none"> Sort inert C&D material to recover any recyclable portions such as metals Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal Encourage collection of recyclable waste such as waste paper and aluminium cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force Proper site practices to minimise the potential for damage or contamination of inert C&D materials Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste 	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
6.1 & 10.7.1	Inert and Non-inert C&D Materials In order to minimise impacts resulting from collection and transportation of inert C&D material for off-site disposal, the excavated materials should be reused on-site as fill material as far as practicable. In addition, inert C&D material generated from excavation works could be reused as fill materials in local projects that require public fill for reclamation. <ul style="list-style-type: none"> The surplus inert C&D material will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong. Liaison with the CEDD Public Fill Committee (PFC) on the allocation of space for disposal of the inert C&D materials at PFRF is underway. No construction work is allowed to proceed until all issues on management of inert C&D materials have been resolved and all relevant arrangements have been endorsed by the relevant authorities including PFC and EPD. The C&D materials generated from general site clearance should be sorted on site to segregate any inert materials for reuse or disposal of at PFRFs whereas the non-inert materials will be disposed of at the designated landfill site. In order to monitor the disposal of inert and non-inert C&D materials at respectively PFRFs and the designated landfill site, and to control fly-tipping, it is recommended that the Contractor should follow the Technical Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition 	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	Materials issued by Development Bureau. In addition, it is also recommended that the Contractor should prepare and implement a Waste Management Plan detailing their various waste arising and waste management practices in accordance with the relevant requirements of the Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site.		
6.1 & 10.7.1	<p>Chemical Waste</p> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the "Code of Practice on the Packaging Labelling and Storage of Chemical Wastes". Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Potential environmental impacts arising from the handling activities (including storage, collection, transportation and disposal of chemical waste) are expected to be minimal with the implementation of appropriate mitigation measures as recommended. 	Obs	Obs
6.1 & 10.7.1	<p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separated from inert C&D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</p>	✓	✓
Land Contamination (Construction)			
7.1 & 10.8.1	<p>The potential for land contamination issues at the TST Fire Station due to its future relocation will be confirmed by site investigation after land acquisition. Where necessary, mitigation measures for minimising potential exposure to contaminated materials (if any) or remediation measures will be identified. If contaminated land is identified (e.g., during decommissioning of fuel oil storage tanks) after the commencement of works, mitigation measures are proposed in order to minimise the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially contaminated materials.</p> <p>The following measures are proposed for excavation and transportation of contaminated material:</p> <ul style="list-style-type: none"> To minimize the chance for construction workers to come into contact with any contaminated materials, 		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	bulk earth-moving excavation equipment should be employed;	N/A	N/A
	<ul style="list-style-type: none"> ▪ Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when interacting directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site; ▪ Stockpiling of contaminated excavated materials on site should be avoided as far as possible; ▪ The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out; ▪ Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater; ▪ Truck bodies and tailgates should be sealed to stop any discharge; ▪ Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping; ▪ Speed control for trucks carrying contaminated materials should be exercised; ▪ Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and ▪ Maintain records of waste generation and disposal quantities and disposal arrangements. 	N/A	N/A
Ecological Impact (Construction)			
No mitigation measure is required.			
Landscape and Visual Impact (Construction)			
Table 9.1 & 10.8 (CM1)	Trees should be retained in situ on site as far as possible. Should tree removal be unavoidable due to construction impacts, trees will be transplanted or felled with reference to the stated criteria in the Tree Removal Applications to be submitted to relevant government departments for approval in accordance to ETWB TCW No. 29/2004 and 3/2006.	Rem	N/A
Table 9.1 & 10.8 (CM2)	Compensatory tree planting shall be incorporated to the proposed project and maximize the new tree, shrubs and other vegetation planting to compensate tree felled and vegetation removed. Also, implementation of compensatory planting should be of a ratio not less than 1:1 in terms of quality and quantity within the site.	N/A	N/A
Table 9.1 & 10.8 (CM3)	Buffer trees for screening purposes to soften the hard architectural and engineering structures and facilities.	N/A	N/A
Table 9.1 &	Softscape treatments such as vertical green wall panel /planting of climbing and/or weeping plants, etc, to	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
10.8 (CM4)	maximize the green coverage and soften the hard architectural and engineering structures and facilities.		
Table 9.1 & 10.8 (CM5)	Roof greening by means of intensive and extensive green roof to maximize the green coverage and improve aesthetic appeal and visual quality of the building/structure.	N/A	N/A
Table 9.1 & 10.8 (CM6)	Sensitive streetscape design should be incorporated along all new roads and streets.	N/A	N/A
Table 9.1 & 10.8 (CM7)	Structure, ornamental planting shall be provided along amenity strips to enhance the landscape quality.	N/A	N/A
Table 9.1 & 10.8 (CM8)	Landscape design shall be incorporated to architectural and engineering structures in order to provide aesthetically pleasing designs.	N/A	N/A
Table 9.1 (CM9)	Minimize the structure of marine facilities to built on the seabed and foreshore in order to minimize the affected extent to the waterbody	N/A	N/A
Table 9.2 & 10.9 (MCP1)	Use of decorative screen hoarding/boards	✓	✓
Table 9.2 & 10.9 (MCP2)	Early introduction of landscape treatments	N/A	N/A
Table 9.2 & 10.9 (MCP3)	Adoption of light colour for the temporary ventilation shafts for the basement during the transition period.	N/A	N/A
Table 9.2 & 10.9 (MCP4)	Control of night time lighting	✓	✓
Table 9.2 & 10.9 (MCP5)	Use of greenery such as grass cover for the temporary open areas will help achieve the visual balance and soften the hard edges of the structures.	N/A	N/A

N/A - Not Applicable

✓ - Implemented

Obs - Observed

Rem - Reminder

K. Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative statistics for complaints, notifications of summons and successful prosecutions for the Project account for period starting from the date of commencement of construction works (i.e. 31 October 2015 for M+ Museum main works and 1 March 2016 for Lyric Theatre Complex foundation works) to the end of the reporting month and are summarized in the **Table K-1** and **Table K-2** below respectively.

Table K-1: Statistics for complaints, notifications of summons and successful prosecutions for M+ Museum Main Works

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting month	0	0	0
From 31 October 2015 to end of the reporting month	3	0	0

Table K-2: Statistics for complaints, notifications of summons and successful prosecutions for Lyric Theatre Complex Foundation Works

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting month	0	0	0
From 1 March 2016 to end of the reporting month	2	0	0