



Development at West Kowloon Cultural District

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

October 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

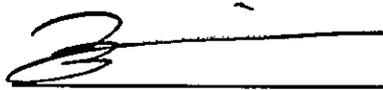
Development at West Kowloon Cultural District

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

October 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

13.10.2016

Verified by:



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

Date

13 Oct 2016

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	17
4.3.1	M+ Museum	17
4.3.2	Lyric Theatre Complex	17
4.4	Recommended Mitigation Measures	17
4.4.1	M+ Museum	18
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	23
8.1	Conclusions	23
8.2	Recommendations	23
Figure 1	Site Layout Plan and Monitoring Stations	24
	Appendices	25
A.	Project Organisation	26
B.	Tentative Construction Programme	27
C.	Action and Limit Levels for Construction Phase	28
D.	Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact	29

E. Monitoring Schedule	30
F. Calibration Certifications	31
G. Graphical Plots of the Monitoring Results	32
H. Meteorological Data Extracted from Hong Kong Observatory	33
I. Waste Flow table	34
J. Environmental Mitigation Measures – Implementation Status	35
K. Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions	36

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 September to 30 September 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 1, 9, 15, 22 and 29 September 2016 for M+ Museum and 7, 14, 21 and 28 September 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.

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 composite columns
- Construction of slab
- Construction of columns & walls

- Construction of sump pits
- Construction of basement structure

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 September to 30 September 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 composite columns
- Construction of slab
- Construction of columns & walls
- Construction of sump pits
- Construction of basement structure

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	AM2A – Austin Road West opposite to The Harbourside Tower 1	At least once every 6 days
	1-Hour TSP	AM2A – Austin Road West opposite to The Harbourside Tower 1	At least 3 times every 6 days
Noise	Leq, 30 minutes	NM1A- 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. However, the electricity supply at AM2 was suspended from 31 August 2016 and was no longer available. In order to have a more secure electricity supply, an alternative air monitoring location (AM2A) was identified at Austin Road West opposite to The

Harbourside Tower 1, which is close to Lyric Theatre Complex site entrance. This alternative air monitoring location was approved by EPD on 28 September 2016. 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 AM2A 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)
AM2A	Austin Road West opposite to 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)	L_{eq} (30 min), L_{90} (30 min) & L_{10} (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)

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-18 (Serial No.00360030)	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 AM2A 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	06-Sep-16	10:42	52	49	55	49-102	273.7	500
	12-Sep-16	10:42	55	59	60			
	17-Sep-16	8:05	69	74	77			
	23-Sep-16	10:50	80	88	97			
	29-Sep-16	10:50	84	94	102			
AM2A	06-Sep-16	10:52	60	58	64	58-103	274.2	500
	12-Sep-16	10:52	61	58	61			
	17-Sep-16	8:15	74	90	70			
	23-Sep-16	11:02	82	91	101			
	29-Sep-16	11:00	85	95	103			

3.2.2 24-hour TSP

Results of 24-hour TSP at the monitoring location AM1 and AM2A 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	06-Sep-16	10:40	52	52-60	143.6	260	
	12-Sep-16	10:40	52				
	17-Sep-16	08:00	58				
	23-Sep-16	10:52	60				
	29-Sep-16	10:48	57				
AM2A	06-Sep-16	Suspended due to Electricity Issue			58-64	151.1	260
	12-Sep-16	10:55	61				
	17-Sep-16	08:17	64				
	23-Sep-16	11:04	58				
	29-Sep-16	11:00	63				

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))
06-Sep-16	14:00	14:30	68.3	75
12-Sep-16	14:00	14:30	69.2	
23-Sep-16	14:00	14:30	69.5	
29-Sep-16	14:00	14:30	69.3	

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 4, 11, 18 and 25 September 2016. Additional monitoring was carried out during the restricted hours on 4, 11, 18 and 25 September 2016. The measured L_{eq} (30 mins) is in the range of 67.6 – 69.2 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 1, 15 and 29 September 2016 for M+ Museum and 14 and 28 September 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 1, 9, 15, 22 and 29 September 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 9 September 2016. 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)
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.	Lock for the chemical store was provided.	1 Sep 2016
12 Aug 2016	Water quality	The contractor was reminded to enhance the wastewater treatment at wetsep no. 2 and 5.	De-sludging was conducted at wetsep no.5, but sludge and algae was still observed at wetsep no. 2 and also at no. 4 on 1 Sep 2016. The contractor has arranged de-sludging at wetsep no. 2 and 4.on 9 Sep 2016.	9 Sep 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.	The contractor has removed chemicals previously observed without drip trays.	9 Sep 2016
25 Aug 2016	Water quality	The contractor was reminded to provide an updated drainage layout plan at each wetsep.	Updated drainage layout plan at each wetsep was provided.	1 Sep 2016
25 Aug 2016	Water quality	The contractor to provide wheel washing at bar bending yard.	Wheel washing at bar bending yard was provided.	1 Sep 2016
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.	Water spraying frequency was increased at bar bending yard.	1 Sep 2016
25 Aug 2016	Water quality	The contractor was reminded to remove stagnant water at B1 slab.	Stagnant water at B1 slab was removed.	1 Sep 2016
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.	The pipe at gate 3 has been sealed.	1 Sep 2016
1 Sep 2016	Water quality	Overflow was observed at wetsep no. 5. The contractor was reminded to ensure sufficient capacity of wetseps to avoid site runoff to the harbour.	The contractor has rectified the overflow problem at wetsep no.5 and added a new wetsep no.6.	9 Sep 2016
1 Sep 2016	Water quality	Effluent at discharge point at ICP	N/A	N/A

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
		and all wetseps at M+ was checked and found visually clear comparing with standard solution and in acceptable pH range.		
9 Sep 2016	Waste management	Stagnant water was observed in drip trays due to early rainfall. The contractor was reminded to remove the stagnant water more frequently.	The contractor has removed stagnant water previously observed in drip trays	21 Sep 2016
9 Sep 2016	Others	The contractor was reminded to enhance tree protection for trees located near seafront as the current protection was observed not enough.	The contractor has provided tree protection for trees located near seafront.	14 Sep 2016
9 Sep 2016	Waste management	The contractor was reminded to provide proper bunding/ secondary containment for chemical containers to avoid chemical leakage as improper storage of chemicals was observed.	The contractor has provided drip tray for chemicals stored in the chemical store.	22 Sep 2016
9 Sep 2016	Water quality	All wetseps in M+ and discharge point at ICP was checked, the effluent quality was observed visually clear comparing to standard solution and within acceptable pH range.	N/A	N/A
15 Sep 2016	Air quality	The contractor was reminded to enhance water spraying for stockpile at A11 and haul road near wetsep no.5.	The contractor has enhanced water spraying frequency for the stockpile at A11 and the haul road near wetsep no.5.	21 Sep 2016
15 Sep 2016	Water quality	The contractor was reminded to clearly label the pipes to indicate pipe flow for easy checking.	The contractor has clearly labelled the pipes to indicate the pipe flow.	21 Sep 2016
15 Sep 2016	Air quality	The contractor was reminded to well cover the cement bags at B1.	The contractor has well covered the cement bags.	21 Sep 2016
15 Sep 2016	Waste management	Chemical drums and containers were observed without driptrays. The contractor was reminded to provide drip trays or remove the chemicals off site.	The contractor has removed the chemicals previously observed with drip tray off site.	22 Sep 2016
15 Sep 2016	Water quality	Effluent at ICP discharge point and all wetseps at M+ was checked and found visually clear comparing to standard solution and within acceptable pH range.	N/A	N/A
22 Sep 2016	Water quality	Overflow was observed at wetsep no.3. The contractor was reminded to rectify it as soon as possible. The contractor was also reminded to review the capacity of wetseps and ensure all wastewater is properly treated before discharge.	The contractor has rectified the overflow problem previously observed at wetsep no.3.	28 Sep 2016
22 Sep 2016	Waste management	Chemicals without drip tray and chemicals stored in not appropriate container was observed at DCS. The contractor was reminded to provide drip tray or remove the chemicals off site if not in use and provide proper container for chemicals.	The contractor has removed the chemical containers previously found without drip tray and chemicals stored in improper containers off site.	28 Sep 2016
22 Sep 2016	Waste management	Stagnant water and mixture was observed at drip tray near wetsep no. 3 and drip tray of generator near ICP. The contractor was reminded to remove the mixture	Stagnant water and mixture of chemical waste previously observed in drip tray near wetsep no.3 and drip tray of generator have been removed. The	28 Sep 2016

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
		and treat it as chemical waste. The empty chemical containers should be removed off site from the drip tray.	contractor has also removed eth empty chemical container off site.	
22 Sep 2016	Waste management	Refuse was observed on the ground at ICP. The contractor was reminded to remove the refuse and maintain good house-keeping.	The contractor has removed the refuse previously found on the ground of ICP.	28 Sep 2016
22 Sep 2016	Water quality	Effluent at ICP discharge point and wetseps at M+ was checked and was visually clear comparing with standard solution and within acceptable pH range.	N/A	N/A
22 Sep 2016	Others	The contractor was reminded to provide proper tree protection for the trees near seafront as the protection was observed not enough.	The contractor has provided proper tree protection for trees near seafront.	28 Sep 2016
29 Sep 2016	Waste management	The contractor was reminded to remove the stagnant water at drip trays more frequently.	Follow-up status will be provided in the next reporting month	On-going
29 Sep 2016	Water quality	Sand was found leaking out from the sand bags near the seafront. The contractor was reminded to replace all the broken sand bags.	Follow-up status will be provided in the next reporting month	On-going
29 Sep 2016	Waste management	Chemical containers and drums were found without drip trays near DCS, near wetsep no.1 nad A10. Oil pipes were also found on the ground near wetsep no.1 and soil was found contaminated. The contractor was reminded to provide drip trays for all chemical containers/ drums and oil pipes, and remove the contaminated soil as chemical waste.	Follow-up status will be provided in the next reporting month	On-going
29 Sep 2016	Water quality	The effluent discharge quality at ICP and wetseps at M+ were checked and found visually clear comparing to the standard solution and within acceptable pH range.	N/A	N/A

4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 7, 14, 21 and 28 September 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 21 September 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	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
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.	More frequent desludge of the Wetsep near site entrance was arranged.	1 Sep 2016
7 Sep 2016	Waste management	Oil stains were observed on the ground. The Contractor was reminded to remove the oil stain	The oil stain was removed.	14 Sep 2016

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
		and handle them as chemical waste.		
14 Sep 2016	Air quality	Haul road was observed dry near area L02 and L03. The contractor was reminded to increase water spraying frequency at that area.	Increased water spray frequency was provided for haul road near area L02 and L03.	15 Sep 2016
14 Sep 2016	Waste management	A drip tray was filled up with stagnant water. The contractor was reminded to clean the drip tray and treat as chemical waste.	Stagnant water in drip tray was cleared and designated as chemical waste.	15 Sep 2016
21 Sep 2016	Waste management	A mixture of stagnant water and oil was accumulated in a drip tray. The Contractor was reminded to clear the mixture from the drip tray and treat as chemical waste.	The mixture from the drip tray was cleared.	28 Sep 2016
21 Sep 2016	Water quality	Site runoff was accumulated inside the trench near the sea front. The Contractor was reminded to monitor the site runoff and provide additional pump(s) as necessary to prevent overflow.	The site runoff inside the trench near the sea front was continuously removed.	28 Sep 2016
28 Sep 2016	Waste management	A mixture of chemical and algae was found accumulated in the drip tray of the generator near area L01. The contractor was reminded to clear the mixture and treat as chemical waste.	Follow-up status will be provided in the next reporting month	On-going
28 Sep 2016	Noise	The panel of the power pack near area L02 was found open. The contractor was reminded to close the panel to reduce the noise level.	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, 197.91 ton and 802.17 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 107.9 ton of general refuse was disposed of at SENT landfill. 104.2 ton of metals, 0 ton of paper/cardboard packaging, 0 ton of plastic and 45.5 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 5,648.0 ton of inert C&D materials were reused in other projects and 53.9 ton of inert C&D materials were disposed to sorting facility. 0.2 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, 3043.0 ton and 10628.2 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 12.4 ton of general refuse was disposed of at SENT landfill. 59.8 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. 1.6 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	cancelled on 23-Sep-16	--
GW-RE0930-16	23-Sep-16	22-Mar-16	Valid	--
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.
- Chemical waste in drip trays should be frequently removed.
- All chemicals should be kept proper containers and clearly labelled.
- Good housekeeping of site should be maintained.

Air Quality

- Maintain high standard of housekeeping to prevent emission of fugitive dust.
- Dusty materials stored on site should be well covered to reduce dust impact.
- Enhance water spraying for haul roads to reduce dust impact.

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.
- All pipes should be clearly labelled to indicate the pipe flow.
- All stagnant water in site area should be properly collected and treated before discharge.
- Ensure no leakage of sand bags which act as preventive measures to prevent site runoff from entering the harbour

Others

- Proper tree protection should be provided to trees

4.4.2 Lyric Theatre Complex

Chemical and Waste Management

- 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.

Noise

- The panel of the power pack should be always closed.

Water Quality

- No leakage of site runoff from the site near site boundary should be ensured.

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 August 2016	14 September 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

No environmental complaint was received this month. 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 composite columns
- Construction of slab
- Construction of columns & walls
- Construction of sump pits
- Construction of basement structure

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	26
B.	Tentative Construction Programme	27
C.	Action and Limit Levels for Construction Phase	28
D.	Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact	29
E.	Monitoring Schedule	30
F.	Calibration Certifications	31
G.	Graphical Plots of the Monitoring Results	32
H.	Meteorological Data Extracted from Hong Kong Observatory	33
I.	Waste Flow table	34
J.	Environmental Mitigation Measures – Implementation Status	35
K.	Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions	36

A. Project Organisation

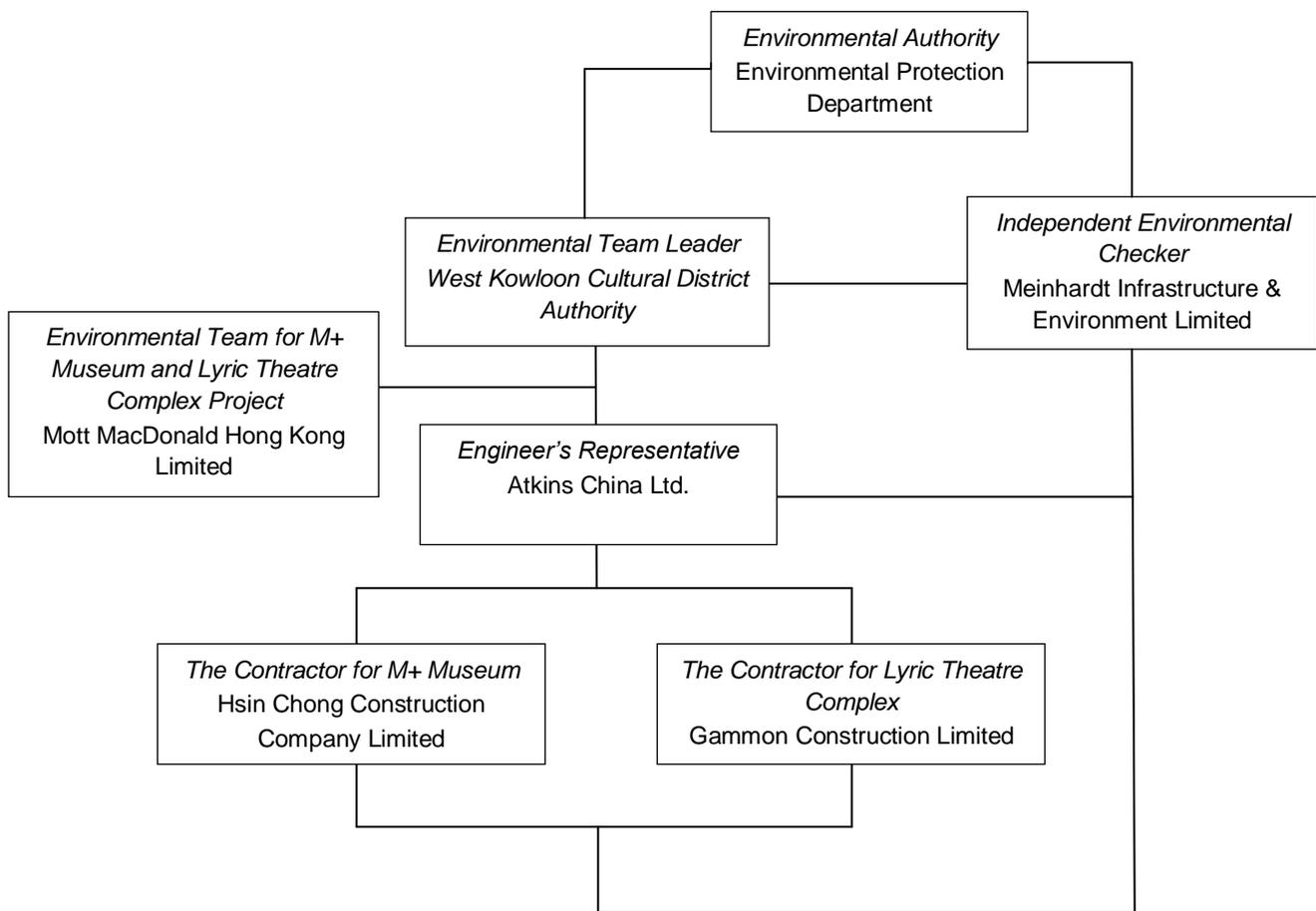


Table A-1: Contact information

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	August 2016					September 2016					October 2016					November 2016					December 2016					
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04							
(3MRP-11) Three Months Rolling Programme Status at 31 Aug 2016																																			
Contract Key Dates & Milestones																																			
Contract Dates																																			
CP02	Contract Period (1218 days)	1216	26-Sep-15	23-Jan-19	26-Sep-15 A	20-Feb-19	28%	-28	-26																										
Schedule of Milestones																																			
Cost Centre A - Preliminaries and General Requirements																																			
MSA.06	Compliance Review to the CA's satisfaction on Project Time & C	0		31-Aug-16		31-Aug-16	0%	0	6																										
MSA.07	Compliance Review to the CA's satisfaction on Project Time & C	0		30-Sep-16		30-Sep-16	0%	0	6																										
Cost Centre B - M+																																			
MSB.04	Complete Pile Caps for Trusses 1, 2 & 5 (t=M9)	0		31-Aug-16		18-Aug-16 A	100%	0																											
MSB.05	Complete all Columns, Structural Cores and other work necessa	0		31-Oct-16		31-Oct-16	0%	0	28																										
MSB.03	Complete Excavation to 100% of Overall Volume of Bulk Excav.	0		31-Oct-16		31-Oct-16	0%	0	28																										
Cost Centre C - Public Works and Tunnel Protection Works																																			
MSC.03	Complete Pile Caps for Trusses 1, 2 & 5 (t=M9)	0		31-Aug-16		31-Aug-16 A	100%	0																											
MSC.02	First delivery of major Truss Steelwork elements to the Site for	0		30-Sep-16		30-Sep-16	0%	0	29																										
MSC.04i	Complete of all work necessary for commencement of erection	0		31-Oct-16		31-Oct-16	0%	0	28																										
MSC.04ii	Complete all Columns, Structural Cores and other work necessa	0		31-Oct-16		31-Oct-16	0%	0	28																										
MSC.01	Obtain Notice of No Objection from Contract Administrator for a	0		31-Oct-16		31-Oct-16	0%	0	28																										
Interface Dates																																			
Access Date																																			
AD1180	M16 - Lyric Interface South (2nd access) (30Jun16)	0	15-Aug-16		22-Aug-16 A		100%	-7																											
AD1160	M15 - M+ / Lyric Staircase (2nd access) (30Jun16)	0	15-Aug-16		22-Aug-16 A		100%	-7																											
AD1350	M39 - Lyric Waterfront / through ESS Compound (Subject to Gov't Approval - S	0	31-Aug-16		31-Aug-16 A		100%	0																											
AD1420	M45 - At-grade Road Footpath along M+ Basement (from PIW)	0	31-Aug-16		31-Aug-16		0%	0	341																										
AD1530	M70 - Arts Pavilion Area on M+ side of M+ / Park Interface (t.b	0	31-Aug-16		31-Aug-16		0%	0	878																										
AD1340	M38 - Lyric Waterfront (Part of MTR Area A1) (from Lyric) (31A	0	31-Aug-16		31-Aug-16 A		100%	0																											
AD1410	M44 - At-grade Road Footpath at ICP / SPS Frontage (from PIW	0	31-Aug-16		31-Aug-16		0%	0	386																										
AD1380	M42 - Lyric Waterfront East of Barging Point	0	01-Oct-16		30-Aug-16 A		100%	32																											
AD1370	M41 - Lyric Waterfront at Barging Point (Part of MTR Area 3) (F	0	01-Oct-16		30-Aug-16 A		100%	32																											
AD1110	M12 - Lyric Interface North (2nd access) (30Nov16)	0	09-Oct-16		09-Oct-16		0%	0	68																										
Vacation Date																																			
VD1240	M22 - ICP/SPS Frontage within At-grade Road (H/O to PIW) (30	0		31-Aug-16		31-Aug-16	0%	0	-114																										
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		02-Sep-16		02-Sep-16	0%	0	85																										
IF1060	Take possession of M12 for external wall construction	0	14-Oct-16		14-Oct-16		0%	0	63																										
Along Interface South of AEL																																			
IF1050	Take possession of M38 and M39	0	31-Aug-16		31-Aug-16 A		100%	0																											

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

West Kowloon Cultural District Authority
(3MRP-11) Three Months Rolling Programme
Status at 31 Aug 2016



CMWP-10			
Date	Revision	Checked	Approved
14-Jun-16	(3MRP-08) Monthly Update Status at 31 May 2016	Jojo	Ricky Lau / Chris Chau
13-Jul-16	(3MRP-09) Monthly Update Status at 30 June 2016	Jojo	Ricky Lau / Chris Chau
08-Aug-16	(3MRP-10) Monthly Update Status at 31 July 2016	Jojo	Ricky Lau / Chris Chau
08-Sep-16	(3MRP-11) Monthly Update Status at 31 July 2016	Chris Silcock	Ricky Lau / Chris Chau

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016				October 2016				November 2016				December 2016				
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04			
IF4110	Install two DN600 Seawater Intake mains, DN100 Chlorination	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	11-Oct-16		11-Oct-16		0%	0	837																						
Pre-Construction, Procurements & Bulk Production																															
SUM.0050	Facade - Material Submission	205	31-Mar-16	03-Dec-16	22-Oct-15 A	29-Sep-16	80%	54	41																						
SUM.0060	Facade - Visual Mock-Up	231	31-Mar-16	06-Jan-17	27-Oct-15 A	18-Nov-16	70%	39	73																						
SUM.0020	Facade - Shop Drawings	145	31-Mar-16	22-Sep-16	05-Mar-16 A	09-Nov-16	30%	-38	127																						
SUM.0030	Facade - Embed BD Submission	204	26-Apr-16	30-Dec-16	14-Mar-16 A	12-Jan-17	50%	-10	36																						
SUM.0040	Facade - BD Submission	180	15-Jul-16	22-Feb-17	05-Jun-16 A	13-Apr-17	10%	-43	242																						
SUM.0080	Facade - Performance Test Mock-Up	263	31-Aug-16	22-Jul-17	31-Aug-16	22-Jul-17	0%	0	138																						
SUM.0025	Facade Door - Shop Drawings	79	31-Aug-16	03-Dec-16	31-Aug-16	03-Dec-16	0%	0	12																						
SUM.0070	Facade - Production Mock-Up	172	30-Sep-16	05-May-17	30-Sep-16	05-May-17	0%	0	84																						
M+ RC Structure																															
M+ Podium																															
SUM.0100	Podium - B1/Floor Slab Structure	215	31-Mar-16	15-Dec-16	15-Mar-16 A	22-Nov-16	30%	20	85																						
SUM.0110	Podium - Grd/Flr Slab Structure	272	11-Oct-16	08-Sep-17	11-Oct-16	08-Sep-17	0%	0	70																						
SUM.0120	Podium - 1st/Flr Slab Structure	260	10-Nov-16	25-Sep-17	10-Nov-16	25-Sep-17	0%	0	392																						
Preliminaries																															
Pre-Construction - Design & Procurements																															
External Facade for M+ Podium (By Permasteelisa)																															
Facade Shop Drawing Submission																															
Tower Facade																															
DS.2004.12	Approval	11	18-Aug-16	30-Aug-16	18-Aug-16 A	12-Sep-16	0%	-11	107																						
Podium Facade																															
DS.2004.18	2nd Submission	6	20-Aug-16	26-Aug-16	30-Jul-16 A	05-Sep-16	20%	-8	30																						
DS.2004.20	Comment on 2nd Submission	11	06-Sep-16	19-Sep-16	06-Sep-16	19-Sep-16	0%	0	30																						
DS.2004.22	3rd Submission	6	20-Sep-16	26-Sep-16	20-Sep-16	26-Sep-16	0%	0	30																						
DS.2004.24	Approval	12	27-Sep-16	12-Oct-16	27-Sep-16	12-Oct-16	0%	0	30																						
Glass Wall with T Mullion (Kinked & Straight B1/F & G/F),CW-01a to 03d																															
DS.2004.28	Comment on 1st Submission	10	10-Aug-16	20-Aug-16	30-Jul-16 A	09-Sep-16	5%	-17	3																						
DS.2004.30	2nd Submission	5	10-Sep-16	15-Sep-16	10-Sep-16	15-Sep-16	0%	0	3																						
DS.2004.32	Comment on 2nd Submission	10	19-Sep-16	30-Sep-16	19-Sep-16	30-Sep-16	0%	0	3																						
DS.2004.34	3rd Submission	7	30-Sep-16	08-Oct-16	30-Sep-16	08-Oct-16	0%	0	3																						
DS.2004.36	Approval	12	11-Oct-16	24-Oct-16	11-Oct-16	24-Oct-16	0%	0	3																						
Glass Wall with Precast Mullion & Ceramic Mullion,CW-04-05d and 07																															
DS.2004.38	1st Submission	10	30-May-16	10-Jun-16	30-May-16 A	05-Sep-16	70%	-72	26																						
DS.2004.40	Comment on 1st Submission	10	06-Sep-16	17-Sep-16	06-Sep-16	17-Sep-16	0%	0	26																						
DS.2004.42	2nd Submission	6	19-Sep-16	24-Sep-16	19-Sep-16	24-Sep-16	0%	0	26																						
DS.2004.44	Comment on 2nd Submission	11	27-Sep-16	11-Oct-16	27-Sep-16	11-Oct-16	0%	0	26																						
DS.2004.46	3rd Submission	6	12-Oct-16	18-Oct-16	12-Oct-16	18-Oct-16	0%	0	26																						
DS.2004.48	Approval	12	19-Oct-16	01-Nov-16	19-Oct-16	01-Nov-16	0%	0	26																						
Podium Ceramic Concrete Tubes & with Perforated Cladding, FAC-CW-07																															

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016				November 2016				December 2016	
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04	
DS.2004.50	1st Submission	10	31-May-16	11-Jun-16	27-May-16	12-Sep-16	30%	-77	20	DS.2004.50, 1st Submission, 1st Submission																			
DS.2004.52	Comment on 1st Submission	10	14-Sep-16	26-Sep-16	14-Sep-16	26-Sep-16	0%	0	20	DS.2004.52, Comment on 1st Submission																			
DS.2004.54	2nd Submission	6	27-Sep-16	04-Oct-16	27-Sep-16	04-Oct-16	0%	0	20	DS.2004.54, 2nd Submission																			
DS.2004.56	Comment on 2nd Submission	11	05-Oct-16	18-Oct-16	05-Oct-16	18-Oct-16	0%	0	20	DS.2004.56, Comment on 2nd Submission																			
DS.2004.58	3rd Submission	6	19-Oct-16	25-Oct-16	19-Oct-16	25-Oct-16	0%	0	20	DS.2004.58, 3rd Submission																			
DS.2004.60	Approval	12	26-Oct-16	08-Nov-16	26-Oct-16	08-Nov-16	0%	0	20	DS.2004.60, Approval																			
Garden Gallery Ceramic Cladding & Ceiling,CE-03a,03b,03c																													
DS.2004.62	1st Submission	10	30-Apr-16	12-May-16	17-Apr-16 A	12-Sep-16	90%	-101	82	DS.2004.62, 1st Submission, 1st Submission																			
DS.2004.64	Comment on 1st Submission	11	13-Sep-16	27-Sep-16	13-Sep-16	27-Sep-16	0%	0	82	DS.2004.64, Comment on 1st Submission																			
DS.2004.66	2nd Submission	6	27-Sep-16	05-Oct-16	27-Sep-16	05-Oct-16	0%	0	82	DS.2004.66, 2nd Submission																			
DS.2004.68	Comment on 2nd Submission	11	05-Oct-16	19-Oct-16	05-Oct-16	19-Oct-16	0%	0	82	DS.2004.68, Comment on 2nd Submission																			
DS.2004.70	3rd Submission	6	19-Oct-16	26-Oct-16	19-Oct-16	26-Oct-16	0%	0	82	DS.2004.70, 3rd Submission																			
DS.2004.72	Approval	12	26-Oct-16	09-Nov-16	26-Oct-16	09-Nov-16	0%	0	82	DS.2004.72, Approval																			
L3 Storefront,CW-08a,08b																													
DS.2004.78	2nd Submission	5	10-Aug-16	15-Aug-16	22-Jul-16 A	02-Sep-16	70%	-16	153	DS.2004.78, 2nd Submission, 2nd Submission																			
DS.2004.80	Comment on 2nd Submission	11	03-Sep-16	15-Sep-16	03-Sep-16	15-Sep-16	0%	0	153	DS.2004.80, Comment on 2nd Submission																			
DS.2004.82	3rd Submission	6	17-Sep-16	23-Sep-16	17-Sep-16	23-Sep-16	0%	0	153	DS.2004.82, 3rd Submission																			
DS.2004.84	Approval	12	24-Sep-16	08-Oct-16	24-Sep-16	08-Oct-16	0%	0	153	DS.2004.84, Approval																			
Strip Glazing at Skylight Gallery L3 & Plaza Skylight,CW10,SK-01,02																													
DS.2004.86	1st Submission	10	31-May-16	11-Jun-16	14-May-16	07-Sep-16	50%	-73	81	DS.2004.86, 1st Submission, 1st Submission																			
DS.2004.88	Comment on 1st Submission	10	08-Sep-16	20-Sep-16	08-Sep-16	20-Sep-16	0%	0	81	DS.2004.88, Comment on 1st Submission																			
DS.2004.90	2nd Submission	5	21-Sep-16	26-Sep-16	21-Sep-16	26-Sep-16	0%	0	81	DS.2004.90, 2nd Submission																			
DS.2004.92	Comment on 2nd Submission	11	28-Sep-16	12-Oct-16	28-Sep-16	12-Oct-16	0%	0	81	DS.2004.92, Comment on 2nd Submission																			
DS.2004.94	3rd Submission	6	13-Oct-16	19-Oct-16	13-Oct-16	19-Oct-16	0%	0	121	DS.2004.94, 3rd Submission																			
DS.2004.96	Approval	12	20-Oct-16	02-Nov-16	20-Oct-16	02-Nov-16	0%	0	121	DS.2004.96, Approval																			
Shop Drawings Metal Cladding FAC-LV-01b (Additional Scope)																													
DS.2004.106	1st Submission	11	31-Aug-16	13-Sep-16	31-Aug-16*	13-Sep-16	0%	0	102	DS.2004.106, 1st Submission																			
DS.2004.116	Comment on 1st Submission	12	13-Sep-16	28-Sep-16	13-Sep-16	28-Sep-16	0%	0	102	DS.2004.116, Comment on 1st Submission																			
DS.2004.126	2nd Submission	5	28-Sep-16	05-Oct-16	28-Sep-16	05-Oct-16	0%	0	102	DS.2004.126, 2nd Submission																			
DS.2004.136	Comment on 2nd Submission	11	05-Oct-16	19-Oct-16	05-Oct-16	19-Oct-16	0%	0	102	DS.2004.136, Comment on 2nd Submission																			
DS.2004.146	3rd Submission	6	19-Oct-16	26-Oct-16	19-Oct-16	26-Oct-16	0%	0	102	DS.2004.146, 3rd Submission																			
DS.2004.156	Approval	11	26-Oct-16	08-Nov-16	26-Oct-16	08-Nov-16	0%	0	102	DS.2004.156, Approval																			
Facade Doors - Shop Drawings Submission (Additional Works)																													
Facade Door Package # 1: Glazed Doors Bet Ceramic Concrete Mullion (Total = 53 nos)																													
DS.2004.166	Facade Door Package # 1 - 1st Submission	12	01-Sep-16	15-Sep-16	01-Sep-16*	15-Sep-16	0%	0	14	DS.2004.166, Facade Door Package # 1 - 1st Submission																			
DS.2004.176	Facade Door Package # 1 - Comment on 1st Submission	12	17-Sep-16	30-Sep-16	17-Sep-16	30-Sep-16	0%	0	14	DS.2004.176, Facade Door Package # 1 - Comment on 1st Submission																			
DS.2004.186	Facade Door Package # 1 - 2nd Submission	17	03-Oct-16	22-Oct-16	03-Oct-16	22-Oct-16	0%	0	14	DS.2004.186, Facade Door Package # 1 - 2nd Submission																			
DS.2004.196	Facade Door Package # 1 - Comment on 2nd Submission	10	24-Oct-16	03-Nov-16	24-Oct-16	03-Nov-16	0%	0	14	DS.2004.196, Facade Door Package # 1 - Comment on 2nd Submission																			
DS.2004.206	Facade Door Package # 1 - 3rd Submission	12	04-Nov-16	17-Nov-16	04-Nov-16	17-Nov-16	0%	0	14	DS.2004.206, Facade Door Package # 1 - 3rd Submission																			
DS.2004.216	Facade Door Package # 1 - Approval	12	18-Nov-16	01-Dec-16	18-Nov-16	01-Dec-16	0%	0	14	DS.2004.216, Facade Door Package # 1 - Approval																			
Facade Door Package # 2: Sliding Door in L3 Storefront (Total = 4 nos automatic)																													
DS.2004.226	Facade Door Package # 2 - 1st Submission	12	31-Aug-16	13-Sep-16	31-Aug-16*	13-Sep-16	0%	0	16	DS.2004.226, Facade Door Package # 2 - 1st Submission																			
DS.2004.236	Facade Door Package # 2 - Comment on 1st Submission	12	14-Sep-16	28-Sep-16	14-Sep-16	28-Sep-16	0%	0	16	DS.2004.236, Facade Door Package # 2 - Comment on 1st Submission																			
DS.2004.246	Facade Door Package # 2 - 2nd Submission	18	29-Sep-16	22-Oct-16	29-Sep-16	22-Oct-16	0%	0	16	DS.2004.246, Facade Door Package # 2 - 2nd Submission																			

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016				November 2016				December 2016					
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04					
DS.2004.636	Facade Door Package # 8 - Approval	11	29-Oct-16	10-Nov-16	29-Oct-16	10-Nov-16	0%	0	32																								
Facade Door Package # 9: G/F Access Door in Ceramic Tube (Total = 8 nos)																																	
DS.2004.646	Facade Door Package # 9 - 1st Submission	12	01-Sep-16	15-Sep-16	01-Sep-16*	15-Sep-16	0%	0	25																								
DS.2004.656	Facade Door Package # 9 - Comment on 1st Submission	12	15-Sep-16	30-Sep-16	15-Sep-16	30-Sep-16	0%	0	25																								
DS.2004.666	Facade Door Package # 9 - 2nd Submission	12	03-Oct-16	17-Oct-16	03-Oct-16	17-Oct-16	0%	0	25																								
DS.2004.676	Facade Door Package # 9 - Comment on 2nd Submission	11	18-Oct-16	29-Oct-16	18-Oct-16	29-Oct-16	0%	0	25																								
DS.2004.686	Facade Door Package # 9 - 3rd Submission	6	31-Oct-16	05-Nov-16	31-Oct-16	05-Nov-16	0%	0	25																								
DS.2004.696	Facade Door Package # 9 - Approval	11	07-Nov-16	18-Nov-16	07-Nov-16	18-Nov-16	0%	0	25																								
Facade Door Package # 10: B1/F Carriageway Access Panel / Doors (Total = 24 nos)																																	
DS.2004.706	Facade Door Package # 10 - 1st Submission	12	01-Sep-16	15-Sep-16	01-Sep-16*	15-Sep-16	0%	0	12																								
DS.2004.716	Facade Door Package # 10 - Comment on 1st Submission	11	15-Sep-16	29-Sep-16	15-Sep-16	29-Sep-16	0%	0	12																								
DS.2004.726	Facade Door Package # 10 - 2nd Submission	18	30-Sep-16	22-Oct-16	30-Sep-16	22-Oct-16	0%	0	12																								
DS.2004.736	Facade Door Package # 10 - Comment on 2nd Submission	12	24-Oct-16	05-Nov-16	24-Oct-16	05-Nov-16	0%	0	12																								
DS.2004.746	Facade Door Package # 10 - 3rd Submission	12	07-Nov-16	19-Nov-16	07-Nov-16	19-Nov-16	0%	0	12																								
DS.2004.756	Facade Door Package # 10 - Approval	12	21-Nov-16	03-Dec-16	21-Nov-16	03-Dec-16	0%	0	12																								
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	26																								
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	26																								
DS.2004.786	Facade Door Package # 11 - 2nd Submission	11	03-Oct-16	15-Oct-16	03-Oct-16	15-Oct-16	0%	0	26																								
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	26																								
DS.2004.806	Facade Door Package # 11 - 3rd Submission	6	28-Oct-16	03-Nov-16	28-Oct-16	03-Nov-16	0%	0	26																								
DS.2004.816	Facade Door Package # 11 - Approval	12	04-Nov-16	17-Nov-16	04-Nov-16	17-Nov-16	0%	0	26																								
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	24																								
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	24																								
DS.2004.846	Facade Door Package # 12 - 2nd Submission	12	30-Sep-16	15-Oct-16	30-Sep-16	15-Oct-16	0%	0	24																								
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	24																								
DS.2004.866	Facade Door Package # 12 - 3rd Submission	6	31-Oct-16	05-Nov-16	31-Oct-16	05-Nov-16	0%	0	24																								
DS.2004.876	Facade Door Package # 12 - Approval	12	07-Nov-16	19-Nov-16	07-Nov-16	19-Nov-16	0%	0	24																								
Embed BD Submission																																	
M+ Podium																																	
M+ Podium (B1/F) - Embed Submission																																	
DS.2005.10	BD Submission & Approval	60	11-Aug-16	09-Oct-16	16-Jul-16 A	03-Sep-16	30%	36	16																								
DS.2005.12	Preparation of BD Consent Application	5	05-Sep-16	09-Sep-16	05-Sep-16	09-Sep-16	0%	0	12																								
DS.2005.14	BD Consent Application	30	10-Sep-16	09-Oct-16	10-Sep-16	09-Oct-16	0%	0	16																								
M+ Podium (G/F to 3/F) - Embed Submission																																	
DS.2005.22	RSC Submitted to BD	3	31-Aug-16	02-Sep-16	31-Aug-16	02-Sep-16	0%	0	6																								
DS.2005.24	BD Submission & Approval	60	03-Sep-16	01-Nov-16	03-Sep-16	01-Nov-16	0%	0	7																								
DS.2005.26	Preparation of BD Consent Application	6	02-Nov-16	08-Nov-16	02-Nov-16	08-Nov-16	0%	0	6																								
DS.2005.28	BD Consent Application	30	09-Nov-16	08-Dec-16	09-Nov-16	08-Dec-16	0%	0	7																								
M+ Tower																																	
M+ Tower (4/F to RF/F) - Embed Submission																																	
DS.2006.02	1st embed BD submission to Consultants	11	31-Aug-16	12-Sep-16	31-Aug-16	12-Sep-16	0%	0	37																								
DS.2006.04	1st embed BD submission Comments	11	13-Sep-16	26-Sep-16	13-Sep-16	26-Sep-16	0%	0	37																								

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016				December 2016					
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04						
DS.2006.06	2nd embed BD submission to Consultants	6	27-Sep-16	04-Oct-16	27-Sep-16	04-Oct-16	0%	0	37																									
DS.2006.08	RSC Submitted to BD	3	05-Oct-16	08-Oct-16	05-Oct-16	08-Oct-16	0%	0	37																									
DS.2006.10	BD Submission & Approval	60	08-Oct-16	07-Dec-16	08-Oct-16	07-Dec-16	0%	0	45																									
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-Sep-16	60%	-40	30																									
DS.2016.14	Comment on 1st Submission	11	13-Sep-16	26-Sep-16	13-Sep-16	26-Sep-16	0%	0	30																									
DS.2016.16	2nd Submission	10	27-Sep-16	08-Oct-16	27-Sep-16	08-Oct-16	0%	0	30																									
DS.2016.18	Comment on 2nd Submission	11	11-Oct-16	24-Oct-16	11-Oct-16	24-Oct-16	0%	0	30																									
DS.2016.20	3rd Submission	10	24-Oct-16	03-Nov-16	24-Oct-16	03-Nov-16	0%	0	30																									
DS.2016.22	Comment on 3rd Submission	12	04-Nov-16	17-Nov-16	04-Nov-16	17-Nov-16	0%	0	30																									
DS.2016.24	RSE Submitted to BD	4	18-Nov-16	22-Nov-16	18-Nov-16	22-Nov-16	0%	0	30																									
DS.2016.26	BD Submission & Approval	60	23-Nov-16	21-Jan-17	23-Nov-16	21-Jan-17	0%	0	37																									
Podium Precast Unitized Facade																																		
DS.2016.32	1st BD Submission to Consultant	9	31-Aug-16	09-Sep-16	31-Aug-16*	09-Sep-16	0%	0	93																									
DS.2016.34	Comment on 1st Submission	12	10-Sep-16	24-Sep-16	10-Sep-16	24-Sep-16	0%	0	93																									
DS.2016.36	2nd Submission	9	26-Sep-16	06-Oct-16	26-Sep-16	06-Oct-16	0%	0	93																									
DS.2016.38	Comment on 2nd Submission	11	07-Oct-16	20-Oct-16	07-Oct-16	20-Oct-16	0%	0	93																									
DS.2016.40	3rd Submission	11	21-Oct-16	02-Nov-16	21-Oct-16	02-Nov-16	0%	0	93																									
DS.2016.42	Comment on 3rd Submission	11	03-Nov-16	15-Nov-16	03-Nov-16	15-Nov-16	0%	0	93																									
DS.2016.44	RSE Submitted to BD	3	16-Nov-16	19-Nov-16	16-Nov-16	19-Nov-16	0%	0	93																									
DS.2016.46	BD Submission & Approval	60	19-Nov-16	18-Jan-17	19-Nov-16	18-Jan-17	0%	0	116																									
Glass Wall with T Mullion (Kinked & Straight B1/F & G/F),CW-01a-03d																																		
DS.2016.52	1st BD Submission to Consultant	10	18-Oct-16	28-Oct-16	18-Oct-16	28-Oct-16	0%	0	93																									
DS.2016.54	Comment on 1st Submission	11	29-Oct-16	11-Nov-16	29-Oct-16	11-Nov-16	0%	0	93																									
DS.2016.56	2nd Submission	10	11-Nov-16	23-Nov-16	11-Nov-16	23-Nov-16	0%	0	93																									
DS.2016.58	Comment on 2nd Submission	12	23-Nov-16	07-Dec-16	23-Nov-16	07-Dec-16	0%	0	93																									
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.2016.74	Comment on 1st Submission	11	03-Oct-16	17-Oct-16	03-Oct-16	17-Oct-16	0%	0	87																									
DS.2016.76	2nd Submission	11	18-Oct-16	29-Oct-16	18-Oct-16	29-Oct-16	0%	0	87																									
DS.2016.78	Comment on 2nd Submission	12	31-Oct-16	12-Nov-16	31-Oct-16	12-Nov-16	0%	0	87																									
DS.2016.80	3rd Submission	9	14-Nov-16	23-Nov-16	14-Nov-16	23-Nov-16	0%	0	87																									
DS.2016.82	Comment on 3rd Submission	11	24-Nov-16	06-Dec-16	24-Nov-16	06-Dec-16	0%	0	87																									
Podium Ceramic Concrete Tubes & with Perforated Cladding,CE01a,01b,02a																																		
DS.2016.092	1st BD Submission to Consultant	9	19-Oct-16	29-Oct-16	19-Oct-16*	29-Oct-16	0%	0	88																									
DS.2016.094	Comment on 1st Submission	12	29-Oct-16	12-Nov-16	29-Oct-16	12-Nov-16	0%	0	88																									
DS.2016.096	2nd Submission	10	12-Nov-16	24-Nov-16	12-Nov-16	24-Nov-16	0%	0	88																									
DS.2016.098	Comment on 2nd Submission	12	24-Nov-16	08-Dec-16	24-Nov-16	08-Dec-16	0%	0	88																									
Garden Gallery Ceramic Cladding & Ceiling,CE-3a,3b,3c																																		
DS.2016.112	1st BD Submission to Consultant	9	19-Oct-16	29-Oct-16	19-Oct-16*	29-Oct-16	0%	0	163																									
DS.2016.114	Comment on 1st Submission	11	29-Oct-16	11-Nov-16	29-Oct-16	11-Nov-16	0%	0	163																									
DS.2016.116	2nd Submission	11	11-Nov-16	24-Nov-16	11-Nov-16	24-Nov-16	0%	0	163																									
DS.2016.118	Comment on 2nd Submission	11	24-Nov-16	07-Dec-16	24-Nov-16	07-Dec-16	0%	0	163																									

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016					December 2016								
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04	11	18	25							
DS.2021.78	Coated Glass production	60	31-Mar-16	11-Jun-16	02-Mar-16 A	13-Sep-16	90%	-78	54	DS.2021.78, Coated Glass production, Coated Glass production																												
Terracotta																																						
DS.2021.88	Production & delivery of Terracotta to Precast Factory	12	30-Apr-16	17-May-16	24-Mar-16 A	22-Sep-16	90%	-106	13	DS.2021.88, Production & delivery of Terracotta to Precast Fa																												
DS.2021.90	Production of Precast Panel & Delivery	30	23-Sep-16	22-Oct-16	23-Sep-16	22-Oct-16	0%	0	18	DS.2021.90, Production of Precast Pa																												
Installation																																						
DS.2021.94	Installation on Frame	8	24-Oct-16	01-Nov-16	24-Oct-16	01-Nov-16	0%	0	15	DS.2021.94, Installation on F																												
DS.2021.96	Glazing & Sealant Application	2	02-Nov-16	03-Nov-16	02-Nov-16	03-Nov-16	0%	0	15	DS.2021.96, Glazing & Seal																												
DS.2021.97	Inspection & Approval of Visual Mock Up	10	03-Nov-16	15-Nov-16	03-Nov-16	15-Nov-16	0%	0	15	DS.2021.97, Inspe																												
Hybrid Mock Up																																						
Glass Wall with T-Mullion,CW-02a,02b																																						
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	02-Sep-16	90%	-62	22	DS.2021.118, Production of Steel Frame and Alum Cladding, Production of S																												
Installation of Mock Up Sample																																						
DS.2021.124	Installation of Steel Frame and Flashing	10	31-Aug-16	10-Sep-16	31-Aug-16	10-Sep-16	0%	0	22	DS.2021.124, Installation of Steel Frame and Flashing																												
DS.2021.126	Glazing	2	12-Sep-16	13-Sep-16	12-Sep-16	13-Sep-16	0%	0	22	DS.2021.126, Glazing																												
DS.2021.128	Application of Structural Sealant	2	13-Sep-16	15-Sep-16	13-Sep-16	15-Sep-16	0%	0	22	DS.2021.128, Application of Structural Sealant																												
DS.2021.98	Inspection & Approval of Visual Mock Up	10	19-Sep-16	30-Sep-16	19-Sep-16	30-Sep-16	0%	0	22	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	03-Sep-16	50%	-54	114	DS.2021.146, Approval of Visual Mock Up Drawing, Approval of Visual Mock																												
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	15-Sep-16	70%	-100	99	DS.2021.152, Production of Steel Frame and Alum Cladding, Produ																												
Installation of Mock Up Sample																																						
DS.2021.158	Installation of Steel Frame and Flashing	6	17-Sep-16	23-Sep-16	17-Sep-16	23-Sep-16	0%	0	99	DS.2021.158, Installation of Steel Frame and Flashing																												
DS.2021.160	Install Glazing	2	23-Sep-16	26-Sep-16	23-Sep-16	26-Sep-16	0%	0	99	DS.2021.160, Install Glazing																												
DS.2021.162	Application of Structural Sealant	2	26-Sep-16	27-Sep-16	26-Sep-16	27-Sep-16	0%	0	99	DS.2021.162, Application of Structural Sealant																												
DS.2021.163	Inspection & Approval of Visual Mock Up	11	29-Sep-16	14-Oct-16	29-Sep-16	14-Oct-16	0%	0	99	DS.2021.163, Inspection & Approval of Visu																												
Garden Galley Visual Mock Up,ce-03a,03c																																						
Visual Mock Up Drawing Submission																																						
DS.2021.174	Approval of Sample of Terracotta	4	23-Aug-16	26-Aug-16	23-Aug-16 A	26-Aug-16 A	100%	0		DS.2021.174, Approval of Sample of Terracotta, Approval of Sample of Terracotta																												
DS.2021.172	Approval on Shop Drawings	10	31-Aug-16	10-Sep-16	31-Aug-16*	10-Sep-16	0%	0	89	DS.2021.172, Approval on Shop Drawings																												
Terracotta																																						
DS.2021.176	Production of Terracotta	24	08-Sep-16	07-Oct-16	08-Sep-16	07-Oct-16	0%	0	89	DS.2021.176, Production of Terracotta																												
DS.2021.178	Delivery of Terracotta to Precast Factory	1	20-Oct-16	20-Oct-16	20-Oct-16	20-Oct-16	0%	0	89	DS.2021.178, Delivery of Terracotta to																												
Installation																																						
DS.2021.187	Delivery of ceramic precast mullion to site	2	21-Oct-16	22-Oct-16	21-Oct-16	22-Oct-16	0%	0	89	DS.2021.187, Delivery of ceramic pre																												
DS.2021.188	Installation of Terracotta on Mock-up	6	25-Oct-16	31-Oct-16	25-Oct-16	31-Oct-16	0%	0	89	DS.2021.188, Installation of T																												
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 th	12	11-Oct-16	24-Oct-16	11-Oct-16*	24-Oct-16	0%	0	142	DS.2022.4, Sealant Ordering (Typic																												
Tower Facade - Glass Production & Fabrication																																						
DS.2022.6	Coated Glass Production	48	07-Oct-16	02-Dec-16	07-Oct-16*	02-Dec-16	0%	0	84	DS.20																												
Tower Facade - Curtain Wall glazed panel production and Fabricatioin																																						

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016				November 2016				December 2016				
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04	11			
DS.2026.26	Coated Glass Production	48	25-Oct-16	20-Dec-16	25-Oct-16	20-Dec-16	0%	0	37																							
Tower Facade - Curtain Wall glazed panel production and Fabricatioin																																
DS.2026.22	Die Making	48	07-Oct-16	02-Dec-16	07-Oct-16	02-Dec-16	0%	0	47																							
DS.2026.24	PVF2 Paint Ordering	12	07-Oct-16	21-Oct-16	07-Oct-16*	21-Oct-16	0%	0	95																							
Tower Facade - Terracotta																																
DS.2026.36	Ordering of Terracotta	11	07-Oct-16	18-Oct-16	07-Oct-16	18-Oct-16	0%	0	30																							
DS.2026.38	Die Making of Terracotta	24	18-Oct-16	15-Nov-16	18-Oct-16	15-Nov-16	0%	0	26																							
DS.2026.40	Production & delivery of Terracotta Mockup Sample	24	15-Nov-16	13-Dec-16	15-Nov-16	13-Dec-16	0%	0	26																							
Tower Facade - Precast Concrete Facade																																
Tower Facade - Precast Facade Die Making																																
DS.2026.42	Percast Concrete Mould Making	96	31-Aug-16	24-Dec-16	31-Aug-16	24-Dec-16	0%	0	16																							
Tower Facade - Installation																																
DS.2026.50	Erection of Testing Chamber	32	03-Oct-16	09-Nov-16	03-Oct-16*	09-Nov-16	0%	0	93																							
DS.2026.52	Bracket Installation	8	10-Nov-16	18-Nov-16	10-Nov-16	18-Nov-16	0%	0	93																							
Podium Facade Wall Performance Testing																																
Podium Facade - Drawing Submission																																
DS.2026.58	1st PMU Drawing Submission	11	20-Sep-16	04-Oct-16	20-Sep-16	04-Oct-16	0%	0	90																							
DS.2026.60	1st PMU Drawing Comment	11	04-Oct-16	18-Oct-16	04-Oct-16	18-Oct-16	0%	0	90																							
DS.2026.62	2nd PMU Drawing Submission	11	18-Oct-16	31-Oct-16	18-Oct-16	31-Oct-16	0%	0	90																							
DS.2026.64	Approval of Performance Mock Up Drawing	11	31-Oct-16	12-Nov-16	31-Oct-16	12-Nov-16	0%	0	98																							
Podium Facade - Submission of Testing Proposal																																
DS.2026.66	1st Submission of Testing Proposal	11	12-Nov-16	25-Nov-16	12-Nov-16	25-Nov-16	0%	0	98																							
DS.2026.68	1st comment	6	26-Nov-16	02-Dec-16	26-Nov-16	02-Dec-16	0%	0	98																							
Podium Facade - Ordering & Production of Material																																
DS.2026.74	Sealant Ordering (Typical two weeks time, tailor made need th	12	19-Nov-16	02-Dec-16	19-Nov-16	02-Dec-16	0%	0	127																							
Podium Facade - Glass Production & Fabrication																																
DS.2026.76	Coated Glass Production	48	19-Nov-16	17-Jan-17	19-Nov-16	17-Jan-17	0%	0	115																							
Podium Facade - Curtain Wall glazed panel production and Fabricatioin																																
DS.2026.80	Die Making	48	19-Nov-16	17-Jan-17	19-Nov-16	17-Jan-17	0%	0	73																							
Podium Facade - Terracotta																																
DS.2026.90	Ordering of Terracotta	11	19-Nov-16	02-Dec-16	19-Nov-16	02-Dec-16	0%	0	74																							
Podium Facade - Precast Concrete Facade																																
Podium Facade - Precast Facade Die Making																																
DS.2026.10	Percast Concrete Mould Making	96	19-Nov-16	17-Mar-17	19-Nov-16	17-Mar-17	0%	0	37																							
Kinked Glass Wall with T Mullion and Reflective Glass at B1,CW-02b																																
Kinked Glass Wall - Drawing Submission																																
DS.2026.122	1st Shop Drawing Submission	11	03-Oct-16	17-Oct-16	03-Oct-16*	17-Oct-16	0%	0	165																							
DS.2026.124	1st Shop Drawing Comment	11	17-Oct-16	29-Oct-16	17-Oct-16	29-Oct-16	0%	0	165																							
DS.2026.126	2nd Shop Drawing Submission	11	29-Oct-16	11-Nov-16	29-Oct-16	11-Nov-16	0%	0	165																							
DS.2026.128	Approval of Performance Mock Up Drawing	11	11-Nov-16	24-Nov-16	11-Nov-16	24-Nov-16	0%	0	165																							
Kinked Glass Wall - Submission of Testing Proposal																																
DS.2026.130	1st Submission of Testing Proposal	11	24-Nov-16	07-Dec-16	24-Nov-16	07-Dec-16	0%	0	165																							
Kinked Glass Wall - Ordering & Production of Material																																
DS.2026.138	Sealant Ordering (Typical two weeks time, tailor made need th	12	24-Nov-16	08-Dec-16	24-Nov-16	08-Dec-16	0%	0	186																							

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016					December 2016				
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04						
(Redland) Project Quality Plan																																		
DS.3240	PQP - 2nd Submission and Approval	12	31-Aug-16	13-Sep-16	31-Aug-16	13-Sep-16	0%	0	49	DS.3240, PQP - 2nd Submission and Approval																								
DS.3250	PQP - Approval of Project Quality Plan	0		13-Sep-16		13-Sep-16	0%	0	49	PQP - Approval of Project Quality Plan, PQP - Approval of Project Qua																								
(Redland) Production Method Statement																																		
DS.3290	PMS - 2nd Submission and Approval	12	31-Aug-16	13-Sep-16	31-Aug-16	13-Sep-16	0%	0	49	DS.3290, PMS - 2nd Submission and Approval																								
DS.3300	PMS - Approval of Production Method Statement	0		13-Sep-16		13-Sep-16	0%	0	49	PMS - Approval of Production Method Statement, PMS - Approval of P																								
(Redland) Drawing Submission and Approval																																		
DS.3340	2nd Submission and Approval	12	31-Aug-16	13-Sep-16	31-Aug-16	13-Sep-16	0%	0	49	DS.3340, 2nd Submission and Approval																								
DS.3350	Approval of Schematic Design Drawings	0		13-Sep-16		13-Sep-16	0%	0	49	Approval of Schematic Design Drawings, Approval of Schematic Desi																								
(Redland) BD Submission and Approval																																		
(Redland) BD Submission																																		
DS.3420	BD Comments and review	36	31-Aug-16	14-Oct-16	31-Aug-16	14-Oct-16	0%	0	25	DS.3420, BD Comments and review																								
DS.3410	BD Submission	0	31-Aug-16		31-Aug-16		0%	0	25	BD Submission, BD Submission, 31-Aug-16																								
DS.3430	Approval of BD Submission	0		14-Oct-16		14-Oct-16	0%	0	25	Approval of BD Submission, Approval of BD S																								
(Redland) Fixing Layout for ARUP's Onward Submission to BD																																		
DS.3450	BD Comments and review	36	31-Aug-16	14-Oct-16	31-Aug-16	14-Oct-16	0%	0	25	DS.3450, BD Comments and review																								
DS.3440	BD Submission	0	31-Aug-16		31-Aug-16		0%	0	25	BD Submission, BD Submission, 31-Aug-16																								
DS.3460	Approval of BD Submission	0		14-Oct-16		14-Oct-16	0%	0	25	Approval of BD Submission, Approval of BD S																								
(Redland) Shop Drawings																																		
DS.3500	2nd Submission and Approval	12	15-Oct-16	28-Oct-16	15-Oct-16	28-Oct-16	0%	0	25	DS.3500, 2nd Submission and A																								
DS.3510	Approval of Shop Drawings	0		28-Oct-16		28-Oct-16	0%	0	25	Approval of Shop Drawings, Appr																								
(Redland) Bulk Production, Fabrication and Delivery																																		
DS.3520	Procurements of Materials	90	29-Oct-16	17-Feb-17	29-Oct-16	17-Feb-17	0%	0	25																									
Structural Steel Trusses																																		
DS.1130	Steel Tuss - Procurement, Fabrication & Delivery	188	14-Jun-16	02-Mar-17	29-Jan-16 A	24-Oct-16	65%	93	589																									
MS.1000	Factory Pre-Inspection / Major truss delivery subject to site cor	0	31-Aug-16		29-Aug-16 A		100%	2		Factory Pre-Inspection / Major truss delivery subject to site condition, Factory																								
Design, Shop Dwgs, Materials, Method Statement & Welding)																																		
DS.1020	Steel Tuss - Incorporate Comments & Resubmit	30	30-Dec-15	28-Jan-16	09-Nov-15 A	15-Sep-16	95%	-231	862	DS.1020, Steel Tuss - Incorporate Comments & Resubmit, Steel T																								
DS.1030	Steel Tuss - Architect's Comment and Approval	75	29-Feb-16	13-May-16	03-Dec-15 A	30-Sep-16	95%	-140	847	DS.1030, Steel Tuss - Architect's Comment and Approv																								
Method Statement for Erection																																		
DS.1030.30e	3rd Submission & Approval of Method statement for Erection o	14	15-Aug-16	28-Aug-16	15-Aug-16 A	14-Sep-16	90%	-17	8	DS.1030.30e, 3rd Submission & Approval of Method statement for																								
Shop Drawings																																		
DS.1030.41	Shop Drawing submission and approval of Steelwork for Shear f	117	21-Dec-15	15-Apr-16	21-Dec-15 A	24-Sep-16	75%	-162	25	DS.1030.41, Shop Drawing submission and approval of Ste																								
Statutory Approval Status e.g. (BD & MTRC Approval)-1																																		
DS.7060b10	MTRC Review and Endorsement for ARUP to submit to BD	30	25-May-16	24-Jun-16	12-May-16 A	10-Sep-16	90%	-78	-11	DS.7060b10, MTRC Review and Endorsement for ARUP to submit to BD																								
DS.7060b11	BD issue endorsement to ARUP	14	11-Sep-16	24-Sep-16	11-Sep-16	24-Sep-16	0%	0	-11	DS.7060b11, BD issue endorsement to ARUP																								
Materials Procurements																																		
DS.1040	Steel Tuss - Procurement, Fabrication & Delivery	150	23-May-16	19-Oct-16	01-Oct-15 A	24-Oct-16	70%	-5	-2	DS.1040, Steel Tuss - Procurement																								
Fabrication & Delivery To Site																																		
DS.1050	Steel Tuss - First Batch Arrival on Site (Contract Requirement -	0	22-Sep-16		22-Sep-16		0%	0	-2	Steel Tuss - First Batch Arrival on Site (Contract Requirement																								
Temporary Support System for Trusses - Proprietary & Non Proprietary System																																		
DS.1040.68	Fabrication & Delivery of non-proprietary system	50	30-Jun-16	18-Aug-16	11-Jun-16 A	16-Sep-16	20%	-29	6	DS.1040.68, Fabrication & Delivery of non-proprietary system, Fa																								
Hanger Column																																		
DS.1040.85	Fabrication of Hanger Column Suspended from RC	43	10-Sep-16	22-Oct-16	10-Sep-16	22-Oct-16	0%	0	25	DS.1040.85, Fabrication of Hanger C																								

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016					December 2016									
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04											
DS.1040.80	Fabrication of Hanger Column Suspended from mega Truss	43	10-Sep-16	22-Oct-16	10-Sep-16	22-Oct-16	0%	0	68																														
DS.1040.86	Delivery of hanger column	0	23-Oct-16		23-Oct-16		0%	0	25																														
Composite Column																																							
DS.1040.91	Composite Column Fabrication	34	02-Jan-16	04-Feb-16	02-Jan-16 A	13-Sep-16	95%	-222	6																														
Steel Truss Support Fabrication																																							
DS.1056	Steel Truss Support Fabrication for Truss 3 (*C85 & C86)	21	25-Aug-16	14-Sep-16	19-Aug-16 A	14-Sep-16	53%	0	39																														
DS.1090	Steel Truss Support Fabrication for Truss 4 (*C94 & *C96)	21	15-Sep-16	05-Oct-16	19-Aug-16 A	05-Oct-16	30%	0	49																														
Steel Truss Support Delivery to Site																																							
DS.1130.10	Steel Truss Support for Truss # 5 (*C25)	0	06-Sep-16		06-Sep-16		0%	0	79																														
DS.1050.10	Steel Truss Support @ East Core Wall for Trusses # 1, 2 & 5	0	08-Sep-16		08-Sep-16		0%	0	11																														
DS.1055.10	Steel Truss Support for Truss # 1 & 2(Column 68 & Column 71)	0	24-Sep-16		24-Sep-16		0%	0	6																														
DS.1090.10	Steel Truss Support for Truss # 3 (*C85 & C86)	0	16-Oct-16		16-Oct-16		0%	0	39																														
DS.1110.10	Steel Truss Support for Truss # 4 (*C94 & *C96)	0	16-Oct-16		16-Oct-16		0%	0	39																														
Steel Truss Members Fabrication																																							
DS.1060.1	Steel Truss Fabrication for Truss # 1	69	30-Apr-16	07-Jul-16	23-Apr-16 A	11-Sep-16	90%	-66	3																														
DS.1120	Steel Truss Fabrication for Truss # 5	69	30-Apr-16	07-Jul-16	23-Apr-16 A	02-Oct-16	76%	-87	-1																														
DS.1070	Steel Truss Fabrication for Truss # 2	69	01-May-16	08-Jul-16	23-Apr-16 A	26-Sep-16	87%	-80	9																														
DS.1080	Steel Truss Fabrication for Truss # 3	69	05-May-16	12-Jul-16	23-Apr-16 A	15-Oct-16	52%	-95	-1																														
DS.1100	Steel Truss Fabrication for Truss # 4	69	13-May-16	20-Jul-16	09-May-16 A	15-Oct-16	12%	-87	19																														
Steel Truss Members Delivery to Site																																							
DS.1070.10	Steel Truss Members for Truss # 1	0	12-Sep-16		12-Sep-16		0%	0	3																														
DS.1080.10	Steel Truss Members for Truss # 2	0	27-Sep-16		27-Sep-16		0%	0	9																														
DS.1140.10	Steel Truss Members for Truss # 5	0	03-Oct-16		03-Oct-16		0%	0	-1																														
DS.1100.10	Steel Truss Members for Truss # 3	0	21-Oct-16		21-Oct-16		0%	0	33																														
DS.1120.10	Steel Truss Members for Truss # 4	0	04-Nov-16		04-Nov-16		0%	0	19																														
Building Services																																							
MVAC																																							
DS.3070	MVAC - Shop Drawings, Materials & Method Statements Submi	120	01-Dec-15	29-Mar-16	01-Dec-15 A	17-Sep-16	38%	-171	27																														
DS.3080	MVAC - CA Review & Comments	30	23-Aug-16	21-Sep-16	01-Apr-16 A	24-Sep-16	61%	-3	27																														
DS.3090	MVAC - Incorporate Comments & Resubmit	30	15-Sep-16	14-Oct-16	15-Apr-16 A	30-Sep-16	61%	14	27																														
DS.3110	MVAC - Procurement and Delivery	180	07-Oct-16	04-Apr-17	07-Oct-16	04-Apr-17	0%	0	27																														
DS.3100	MVAC - CA Review & Approval	30	13-Oct-16	11-Nov-16	02-May-16 A	06-Oct-16	39%	36	27																														
Electrical and ELV Systems																																							
DS.4120	Elect & ELV Systems - Shop Drawings and Materials Submissior	120	29-Feb-16	27-Jun-16	01-Dec-15 A	16-Sep-16	35%	-81	60																														
DS.4130	Elect & ELV Systems - CA Review & Comments	30	01-Aug-16	30-Aug-16	01-Apr-16 A	05-Sep-16	75%	-6	60																														
DS.4140	Elect & ELV Systems - Incorporate Comments & Resubmit	30	31-Aug-16	29-Sep-16	15-Apr-16 A	19-Sep-16	75%	10	60																														
DS.4150	Elect & ELV Systems - CA Review & Approval	30	30-Sep-16	29-Oct-16	16-May-16 A	03-Oct-16	45%	26	60																														
DS.4160	Elect & ELV Systems - Procurement and Delivery	150	04-Oct-16	02-Mar-17	04-Oct-16	02-Mar-17	0%	0	60																														
Fire Services																																							
DS.4010	FS - Shop Drawings and Materials Submission and Approval	120	01-Dec-15	29-Mar-16	01-Dec-15 A	12-Sep-16	57%	-167	63																														
DS.4020	FS - CA Review & Comments	30	01-Jun-16	30-Jun-16	15-Apr-16 A	20-Sep-16	58%	-82	61																														
DS.4030	FS - Incorporate Comments & Resubmit	30	01-Jul-16	30-Jul-16	22-Apr-16 A	26-Sep-16	34%	-58	61																														
DS.4040	FS - CA Review & Approval	30	31-Jul-16	29-Aug-16	16-May-16 A	02-Oct-16	25%	-34	61																														
DS.4050	FS - Procurement and Delivery	150	03-Oct-16	01-Mar-17	03-Oct-16	01-Mar-17	0%	0	61																														

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016					December 2016				
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04						
Plumbing and Drainage																																		
DS.3010	Plumbing & Drainage - Shop Drawings, Materials & Method Stat	90	30-Dec-15	28-Mar-16	30-Dec-15 A	16-Sep-16	47%	-172	45	DS.3010, Plumbing & Drainage - Shop Drawings, Materials & Met																								
DS.3020	Plumbing & Drainage - CA Review & Comments	30	01-Aug-16	30-Aug-16	01-Apr-16 A	20-Sep-16	40%	-21	45	DS.3020, Plumbing & Drainage - CA Review & Comments, Plun																								
DS.3030	Plumbing & Drainage - Incorporate Comments & Resubmit	30	31-Aug-16	29-Sep-16	14-Apr-16 A	04-Oct-16	83%	-5	45	DS.3030, Plumbing & Drainage - Incorporate Comm																								
DS.3040	Plumbing & Drainage - CA Review & Approval	30	30-Sep-16	29-Oct-16	02-May-16 A	18-Oct-16	44%	11	45	DS.3040, Plumbing & Drainage																								
DS.3050	Plumbing & Drainage - Procurement and Delivery	150	19-Oct-16	17-Mar-17	19-Oct-16 A	17-Mar-17	0%	0	45																									
Mechanical and Lifting Platform																																		
DS.5210	Lifting Platform - Shop Drawings, Materials & Method Statemen	90	31-May-16	28-Aug-16	01-Dec-15 A	30-Sep-16	30%	-33	457	DS.5210, Lifting Platform - Shop Drawings, Materials &																								
DS.5220	Lifting Platform - CA Review & Comments	30	01-Oct-16	30-Oct-16	01-Oct-16	30-Oct-16	0%	0	457	DS.5220, Lifting Platform - CA																								
DS.5230	Lifting Platform - Incorporate Comments & Resubmit	30	31-Oct-16	29-Nov-16	31-Oct-16	29-Nov-16	0%	0	457	DS.5230																								
Lifts and Escalator																																		
DS.5110	Lift & Escalator - Shop Drawings, Materials & Method Statemen	90	01-Dec-15	28-Feb-16	01-Dec-15 A	30-Sep-16	40%	-215	44	DS.5110, Lift & Escalator - Shop Drawings, Materials &																								
DS.5120	Lift & Escalator - CA Review & Comments	30	01-Aug-16	30-Aug-16	15-Apr-16 A	26-Sep-16	60%	-27	44	DS.5120, Lift & Escalator - CA Review & Comments, Lift &																								
DS.5130	Lift & Escalator - Incorporate Comments & Resubmit	30	31-Aug-16	29-Sep-16	30-Apr-16 A	10-Oct-16	50%	-11	44	DS.5130, Lift & Escalator - Incorporate Comme																								
DS.5140	Lift & Escalator- CA Review & Approval	30	30-Sep-16	29-Oct-16	16-May-16 A	24-Oct-16	40%	5	44	DS.5140, Lift & Escalator- CA Re																								
DS.5150	Lift & Escalator - Procurement and Delivery	300	25-Oct-16	20-Aug-17	25-Oct-16 A	20-Aug-17	0%	0	44																									
Art Lift (LT-11 & LT-13)																																		
DS.5020	Art Lift - Shop Drawings, Materials & Method Statements Subm	90	01-Dec-15	28-Feb-16	01-Dec-15 A	19-Sep-16	50%	-204	39	DS.5020, Art Lift - Shop Drawings, Materials & Method Stateme																								
DS.5025	Art Lift - CA Review & Comments	30	01-Aug-16	30-Aug-16	15-Apr-16 A	26-Sep-16	50%	-27	39	DS.5025, Art Lift - CA Review & Comments, Art Lift - CA R																								
DS.5030	Art Lift - Incorporate Comments & Resubmit	54	27-Sep-16	19-Nov-16	27-Sep-16	19-Nov-16	0%	0	39	DS.5030, Art Li																								
DS.5040	Art Lift - CA Review & Approval	30	20-Nov-16	19-Dec-16	20-Nov-16	19-Dec-16	0%	0	39																									
ABWF and Fitout																																		
Ceramic Tile																																		
DS.6010	Ceramic Tile - Shop Drawings, Materials Sample Submission	90	30-Nov-15	27-Feb-16	30-Nov-15 A	08-Sep-16	90%	-194	131	DS.6010, Ceramic Tile - Shop Drawings, Materials Sample Submission, C																								
DS.6020	Ceramic Tile - CA Review & Comments	30	09-Sep-16	08-Oct-16	09-Sep-16	08-Oct-16	0%	0	131	DS.6020, Ceramic Tile - CA Review & Comments																								
DS.6030	Ceramic Tile - Incorporate Comments & Resubmit	30	09-Oct-16	07-Nov-16	09-Oct-16	07-Nov-16	0%	0	131	DS.6030, Ceramic Tile -																								
DS.6040	Ceramic Tile - CA Review & Approval	30	08-Nov-16	07-Dec-16	08-Nov-16	07-Dec-16	0%	0	131	D																								
Soft and Hard Landscaping																																		
DS.7010	Landscaping - Shop Drawings, Materials & Method Statements	90	31-Aug-16	28-Nov-16	31-Aug-16	28-Nov-16	0%	0	147	DS.7010																								
DS.7000	Landscaping - Award Specialist Subcontractor	0	31-Aug-16		31-Aug-16		0%	0	147	Landscaping - Award Specialist Subcontractor, Landscaping - Award Specialist S																								
DS.7020	Landscaping - CA Review & Comments	30	29-Nov-16	28-Dec-16	29-Nov-16	28-Dec-16	0%	0	147																									
Design Detailing / Buildability Co-ordination																																		
Spatial Coordination for BIM / CSD / CBWD																																		
Basement																																		
B00.0010	Preparation and submission for BIM / CSD / CBWD at B1/F (Tea	60	01-Oct-15	29-Nov-15	01-Oct-15 A	14-Sep-16	75%	-290	18	B00.0010, Preparation and submission for BIM / CSD / CBWD at B1																								
B00.0030	Review, resubmission and approval for BIM / CSD / CBWD at B1	30	30-Nov-15	29-Dec-15	30-Nov-15 A	28-Sep-16	20%	-274	18	B00.0030, Review, resubmission and approval for BIM /																								
M+ Podium																																		
B00.0040	Preparation and submission for BIM / CSD / CBWD at G/F (Tea	60	30-Nov-15	28-Jan-16	30-Nov-15 A	29-Sep-16	50%	-245	8	B00.0040, Preparation and submission for BIM / CSD /																								
B00.0060	Review, resubmission and approval for BIM / CSD / CBWD at G,	30	31-Aug-16	29-Sep-16	31-Aug-16	29-Sep-16	0%	0	16	B00.0060, Review, resubmission and approval for BIM /																								
B00.0050	Preparation and submission for BIM / CSD / CBWD at 1/F (Tea	60	31-Aug-16	29-Oct-16	31-Aug-16	29-Oct-16	0%	0	19	B00.0050, Preparation and subr																								
B00.0080	Preparation and submission for BIM / CSD / CBWD at 1M/F (Tea	60	31-Aug-16	29-Oct-16	31-Aug-16	29-Oct-16	0%	0	8	B00.0080, Preparation and subr																								
B00.0120	Preparation and submission for BIM / CSD / CBWD at 3/F (Tea	60	31-Aug-16	29-Oct-16	31-Aug-16	29-Oct-16	0%	0	19	B00.0120, Preparation and subr																								
B00.0090	Preparation and submission for BIM / CSD / CBWD at 2/F (Tea	60	12-Sep-16	10-Nov-16	12-Sep-16	10-Nov-16	0%	0	19	B00.0090, Preparation																								
B00.0070	Review, resubmission and approval for BIM / CSD / CBWD at 1/	30	29-Sep-16	28-Oct-16	29-Sep-16	28-Oct-16	0%	0	18	B00.0070, Review, resubmission																								

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016				September 2016				October 2016				November 2016				December 2016			
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04	
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	
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																													
PM2	All non-digital way-finding signage	0		29-Sep-16		29-Sep-16	0%	0	848																			All non-digital way-finding signage, All non-digital way-f	
PM3	Digital signage at information counters	0		29-Sep-16		29-Sep-16	0%	0	848																			Digital signage at information counters, Digital signage	
External Works / Hard & Soft Landscape																													
PN2	Elements cooling main - ventilation intake shaft / maintenance	0	31-Aug-16		31-Aug-16		0%	0	878																			Elements cooling main - ventilation intake shaft / maintenance access modifica	
PN4	EMSD compliant design for canopy extension to G/F to L3 cano	0		31-Aug-16		31-Aug-16	0%	0	878																			EMSD compliant design for canopy extension to G/F to L3 canopy escalator, EM	
MEP-General Issues																													
PO6	Addition of 1 no. 1250TR chiller installation at M+ DCS plantroc	0		24-Oct-16		24-Oct-16	0%	0	823																			Addition of 1 no. 1250TR chiller inst	
Other Provisional Sums / Options for M+ Main Works Contract																													
PP2.2	Interface car park - ELS, Architectural and BS works	0		31-Aug-16		31-Aug-16	0%	0	723																			Interface car park - ELS, Architectural and BS works, Interface car park - ELS, A	
PP3.2	Sewage pumping station (SPS) - ELS, foundation, signage, buil	0		31-Aug-16		31-Aug-16	0%	0	878																			Sewage pumping station (SPS) - ELS, foundation, signage, builder's works, etc	
PP4	Sea water pump cell - basic Building Services provisions	0		31-Aug-16		31-Aug-16	0%	0	878																			Sea water pump cell - basic Building Services provisions, Sea water pump cell -	
PP5	BWIC / basic Building Services provisions for CLP transformer rc	0		31-Aug-16		31-Aug-16	0%	0	878																			BWIC / basic Building Services provisions for CLP transformer rooms, BWIC / ba	
PP6	CA/RSS M+PSO - Complete office accommodation and supporti	0		31-Aug-16		31-Aug-16	0%	0	878																			CA/RSS M+PSO - Complete office accommodation and supporting facilities, CA/	
PP7	Contractor's proposed of SOM and IPS	0		31-Aug-16		31-Aug-16	0%	0	878																			Contractor's proposed of SOM and IPS, Contractor's proposed of SOM and IPS,	
Preliminaries / Construction																													
Plant & Equipment																													
A00.2000	Erection of Tower Crane No. 2 and Testing - Ready for Operatio	15	15-Aug-16	05-Sep-16	02-Aug-16 A	20-Aug-16 A	100%	11																			A00.2000, Erection of Tower Crane No. 2 and Testing - Ready for Operatio		
A00.2100	Erection of Tower Crane No. 3 and Testing - Ready for Operatio	6	15-Aug-16	22-Aug-16	03-Aug-16 A	10-Aug-16 A	100%	9																				A00.2100, Erection of Tower Crane No. 3 and Testing - Ready for Operation, Erection	
Provision for Tower Crane																													
Tower Crane 2																													
A00.2015	Tower Crane 2 - Erection of Equipment	14	02-Sep-16	22-Sep-16	02-Aug-16 A	17-Aug-16 A	100%	24																			A00.2015, Tower Crane 2 - Erection of Equipment, Tower Cra		
A00.2025	Tower Crane 2 - Testing & Commissioning	2	23-Sep-16	24-Sep-16	18-Aug-16 A	19-Aug-16 A	100%	25																			A00.2025, Tower Crane 2 - Testing & Commissioning, Towe		
A00.2035	Tower Crane 2 - Commence Operation	0		24-Sep-16		20-Aug-16 A	100%	24																			Tower Crane 2 - Commence Operation, Tower Crane 2 - Cor		
Tower Crane 3																													
A00.2125	Tower Crane 3 - Erection of Equipment	5	02-Sep-16	08-Sep-16	03-Aug-16 A	06-Aug-16 A	100%	23																			A00.2125, Tower Crane 3 - Erection of Equipment, Tower Crane 3 - Ere		
A00.2135	Tower Crane 3 - Testing & Commissioning	1	09-Sep-16	09-Sep-16	08-Aug-16 A	09-Aug-16 A	100%	22																			A00.2135, Tower Crane 3 - Testing & Commissioning, Tower Crane 3 -		
A00.2145	Tower Crane 3 - Commence operation	0		10-Sep-16		10-Aug-16 A	100%	22																			Tower Crane 3 - Commence operation, Tower Crane 3 - Commence o		
Excavation & ELS																													
BD Milestones & BD Stages LOE																													
Portion M01																													
B10.3390	BD Stage 4 - Construct B2 slab for A5, B5 & Site formation for /	0	27-Apr-16	27-Apr-16	14-Jul-16 A	29-Oct-16	50%	-120	55																		BD Stage 4 - Construct B2 slab f		
B10.3400	BD Stage 5 - Construct B2 slab for A6, A7, A8, B6 & Site forma	0	28-Apr-16	28-Apr-16	28-Apr-16 A	09-Sep-16	90%	-87	40																		BD Stage 5 - Construct B2 slab for A6, A7, A8, B6 & Site formation for A		
B10.3420	BD Stage 7 - Construct B2 slab for A9, A10, A11, A12, B7, B8,	20	02-Sep-16	30-Sep-16	02-Sep-16	30-Sep-16	0%	0	46																		BD Stage 7 - Construct B2 slab for A9, A10, A11, A12,		

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016				October 2016				November 2016				December 2016	
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04
AEL North																												
Portion A6, A7, A10, A11																												
Portion A10-a																												
B10.2190	AEL North - ELS Stage 5 Portion A10a - 2nd layer struts	9	02-Sep-16	13-Sep-16	01-Aug-16 A	12-Aug-16 A	100%	23																				
B10.2200	AEL North - ELS Stage 5 Portion A10a - Trim Piles & Blinding	12	10-Sep-16	27-Sep-16	19-Aug-16 A	31-Aug-16 A	100%	18																				
Portion A10-b																												
B10.2160	AEL North - ELS Stage 5 Portion A10b - Trim Piles & Blinding	6	02-Sep-16	09-Sep-16	19-Aug-16 A	10-Sep-16	50%	-1	-4																			
Portion A11																												
B10.2210	AEL North - ELS Stage 5 Portion A11 - 1st layer struts	8	02-Sep-16	12-Sep-16	15-Aug-16 A	20-Aug-16 A	100%	16																				
B10.2250	AEL North - ELS Stage 5 Portion A11 - Trim Piles & Blinding	5	05-Sep-16	10-Sep-16	05-Sep-16	10-Sep-16	0%	0	-6																			
B10.2240	AEL North - ELS Stage 5 Portion A11 - 2nd layer struts	10	06-Sep-16	20-Sep-16	27-Aug-16 A	31-Aug-16 A	100%	13																				
Portion B8 & A9, B9																												
Portion B8																												
B10.2320	AEL North - ELS Stage 5 Site Formation (B8) - 2nd layer struts	8	10-Sep-16	22-Sep-16	10-Aug-16 A	26-Aug-16 A	100%	18																				
Portion B9																												
B10.2390	AEL North - ELS Stage 5 Site Formation (B9) - 2nd layer trim	5	18-Aug-16	23-Aug-16	04-Aug-16 A	09-Aug-16 A	100%	11																				
B10.2400	AEL North - ELS Stage 5 Site Formation (B9) - 2nd layer struts	8	06-Sep-16	17-Sep-16	10-Aug-16 A	18-Aug-16 A	100%	21																				
Portion A9																												
B10.2360	AEL North - ELS Stage 5 Site Formation (A9) - 2nd layer struts	8	10-Sep-16	22-Sep-16	10-Aug-16 A	18-Aug-16 A	100%	24																				
Portion A8, B6, A12, B7																												
B10.3580	AEL North - ELS Stage 5 Site Formation (Portion A12, B7)	30	02-Sep-16	18-Oct-16	15-Aug-16 A	29-Oct-16	10%	-8	55																			
Portion A12																												
B10.3910	AEL North - ELS Stage 5 Site Formation (Portion A12) - 1st Lay	2	02-Sep-16	05-Sep-16	15-Aug-16 A	19-Aug-16 A	100%	11																				
B10.3930	AEL North - ELS Stage 5 Site Formation (Portion A12) - Trim &	5	06-Sep-16	12-Sep-16	06-Sep-16	12-Sep-16*	0%	0	-6																			
B10.3920	AEL North - ELS Stage 5 Site Formation (Portion A12) - 2nd La	5	06-Sep-16	12-Sep-16	25-Aug-16 A	28-Aug-16 A	100%	10																				
AEL South																												
DCS																												
B10.2220	DCS - Remove 1st Layer Struts at +4.2mPD	11	02-Sep-16	17-Sep-16	02-Sep-16	17-Sep-16	0%	0	455																			
B10.2230	DCS - Backfilling and Install Access Hatch and Misc. Works	50	19-Sep-16	25-Nov-16	19-Sep-16	25-Nov-16	0%	0	455																			
AEL South except DCS																												
B10.1090	AEL South - Plant Room - Excavate to +2.45mPD for Plant Roo	16	02-Sep-16	24-Sep-16	02-Sep-16	24-Sep-16	0%	0	148																			
AEL North East of Portion A10 (for Area M12 h/o)																												
C10.0390	Vacate Portion M12 for Lyric Contractor for Foundations (App.D	0		02-Sep-16		02-Sep-16	0%	0	61																			
ICP																												
B10.3240	ICP - Lateral Support	50	30-Jul-16	15-Oct-16	30-May-16	01-Nov-16	15%	-12	-34																			
B10.3220	ICP - Pile Cap Construction of Area A	25	30-Jul-16	05-Sep-16	16-Jul-16 A	13-Oct-16	70%	-23	-34																			
B10.3230	ICP - Pile Cap Construction of Area B	25	14-Oct-16	14-Nov-16	27-Aug-16 A	31-Oct-16	10%	12	-33																			
B10.3250	ICP - Complete Excavation & Lateral Support	0		01-Nov-16		01-Nov-16	0%	0	-34																			
Structures																												
Basement Structures / Sub-Structure																												
Pilecaps																												
AEL North																												
Stage 3 - Pilecap (A4,A5,B4,B5)																												

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016				November 2016				December 2016		
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04		
Pilecap (A4 & A5)																														
B10.2060p	AEL North - ELS Stage 4 - Extend 1st height of basement wall	10	03-Aug-16	13-Aug-16	28-Jul-16 A	09-Sep-16	30%	-23	7	B10.2060p, AEL North - ELS Stage 4 - Extend 1st height of basement wall																				
Pilecap (B4 & B5)																														
B10.2070m	AEL North - ELS Stage 4 - Extend 1st height of basement wall	12	15-Aug-16	27-Aug-16	08-Aug-16 A	19-Sep-16	10%	-18	3	B10.2070m, AEL North - ELS Stage 4 - Extend 1st height of basement wall																				
B10.2070l	AEL North - Complete Pilecaps for RC Columns of Truss T1 & T2	0		18-Aug-16		18-Aug-16 A	100%	0		AEL North - Complete Pilecaps for RC Columns of Truss T1 & T2, AEL North - Complete Pilecaps for RC Columns of Truss T1 & T2																				
Stage 4 to 7: ELS & Excavation (A6, A7, A8, A9, A10, A11, A12 & B6, B7, B8, B9)																														
Pilecaps - Portion (B8, A9 & B9)																														
B10.3103	AEL North - BD Stage 6 - Pile Cap Construction (Portion B8 & A9)	30	30-Jul-16	12-Sep-16	04-Jul-16 A	15-Sep-16	5%	-2	0	B10.3103, AEL North - BD Stage 6 - Pile Cap Construction (Portion B8 & A9)																				
B10.3104	AEL North - BD Stage 6 - Underground Drainage (Portion B8 & A9)	12	02-Sep-16	19-Sep-16	01-Aug-16 A	26-Aug-16 A	100%	16		B10.3104, AEL North - BD Stage 6 - Underground Drainage (Portion B8 & A9)																				
Pile Cap Portion B8																														
B10.3113	AEL North - BD Stage 6 - Pile Cap Construction (Portion B8)	10	07-Sep-16	20-Sep-16	07-Aug-16 A	20-Aug-16 A	100%	22		B10.3113, AEL North - BD Stage 6 - Pile Cap Construction (Portion B8)																				
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	B10.3114, AEL North - BD Stage 6 - Underground Drainage (Portion B8)																				
Pile Cap Portion B9																														
B10.3134	AEL North - BD Stage 6 - Pile Cap Construction (Portion B9)	12	31-Aug-16	13-Sep-16	19-Aug-16 A	10-Sep-16	20%	2	4	B10.3134, AEL North - BD Stage 6 - Pile Cap Construction (Portion B9)																				
B10.3144	AEL North - BD Stage 6 - Underground Drainage (Portion B9)	4	12-Sep-16	15-Sep-16	22-Aug-16 A	31-Aug-16 A	100%	14		B10.3144, AEL North - BD Stage 6 - Underground Drainage (Portion B9)																				
Pilecaps - Portion (A10a, A10b, A11 & A12)																														
B10.3590	AEL North - BD Stage 6 - Pile Cap Construction (Portion A10, A10b, A11 & A12)	24	30-Jul-16	03-Sep-16	01-Jul-16 A	22-Sep-16	10%	-12	617	B10.3590, AEL North - BD Stage 6 - Pile Cap Construction (Portion A10, A10b, A11 & A12)																				
B10.3630	AEL North - BD Stage 6 - Pile Cap Construction (Portion B7)	9	02-Sep-16	13-Sep-16	02-Sep-16	13-Sep-16	0%	0	46	B10.3630, AEL North - BD Stage 6 - Pile Cap Construction (Portion B7)																				
B10.3640	AEL North - BD Stage 6 - Underground Drainage (Portion B7)	9	02-Sep-16	13-Sep-16	02-Sep-16	13-Sep-16	0%	0	52	B10.3640, AEL North - BD Stage 6 - Underground Drainage (Portion B7)																				
B10.3600	AEL North - BD Stage 6 - Underground Drainage (Portion A10, A10b, A11 & A12)	11	12-Sep-16	27-Sep-16	12-Sep-16	27-Sep-16	0%	0	617	B10.3600, AEL North - BD Stage 6 - Underground Drainage (Portion A10, A10b, A11 & A12)																				
Pile Cap Portion A10a																														
B10.3790	AEL North - BD Stage 6 - Pile Construction (Portion A10a)	5	02-Sep-16	08-Sep-16	13-Aug-16 A	22-Sep-16	70%	-9	14	B10.3790, AEL North - BD Stage 6 - Pile Construction (Portion A10a)																				
B10.3900	AEL North - BD Stage 6 - Underground Drainage (Portion A10a)	5	15-Sep-16	22-Sep-16	15-Sep-16	22-Sep-16	0%	0	621	B10.3900, AEL North - BD Stage 6 - Underground Drainage (Portion A10a)																				
Pile Cap Portion A11																														
B10.3710	AEL North - BD Stage 6 - Pile Cap Construction (Portion A11)	7	12-Sep-16	20-Sep-16	12-Sep-16	20-Sep-16	0%	0	22	B10.3710, AEL North - BD Stage 6 - Pile Cap Construction (Portion A11)																				
B10.3720	AEL North - BD Stage 6 - Underground Drainage (Portion A11)	7	12-Sep-16	20-Sep-16	12-Sep-16	20-Sep-16	0%	0	613	B10.3720, AEL North - BD Stage 6 - Underground Drainage (Portion A11)																				
Pile Cap Portion A12																														
B10.3730	AEL North - BD Stage 6 - Pile Cap Construction (Portion A12)	7	13-Sep-16	21-Sep-16	13-Sep-16	21-Sep-16	0%	0	21	B10.3730, AEL North - BD Stage 6 - Pile Cap Construction (Portion A12)																				
B10.3740	AEL North - BD Stage 6 - Underground Drainage (Portion A12)	7	13-Sep-16	21-Sep-16	13-Sep-16	21-Sep-16	0%	0	612	B10.3740, AEL North - BD Stage 6 - Underground Drainage (Portion A12)																				
Pilecaps - Portion (B6)																														
B10.3620	AEL North - BD Stage 5 - Underground Drainage (Portion B6)	12	02-Sep-16	19-Sep-16	02-Sep-16	19-Sep-16	0%	0	37	B10.3620, AEL North - BD Stage 5 - Underground Drainage (Portion B6)																				
RC Structure for Water Tank																														
B10.3355	AEL North - Construct Water Tank Part 2 (West of Portion B1)	35	02-Sep-16	25-Oct-16	02-Sep-16	25-Oct-16	0%	0	600	B10.3355, AEL North - Construct Water Tank Part 2 (West of Portion B1)																				
B2/F Slabs																														
B2 Slab - Portion (B8 & A9)																														
B10.3490	AEL North - B2 Slab - Stage 7 (Portion A9)	11	02-Sep-16	14-Sep-16	02-Sep-16	14-Sep-16	0%	0	0	B10.3490, AEL North - B2 Slab - Stage 7 (Portion A9)																				
B10.3530	AEL North - B2 Slab - Stage 7 (Portion B8)	9	08-Sep-16	20-Sep-16	08-Sep-16*	20-Sep-16*	0%	0	1	B10.3530, AEL North - B2 Slab - Stage 7 (Portion B8)																				
B2 Slab - Portion (B9)																														
B10.3500	AEL North - B2 Slab - Stage 7 (Portion B9)	9	01-Sep-16	10-Sep-16	01-Sep-16	10-Sep-16	0%	0	4	B10.3500, AEL North - B2 Slab - Stage 7 (Portion B9)																				
B2 Slab - Portion (A10a, A10b, A11 & A12)																														
B10.3075	AEL North - B2 Slab - Stage 7 (Portion A11)	6	21-Sep-16	28-Sep-16	21-Sep-16	28-Sep-16*	0%	0	25	B10.3075, AEL North - B2 Slab - Stage 7 (Portion A11)																				
B10.3085	AEL North - B2 Slab - Stage 7 (Portion A12)	6	22-Sep-16	30-Sep-16	22-Sep-16	30-Sep-16*	0%	0	18	B10.3085, AEL North - B2 Slab - Stage 7 (Portion A12)																				
B10.3035	AEL North - B2 Slab - Stage 7 (Portion A10b)	10	23-Sep-16	08-Oct-16	23-Sep-16	08-Oct-16*	0%	0	14	B10.3035, AEL North - B2 Slab - Stage 7 (Portion A10b)																				
B10.3045	AEL North - B2 Slab - Stage 7 (Portion A10a)	10	23-Sep-16	08-Oct-16	23-Sep-16	08-Oct-16	0%	0	54	B10.3045, AEL North - B2 Slab - Stage 7 (Portion A10a)																				

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016				December 2016		
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04			
B10.3005	AEL North - B2 Slab - Stage 7 (Portion A10, A11, A12)	7	23-Sep-16	30-Sep-16	23-Sep-16	30-Sep-16	0%	0	23																						
B2 Slab - Portion (B6 & B7)																															
B10.3022	AEL North - B2 Slab - Stage 5 (Portion B6)	7	10-Sep-16	20-Sep-16	10-Sep-16	20-Sep-16	0%	0	34																						
B10.3023	AEL North - B2 Slab - Stage 7 (Portion B7)	11	15-Sep-16	30-Sep-16	15-Sep-16	30-Sep-16	0%	0	46																						
B10.3024	Complete B2 Slab (exclude AEL Zone)	0		30-Sep-16		30-Sep-16	0%	0	46																						
B1/F Slab - Walls, Columns & B1/F Slabs																															
AEL North - B1/F Slab other than AEL Zone																															
B10.3055	AEL North - Wall, Column & B1 Slab (Portion B1B)	15	15-Mar-16	05-Apr-16	30-Mar-16 A	13-Sep-16	85%	-109	19																						
B10.3060	AEL North - Wall, Column & B1 Slab (Portion B1C)	34	31-May-16	23-Jul-16	24-Mar-16 A	05-Sep-16	85%	-29	136																						
B10.3520	AEL North - Wall, Column & B1 Slab (Portion B1E)	22	31-May-16	04-Jul-16	16-Apr-16 A	17-Sep-16	75%	-49	24																						
B10.3540	AEL North - Wall, Column & B1 Slab (Portion B1F)	20	05-Aug-16	02-Sep-16	01-Jul-16 A	19-Sep-16	80%	-11	3																						
B10.3525	AEL North - Wall, Column & B1 Slab (Portion B1E-5)	18	05-Aug-16	29-Aug-16	15-Jul-16 A	09-Sep-16	80%	-7	34																						
B10.3690	AEL North - Wall, Column & B1 Slab (Portion B1R)	20	08-Sep-16	08-Oct-16	08-Sep-16	08-Oct-16	0%	0	4																						
B10.3065	AEL North - Wall, Column & B1 Slab (Portion B1D)	19	15-Sep-16	15-Oct-16	15-Aug-16 A	29-Sep-16	15%	9	9																						
B10.3560	AEL North - Wall, Column & B1 Slab (Portion B1G) (Portion A6,	14	20-Sep-16	13-Oct-16	20-Sep-16	13-Oct-16	0%	0	3																						
B10.3550	AEL North - Wall, Column & B1 Slab (Portion B1J) (Portion B6)	10	22-Sep-16	07-Oct-16	22-Sep-16	07-Oct-16	0%	0	34																						
B10.3680	AEL North - Wall, Column & B1 Slab (Portion B1L) (Access Ram	26	22-Oct-16	22-Nov-16	22-Oct-16	22-Nov-16	0%	0	85																						
AEL North - B1/F Slab for Truss T1, T2 & T5 Erection																															
B10.3090	AEL North - Wall, Column & B1 Slab (Portion A4 & A5)	18	22-Aug-16	17-Sep-16	22-Aug-16 A	27-Sep-16	0%	-7	140																						
C10.0120	AEL North - Construct Found Space Basement Wall and Cols to	15	02-Sep-16	23-Sep-16	02-Sep-16	23-Sep-16	0%	0	588																						
AEL North - B1/F Slab for CSF & RDE (North of GL 1)																															
B10.3170	AEL North - Wall, Column & B1 Slab (Portion B1K) (Portion A12	12	03-Oct-16	21-Oct-16	03-Oct-16	21-Oct-16	0%	0	46																						
B10.3150	AEL North - Wall, Column & B1 Slab (Portion B1H) (Portion A10	45	14-Oct-16	07-Dec-16	14-Oct-16	07-Dec-16	0%	0	3																						
AEL South - B1/F Slab for DCS to facilitate Truss Erection																															
B10.2135	AEL South (DCS) - B1 Floor Slab at ~+6.05mPD - Bay 2	11	03-Aug-16	17-Aug-16	29-Jul-16 A	02-Sep-16*	95%	-12	191																						
B10.2145	AEL South (DCS) - B1 Floor Slab at ~+6.05mPD - Bay 3	11	31-Aug-16	15-Sep-16	09-Aug-16 A	09-Sep-16	60%	3	620																						
B10.2115	AEL South (DCS) - Remove 2nd Layer Struts at 0.0mPD of DCS	8	02-Sep-16	12-Sep-16	02-Sep-16	12-Sep-16	0%	0	10																						
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	14-Sep-16	30%	-21	-15																						
B10.3310	AEL South - Construct Basement Road Wall between PC 109 &	17	02-Sep-16	26-Sep-16	02-Sep-16	26-Sep-16	0%	0	172																						
B10.3290	AEL South - Construct Basement Road Wall between PC 96 & P	17	02-Sep-16	26-Sep-16	02-Sep-16	26-Sep-16	0%	0	172																						
B10.1040	AEL South - Construct Core Wall on PC96 from 1/F to 1M/F Lev	5	15-Sep-16	22-Sep-16	15-Sep-16	22-Sep-16	0%	0	-9																						
B10.3300	AEL South - Construct External Wall between PC 96 & PC105 tc	25	27-Sep-16	03-Nov-16	27-Sep-16	03-Nov-16	0%	0	172																						
B10.3315	AEL South - Construct Walls, Column & Staircases to G/F Level	27	11-Oct-16	14-Nov-16	11-Oct-16	14-Nov-16	0%	0	172																						
B10.3320	AEL South - Construct G/F slab between PC 105, 109 & 116	16	08-Nov-16	25-Nov-16	08-Nov-16	25-Nov-16	0%	0	172																						
Podium Super-Structures																															
Trusses																															
AEL Tunnel Zone - Trusses 1																															
C10.0145	AEL Tunnel Zone - Construct RC Column for Steel Trusses T1	21	22-Aug-16	15-Sep-16	22-Aug-16 A	30-Sep-16	40%	-13	-13																						
C10.0155	AEL Tunnel Zone - Truss 1 Construction Summary	117	11-Oct-16	02-Mar-17	11-Oct-16	02-Mar-17	0%	0	-13																						
C10.0160	AEL Tunnel Zone - Truss 1 Concreting of 1st pour of bottom ch	12	11-Oct-16	24-Oct-16	11-Oct-16	24-Oct-16	0%	0	-13																						
C10.0150	AEL Tunnel Zone - Erection of Temp Working Platform and Fals	50	13-Oct-16	09-Dec-16	12-Jul-16 A	08-Oct-16	20%	52	-13																						
C10.0185	AEL Tunnel Zone - Truss 1 install bottom steel plates	24	25-Oct-16	21-Nov-16	25-Oct-16	21-Nov-16	0%	0	-13																						
C10.0190	AEL Tunnel Zone - Truss 1 install temp platform, top nodes & ir	24	22-Nov-16	19-Dec-16	22-Nov-16	19-Dec-16	0%	0	-13																						

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016					December 2016				
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04	11	18	25			
AEI Tunnel Zone -Trusses 2																																		
C10.0161	AEI Tunnel Zone - Construct RC Column for Steel Trusses T2	22	22-Aug-16	15-Sep-16	22-Aug-16 A	05-Oct-16	20%	-15	-4	C10.0161, AEI Tunnel Zone - Construct RC Column																								
C10.0170	AEI Tunnel Zone - Truss 2 Concreting of 1st pour of bottom ch	12	18-Oct-16	31-Oct-16	18-Oct-16	31-Oct-16	0%	0	-13	C10.0170, AEI Tunnel Zone -																								
C10.0165	AEI Tunnel Zone - Truss 2 Construction Summary	125	18-Oct-16	18-Mar-17	18-Oct-16	18-Mar-17	0%	0	-13																									
C10.0162	AEI Tunnel Zone - Erection of Temp Working Platform and Fals	50	29-Oct-16	28-Dec-16	12-Jul-16 A	08-Oct-16	20%	66	-1																									
C10.0198	AEI Tunnel Zone - Truss 2 install bottom steel plates	24	01-Nov-16	28-Nov-16	01-Nov-16	28-Nov-16	0%	0	-13	C10.0198, AEI Tunnel Zone -																								
C10.0200	AEI Tunnel Zone - Truss 2 install temp. platform, top nodes & i	24	29-Nov-16	28-Dec-16	29-Nov-16	28-Dec-16	0%	0	-13																									
AEI Tunnel Zone -Trusses 5																																		
C10.0168	AEI Tunnel Zone - Construct Composite Columns for Truss T5	26	06-Aug-16	06-Sep-16	23-Jul-16 A	17-Sep-16	40%	-10	1	C10.0168, AEI Tunnel Zone - Construct Composite Columns for																								
C10.0180	AEI Tunnel Zone - Truss 5 Concreting of 1st pour of bottom ch	12	04-Oct-16	18-Oct-16	04-Oct-16	18-Oct-16	0%	0	-11	C10.0180, AEI Tunnel Zone - Truss 5 Co																								
C10.0175	AEI Tunnel Zone - Truss 5 Construction Summary	105	04-Oct-16	10-Feb-17	04-Oct-16	10-Feb-17	0%	0	-6																									
C10.0215	AEI Tunnel Zone - Truss 5 install bottom steel plates	24	19-Oct-16	15-Nov-16	19-Oct-16	15-Nov-16	0%	0	-6	C10.0215, AEI Tun																								
C10.0172	AEI Tunnel Zone - Erection of Temp Working Platform and Fals	50	29-Oct-16	28-Dec-16	12-Jul-16 A	03-Oct-16	40%	71	-11																									
C10.0220	AEI Tunnel Zone - Truss 5 install temp. platform, top nodes & i	24	16-Nov-16	13-Dec-16	16-Nov-16	13-Dec-16	0%	0	-6																									
C10.0225	AEI Tunnel Zone - Truss 5 Concreting of 2nd pour of bottom ch	15	26-Nov-16	13-Dec-16	26-Nov-16	13-Dec-16	0%	0	-6																									
AEI South - Trusses 3																																		
B6A.1999	AEI Tunnel Zone - Construct Composite/RC Columns for Truss	20	15-Aug-16	06-Sep-16	08-Aug-16 A	19-Sep-16	20%	-10	10	B6A.1999, AEI Tunnel Zone - Construct Composite/RC Columns																								
B6A.2000	AEI South - Erection of Temp Working Platform and Falsework	46	05-Sep-16	31-Oct-16	05-Sep-16*	31-Oct-16	0%	0	10	B6A.2000, AEI South - Erectio																								
B6A.2030	AEI South - Truss 3 Concreting of 1st pour of bottom chord (75	12	05-Nov-16	18-Nov-16	05-Nov-16	18-Nov-16	0%	0	10	B6A.2030, AEI S																								
B6A.2020	AEI South - Truss 3 Construction Summary	135	05-Nov-16	22-Apr-17	05-Nov-16	22-Apr-17	0%	0	10																									
B6A.2045	AEI South - Truss 3 install bottom steel plates	24	19-Nov-16	16-Dec-16	19-Nov-16	16-Dec-16	0%	0	10																									
AEI South - Trusses 4																																		
B6A.2024	AEI Tunnel Zone - Construct Composite Columns for Truss T4	21	15-Aug-16	07-Sep-16	08-Aug-16 A	15-Sep-16	30%	-7	20	B6A.2024, AEI Tunnel Zone - Construct Composite Columns for Tr																								
B6A.2025	AEI South - Erection of Temp Working Platform and Falsework	46	05-Sep-16	31-Oct-16	05-Sep-16	31-Oct-16	0%	0	18	B6A.2025, AEI South - Erectio																								
B6A.2040	AEI South - Truss 4 Concreting of 1st pour of bottom chord (75	12	05-Nov-16	18-Nov-16	05-Nov-16	18-Nov-16	0%	0	10	B6A.2040, AEI S																								
B6A.2035	AEI South - Truss 4 Construction Summary	105	05-Nov-16	14-Mar-17	05-Nov-16	14-Mar-17	0%	0	10																									
B6A.2058	AEI South - Truss 4 install bottom steel plates	24	19-Nov-16	16-Dec-16	19-Nov-16	16-Dec-16	0%	0	10																									
G/F Slabs - Walls, Columns & G/F Slab																																		
AEI North																																		
B20.0000	Podium G/F Portion GF1A - Wall, Column & G/F slab (GL 8-10/.	18	11-Oct-16	31-Oct-16	11-Oct-16	31-Oct-16	0%	0	5	B20.0000, Podium G/F Portion																								
B20.0015	Podium G/F Portion GF1 - Wall, Column & G/F slab (GL 4-7/A-I	23	15-Oct-16	10-Nov-16	15-Oct-16	10-Nov-16	0%	0	9	B20.0015, Podium G/F																								
B20.0005	Podium G/F Portion GF1 Tower Footprint - Wall, Column & Stru	14	25-Oct-16	09-Nov-16	25-Oct-16	09-Nov-16	0%	0	5	B20.0005, Podium G/F																								
B20.0050	Podium G/F Portion GF2 - Wall, Column & G/F slab (GL 1-4/A-I	23	11-Nov-16	07-Dec-16	11-Nov-16	07-Dec-16	0%	0	9	B																								
1/F Slabs - Walls, Columns & 1/F Slab																																		
AEI North																																		
B20.0425	Podium 1/F Tower Footprint (Block A) - Core Wall, Column & 1/	18	10-Nov-16	30-Nov-16	10-Nov-16	30-Nov-16	0%	0	5	B20.04																								
SPS Structures (include Excavation)																																		
D01.3010	SPS - Construct Basement Structure	100	01-Aug-16	28-Nov-16	25-Jul-16 A	30-Nov-16	10%	-2	-83	D01.30																								
ICP Structures (include Excavation)																																		
A3980	ICP - ELS works (Provisional)	110	31-May-16	12-Nov-16	20-May-16	19-Dec-16	30%	-31	-75																									
A4490	ICP - Structure works	244	20-Dec-16	18-Oct-17	25-Jul-16 A	03-Oct-17	5%	12	-83																									
Building Services																																		
M+ Basement Building Service																																		

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016					December 2016				
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04						
B2/F MEP																																		
First Fix																																		
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	179																									
B40.8995	B2/F - Building Services - 1st Fix - Summary	234	10-Nov-16	25-Aug-17	10-Nov-16	25-Aug-17	0%	0	16																									
B40.8985	Early Access for Building Services (1st Fix)	0	10-Nov-16		10-Nov-16		0%	0	179																									
ABWF																																		
M+ Basement ABWF																																		
B2/F ABWF																																		
B30.0006	B2/F Zone A - Builder's Work	42	20-Sep-16	09-Nov-16	20-Sep-16	09-Nov-16	0%	0	146																									
B30.0004	Early Access date for Builders Works at B2/F M+ Basement	0	20-Sep-16		20-Sep-16		0%	0	146																									
B30.0020	B2/F Zone C - Builder's Work	42	14-Oct-16	01-Dec-16	14-Oct-16	01-Dec-16	0%	0	111																									
B30.0040	B2/F Zone E - Builder's Work	42	31-Oct-16	17-Dec-16	31-Oct-16	17-Dec-16	0%	0	132																									
B30.0050	B2/F Zone F - Builder's Work	42	02-Nov-16	20-Dec-16	02-Nov-16	20-Dec-16	0%	0	118																									
B30.0010	B2/F Zone B - Builder's Work	42	15-Nov-16	05-Jan-17	15-Nov-16	05-Jan-17	0%	0	119																									
B1/F ABWF																																		
B30.1002	Early Access date for Builders Works at B1/F M+ Basement	0	28-Nov-16		28-Nov-16		0%	0	181																									
B30.1004	B1/F Zone A - Builder's Work	42	28-Nov-16	18-Jan-17	28-Nov-16	18-Jan-17	0%	0	181																									
M+ Podium ABWF																																		
3/F M+ Tower																																		
B30.9440	3/F M+ Tower (Block B) - Builder's Works	45	31-Aug-16	25-Oct-16	31-Aug-16	25-Oct-16	0%	0	304																									
External Works																																		
M+ External Works																																		
Utilities																																		
Drainage																																		
EW1045	Construct M+ manholes S1.1, S3.2, S3.3, S3.4 (terminal)	91	02-Sep-16	01-Dec-16	02-Sep-16	01-Dec-16	0%	0	708																									
EW1010	Construct the DN375 and DN600 storm drains within the At-gr.	75	02-Sep-16	12-Dec-16	02-Sep-16	12-Dec-16	0%	0	13																									
Storm Drain DN600 at Portion M45																																		
Storm Drain along Gridline D'-E'/1'-2'																																		
EW1700	Fence off work area for DN600 storm drain excavation	1	02-Sep-16	02-Sep-16	02-Sep-16	02-Sep-16	0%	0	263																									
EW1750	PIW handover of WHC6_1c for M+ connection	0		02-Sep-16		02-Sep-16*	0%	0	-40																									
EW1705	Excavate trial trench for existing Underground Utilities	14	02-Sep-16	22-Sep-16	02-Sep-16	22-Sep-16	0%	0	263																									
EW1708	Intall support to exisiting Underground Utilities	7	23-Sep-16	03-Oct-16	23-Sep-16	03-Oct-16	0%	0	263																									
EW1710	Excavate trench for DN600 and install shoring	10	04-Oct-16	20-Oct-16	04-Oct-16	20-Oct-16	0%	0	263																									
EW1730	Lay down DN600 pipe between WHC6_1c & MHS3.4	7	21-Oct-16	29-Oct-16	21-Oct-16	29-Oct-16	0%	0	263																									
EW1740	Backfill and reinstate pavement	2	31-Oct-16	01-Nov-16	31-Oct-16	01-Nov-16*	0%	0	263																									
Storm Drain along Gridline E'-G' / 1'-2'																																		
EW1765	Complete B2 Slab, Columns & Walls at A6 & A7	0		05-Nov-16		05-Nov-16	0%	0	259																									
EW1755	Excavate Trial trench for exisiting Underground Utilities	14	07-Nov-16	22-Nov-16	07-Nov-16	22-Nov-16	0%	0	259																									
EW1758	Install support to existing Underground Utilities	7	23-Nov-16	30-Nov-16	23-Nov-16	30-Nov-16	0%	0	259																									
Storm Drain DN375 at Portion M45																																		
Storm Drain along Gridline A-K' / 5'																																		
EW6110	Fence off Work area for DN375 storm drain excavation	1	02-Sep-16	02-Sep-16	02-Sep-16	02-Sep-16	0%	0	322																									
EW1640	PIW handover of WHC6_1e for M+ connection	0		02-Sep-16		02-Sep-16*	0%	0	-20																									

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016					November 2016				December 2016	
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04		
EW1615	Excavate Trial Trench for existing Underground Utilities	14	02-Sep-16	22-Sep-16	02-Sep-16	22-Sep-16	0%	0	322																					
EW1618	Install support to existing underground Utilities	14	23-Sep-16	15-Oct-16	23-Sep-16	15-Oct-16	0%	0	322																					
EW6120	Excavate trench for DN375 and install shoring	15	17-Oct-16	04-Nov-16	17-Oct-16	04-Nov-16	0%	0	322																					
EW6140	Lay down DN375 pipe between WHC6_1e	12	05-Nov-16	18-Nov-16	05-Nov-16	18-Nov-16	0%	0	322																					
EW6150	Backfill and reinstate pavement	4	19-Nov-16	23-Nov-16	19-Nov-16	23-Nov-16*	0%	0	322																					
Storm Drain DN150 at Portion M45																														
Storm Drain along Gridline A / 5' - 6'																														
EW1900	PIW handover of WHC6_1f for M+ connection	0		02-Sep-16		02-Sep-16*	0%	0	-15																					
EW1910	Fence off work area for DN150 storm drain excavation	1	02-Sep-16	02-Sep-16	02-Sep-16	02-Sep-16	0%	0	340																					
EW1915	Excavate Trial Trench fo existing Underground Utilities	14	03-Sep-16	23-Sep-16	03-Sep-16	23-Sep-16	0%	0	340																					
EW1930	Install support to existing Underground Utilities	8	24-Sep-16	07-Oct-16	24-Sep-16	07-Oct-16	0%	0	340																					
EW1920	Excavate trench for DN150 and install shoring	6	08-Oct-16	17-Oct-16	08-Oct-16	17-Oct-16	0%	0	340																					
EW1940	Lay down DN150 and connect to WHC6_1f	9	18-Oct-16	29-Oct-16	18-Oct-16	29-Oct-16	0%	0	340																					
EW1950	Backfill and reinstate pavement	3	31-Oct-16	02-Nov-16	31-Oct-16	02-Nov-16*	0%	0	340																					
Storm Drain DN300 along Gridline G-M/14																														
EW1945	DCS Plant Room RC Structure complete (including defered pile caps & sum	0		06-Sep-16		06-Sep-16	0%	0	304																					
EW1955	Prepare / Submit Temp Works ELS with ICE Cert	14	08-Sep-16	27-Sep-16	08-Sep-16	27-Sep-16	0%	0	304																					
EW1960	Excavate Trial Trench for existing underground utilities	14	15-Sep-16	07-Oct-16	15-Sep-16	07-Oct-16	0%	0	304																					
EW1970	Install support on existing underground utilities	14	08-Oct-16	28-Oct-16	08-Oct-16	28-Oct-16	0%	0	304																					
EW1980	Excavate to formation level & install laterla support	14	29-Oct-16	14-Nov-16	29-Oct-16	14-Nov-16	0%	0	304																					
EW1990	Construct Mnahole S2.12 & S2.13	14	15-Nov-16	30-Nov-16	15-Nov-16	30-Nov-16	0%	0	304																					
Strom Drain DN600 along Gridline B-G/14																														
EW8605	Completion of B1 Slab (Portion B1E)	0		06-Sep-16		06-Sep-16	0%	0	197																					
EW8610	Excavate Trial Trench for existing underground utilities	14	08-Sep-16	27-Sep-16	08-Sep-16	27-Sep-16	0%	0	197																					
EW8620	Install support on existing underground utilities	14	29-Sep-16	21-Oct-16	29-Sep-16	21-Oct-16	0%	0	197																					
EW8630	Excavate to formation level & install laterla support	14	22-Oct-16	08-Nov-16	22-Oct-16	08-Nov-16	0%	0	309																					
EW8640	Construct Mnahole S2.12 & S2.13	14	09-Nov-16	24-Nov-16	09-Nov-16	24-Nov-16	0%	0	309																					
EW8650	Install DN300 pipe and connect to Manholes S2.12 & S2.13	7	25-Nov-16	02-Dec-16	25-Nov-16	02-Dec-16	0%	0	309																					
Storm Drain DN750 along Gridline A-B/14																														
EW8670	Excavate Trial Trench for existing underground utilities	14	22-Oct-16	08-Nov-16	22-Oct-16	08-Nov-16	0%	0	197																					
EW8680	Install support on existing underground utilities	14	09-Nov-16	24-Nov-16	09-Nov-16	24-Nov-16	0%	0	197																					
EW8690	Excavate to formation level & install laterla support	14	25-Nov-16	10-Dec-16	25-Nov-16	10-Dec-16	0%	0	281																					
Storm Drain DN700 along Gridline A/3-11																														
EW8760	Excavate Trial Trench for existing underground utilities	14	25-Nov-16	10-Dec-16	25-Nov-16	10-Dec-16	0%	0	197																					
Sewage																														
EW1000	Construct the DN375 sewer drain within Austin Road West and	50	02-Sep-16	12-Nov-16	02-Sep-16	12-Nov-16	0%	0	585																					
Sewage at Austin Road (Portion L09)																														
EW1340	PIW Handover date of Manhole F1.2 to HCC	0		12-Nov-16		12-Nov-16*	0%	0	0																					
EW1230	Application & Approval of Excavation Permit (HyD) for works alc	14	13-Nov-16	26-Nov-16	13-Nov-16	26-Nov-16	0%	0	334																					
EW1215	Application & approval of TTMS	28	13-Nov-16	10-Dec-16	13-Nov-16	10-Dec-16	0%	0	341																					
EW1270	Prepare and submit design of ELS within Austin Road	14	27-Nov-16	10-Dec-16	27-Nov-16	10-Dec-16	0%	0	334																					
Sewage adjacent to CLP Station (Portion L19)																														
EW6060	Storm and Sewer drain last manhole connection	72	02-Sep-16	08-Dec-16	02-Sep-16	08-Dec-16	0%	0	563																					
Sewage DN300 at Portion M01, Gridline A / 3-14																														

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	August 2016					September 2016					October 2016				November 2016				December 2016														
										31	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	04														
EW3100	Driving of sheet piles	32	07-Oct-16	17-Nov-16	07-Oct-16	17-Nov-16	0%	0	177																																	
EW3110	Pre-boring for overcoming underground obstructions	20	15-Oct-16	10-Nov-16	15-Oct-16	10-Nov-16	0%	0	178																																	
EW3120	Excavation for installing 1st layer of walings and struts	10	11-Nov-16	23-Nov-16	11-Nov-16	23-Nov-16	0%	0	177																																	
EW3130	Installing 1st layer of walings and struts	18	18-Nov-16	08-Dec-16	18-Nov-16	08-Dec-16	0%	0	177																																	
EW3140	Hanging and supporting of existing underground KGO and othe	9	24-Nov-16	05-Dec-16	24-Nov-16	05-Dec-16	0%	0	180																																	
Ch105 to 108, for future connections by Lyric (trench fromation -3.6mPD)																																										
EW3200	Excavation for installing 2nd layer of walings and struts	5	24-Nov-16	30-Nov-16	24-Nov-16	30-Nov-16	0%	0	177																																	
CH5 to 40 (trench formation +0.9mPD), Ch40 to 105 (trench formation+1.8mPD),																																										
EW3280	Excavation to bottom of trench	14	24-Nov-16	10-Dec-16	24-Nov-16	10-Dec-16	0%	0	197																																	
DCS Box																																										
EW9010	Excavate Trial Trench	4	02-Sep-16	06-Sep-16	02-Sep-16	06-Sep-16	0%	0	307																																	
EW9000	Access tp Portion M15 & M16	0	02-Sep-16		02-Sep-16		0%	0	307																																	
EW9020	Open Cut Excavation (one side of Pipe Piles Gammon)	4	08-Sep-16	12-Sep-16	08-Sep-16	12-Sep-16	0%	0	307																																	
EW9030	Pour Blinding	1	13-Sep-16	13-Sep-16	13-Sep-16	13-Sep-16	0%	0	307																																	
EW9170	1st Pour Lower Slab (FRC + Puddle flange)	4	15-Sep-16	20-Sep-16	15-Sep-16	20-Sep-16	0%	0	307																																	
EW9180	2nd Pour Lower Slab (FRC + Puddle flange)	4	22-Sep-16	26-Sep-16	22-Sep-16	26-Sep-16	0%	0	307																																	
EW9190	Remove Shutter	1	27-Sep-16	27-Sep-16	27-Sep-16	27-Sep-16	0%	0	307																																	
EW9200	Backfill & Reinstate to Ground Level	3	29-Sep-16	03-Oct-16	29-Sep-16	03-Oct-16	0%	0	307																																	
EW9210	DCS Box complete	0		03-Oct-16		03-Oct-16	0%	0	307																																	
Intaking Chiller Mains																																										
B10.1100	Intake Chiller Mains - Install Grout Curtain along Sheet Piles	42	26-Nov-16	17-Jan-17	26-Nov-16	17-Jan-17	0%	0	455																																	
Statutory Inspections & Occupation Permit (OP)																																										
M+ Museum - Statutory Inspection & Approval																																										
M+ Museum - WSD (FS Pipeworks) Inspection & Approval																																										
SH4200	FS - Submit Form WW046 (Part 1 & 2) and Approval by WSD (S	90	10-Sep-16	08-Dec-16	10-Sep-16*	08-Dec-16	0%	0	229																																	
M+ Museum - WSD (Plumbing) Inspection & Approval																																										
SH4260	Plumbing - Submit Form WW046 (Part 1 & 2) to WSD (Subject	90	10-Sep-16	08-Dec-16	10-Sep-16*	08-Dec-16	0%	0	229																																	
Summary Programme																																										
M+																																										
Foundation & Basement																																										
SM1010	Excavation & ELS Works	310	02-Nov-15	18-Nov-16	02-Nov-15 A	21-Jan-17	66%	-52	38																																	
SM1020	Pilecaps & U/G Drainage Construction	110	04-Jan-16	20-May-16	04-Jan-16 A	13-Sep-16	86%	-96	60																																	
SM1030	B2/F to B1/F Structure	321	25-Jan-16	25-Feb-17	25-Jan-16 A	18-Mar-17	48%	-18	-7																																	
SM1040	B1/F to LG/F Structure	92	15-Mar-16	08-Jul-16	15-Mar-16 A	28-Dec-16	7%	-142	7																																	
SM1110	Basement ABWF Works	364	20-Sep-16	09-Dec-17	20-Sep-16	09-Dec-17	0%	0	39																																	
Podium																																										
SM1050	Trusses Construction	131	11-Oct-16	18-Mar-17	11-Oct-16	18-Mar-17	0%	0	6																																	
SM1060	G/F Slab & RC Structure to 3/F	332	11-Oct-16	21-Nov-17	11-Oct-16	21-Nov-17	0%	0	39																																	
SPS																																										
SM1470	SPS RC Structure	100	01-Aug-16	28-Nov-16	25-Jul-16 A	30-Nov-16	1%	-2	-83																																	
External Works																																										
SM1400	M+ External Works	330	02-Sep-16	13-Oct-17	02-Sep-16	13-Oct-17	0%	0	245																																	

- EW9010, Excavate Trial Trench
- Access tp Portion M15 & M16, Access tp Portion M15 & M16, 02-Sep-16
- EW9020, Open Cut Excavation (one side of Pipe Piles Gammon)
- EW9030, Pour Blinding
- EW9170, 1st Pour Lower Slab (FRC + Puddle flange)
- EW9180, 2nd Pour Lower Slab (FRC + Puddle flange)
- EW9190, Remove Shutter
- EW9200, Backfill & Reinstate to Ground Level
- DCS Box complete, DCS Box complete,

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	
F2 Foundation Works for Lyric Theatre Complex																																	
Summary for Major Works																																	
Pre-bored H-Pile																																	
Pre-bored H-Pile Construction																																	
LT.0087	Trial Pile and Obtain BD's Acknowledgement	18	22-Feb-16	12-Mar-16	08-Mar-16 A	09-Mar-16 A	100%	4																									
LT.0088	Predrilling, Excluding Portions L02 and L03; 56 nos.	71	20-Feb-16	20-May-16	01-Mar-16 A	13-Jul-16 A	100%	-43																									
LT.0089	Pre-bored H-Pile Construction; Rig 1, 122 nos	243	01-Apr-16	21-Jan-17	17-Mar-16 A	09-Feb-17	55%	-13	4																								
LT.2225	Pre-bored H-Pile Construction; Rig 2, 103 nos	255	01-Apr-16	08-Feb-17	30-Mar-16 A	10-Feb-17	57%	-2	4																								
LT.2226	Pre-bored H-Pile Construction; Rig 3, 25 nos	25	01-Apr-16	30-Apr-16	30-Apr-16 A	05-Jul-16 A	100%	-51																									
LT.3315	Pre-bored H-Pile Construction; Rig 3, 5 nos	10			23-Sep-16 A	12-Oct-16	40%		168																								
LT.3340	Pre-bored H-Pile Construction; Rig 4, 6 nos	10			23-Sep-16 A	15-Oct-16	22%		165																								
Contract Administrator's Instruction No. 8																																	
LT.3010	Predrilling in Portions L02 and L03; 14 nos.	30	14-Oct-16	17-Nov-16	08-Aug-16 A	01-Sep-16 A	100%	64																									
LT.3015	Pre-bored H-Pile Construction; Rig 1, 31 nos	65	14-Feb-17	06-May-17	10-Feb-17	02-May-17	0%	3	4																								
LT.3020	Pre-bored H-Pile Construction; Rig 2, 32 nos	67	14-Feb-17	09-May-17	10-Feb-17	05-May-17	0%	3	4																								
BA14 and Testing																																	
LT.0094	Submission of BA14	6	06-Jun-17	12-Jun-17	03-Jun-17	08-Jun-17	0%	4	5																								
LT.0095	CA's Selection of Proof Drilling Locations	14	09-May-17	23-May-17	06-May-17	19-May-17	0%	4	5																								
LT.0096	Proof Drilling	14	23-May-17	06-Jun-17	20-May-17	02-Jun-17	0%	4	5																								
LT.0097	BD's Selection of Test Piles	28	12-Jun-17	10-Jul-17	09-Jun-17	06-Jul-17	0%	4	5																								
LT.0098	Load Testing and Submit Reports	32	10-Jul-17	11-Aug-17	06-Jul-17	07-Aug-17	0%	4	5																								
LT.0099	BD's Acknowledgement	45	11-Aug-17	25-Sep-17	08-Aug-17	21-Sep-17	0%	4	22																								
Bored Pile																																	
Bored Pile Construction																																	
LT.0102	Predrilling, Excluding Portions L02 and L03; 145 nos.	125	20-Feb-16	25-Jul-16	02-Mar-16 A	02-Sep-16 A	100%	-33																									
LT.0103	Bored Pile Construction; RCD Rig 1, 26 nos.	244	07-Apr-16	27-Jan-17	12-Mar-16 A	01-Feb-17	68%	-1	77																								
LT.1895	Bored Pile Construction; RCD Rig 2, 27 nos.	268	18-Mar-16	13-Feb-17	17-Mar-16 A	27-Feb-17	54%	-12	84																								
LT.1905	Bored Pile Construction; RCD Rig 3, 26 nos.	243	14-Apr-16	06-Feb-17	21-Mar-16 A	11-Feb-17	57%	-5	97																								
LT.1915	Bored Pile Construction; RCD Rig 4, 19 nos.	245	29-Mar-16	20-Jan-17	23-Mar-16 A	16-Jan-17	60%	4	5																								
LT.1925	Bored Pile Construction; RCD Rig 5, 22 nos.	200	28-Apr-16	24-Dec-16	26-Apr-16 A	21-Jan-17	54%	-21	112																								
LT.1935	Bored Pile Construction; RCD Rig 6, 12 nos.	175	12-Jul-16	10-Feb-17	13-Jul-16 A	22-Feb-17	19%	-10	88																								
LT.1945	Bored Pile Construction; RCD Rig 7, 13 nos.	146	14-Jul-16	06-Jan-17	22-Jul-16 A	17-Jan-17	36%	-9	-4																								
LT.2215	Sonic Logging and Interface Coring Test; Excluding Portions L02 and L03	145	10-Sep-16	08-Mar-17	03-Oct-16	28-Mar-17	0%	-17	71																								
LT.3260	Completion of Bored Pile Construction in Area 6	0				17-Jan-17	0%	-5																									
Contract Administrator's Instruction No. 8																																	
LT.2891	Predrilling in Portions L02 and L03; 11 nos.	24	13-Sep-16	13-Oct-16	03-Aug-16 A	24-Aug-16 A	100%	41																									
LT.2895	Bored Pile Construction; RCD Rig 4, 4 nos.	51	10-Dec-16	14-Feb-17	24-Aug-16 A	09-Feb-17	55%	4	5																								
LT.2905	Bored Pile Construction; RCD Rig 1, 3 nos.	43	20-Dec-16	14-Feb-17	27-Aug-16 A	07-Oct-16	96%	104	104																								
LT.2915	Bored Pile Construction; RCD Rig 4, 2 nos.	30	06-May-17	10-Jun-17	04-May-17	08-Jun-17	0%	2	4																								
LT.2925	Bored Pile Construction; RCD Rig 1, 2 nos.	29	09-May-17	12-Jun-17	05-May-17	08-Jun-17	0%	3	4																								
LT.2935	Sonic Logging and Interface Coring Test; Portions L02 and L03	12	13-Jun-17	26-Jun-17	09-Jun-17	22-Jun-17	0%	3	4																								
BA14 and Testing																																	
LT.0108	Submission of BA14	3	27-Jun-17	29-Jun-17	23-Jun-17	26-Jun-17	0%	3	4																								
LT.0109	BD's Selection of Test Piles	28	30-Jun-17	27-Jul-17	27-Jun-17	24-Jul-17	0%	3	4																								
LT.0110	Concrete Coring Test and Submit Reports	13	27-Jul-17	11-Aug-17	24-Jul-17	08-Aug-17	0%	3	4																								
LT.0111	BD's Acknowledgement	45	12-Aug-17	25-Sep-17	08-Aug-17	22-Sep-17	0%	3	21																								
BA14 and Testing at Area 6 if Option is Exercised																																	
LT.0113	Submission of BA14	3	03-Feb-17	07-Feb-17	09-Feb-17	13-Feb-17	0%	-5	18																								
LT.0114	BD's Selection of Test Piles	28	07-Feb-17	07-Mar-17	13-Feb-17	13-Mar-17	0%	-7	21																								
LT.0115	Concrete Coring Test and Submit Reports	15	07-Mar-17	24-Mar-17	13-Mar-17	30-Mar-17	0%	-5	18																								
LT.3110	BD's Acknowledgement	45	24-Mar-17	08-May-17	30-Mar-17	14-May-17	0%	-7	90																								

- 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
30-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
AM2A	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
AM2A	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	WKCD	Contractor
	actions and keep IEC, EPD and WKCD informed of the results.	remedial measures.		
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify IEC, WKCD, 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 WKCD to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and WKCD 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 WKCD, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the WKCD 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 WKCD 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

SEPTEMBER 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 AM1, AM2A* - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	7	8	9	10
11	12 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	13	14	15	16	17 AM1, AM2A - 24hrTSP, 1hr TSP x3
18	19	20	21	22	23 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	24
25	26	27	28	29 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	30	
		Notes: AM1 - International Commerce Centre (ICC) AM2A - Austin Road West (Opposite to The Harbourside) NM1A - International Commerce Centre (ICC) *24hr TSP impact monitoring at AM2A station on 6 September 2016 was suspended due to electricity issue.				

OCTOBER 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	6	7	8
9	10	11 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	12	13	14	15
16	17 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	18	19	20	21 AM1, AM2A - 24hrTSP, 1hr TSP x3	22
23	24	25	26	27 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	28	29
30	31	Notes: AM1 - International Commerce Centre (ICC) AM2A - Austin Road West (Opposite to The Harbourside) 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 : 16/08/2016

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 : AM2A (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. : C164166
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-1465) Date of Receipt / 收件日期 : 20 July 2016

Description / 儀器名稱 : Precision Integrating Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-18
Serial No. / 編號 : 00360030
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

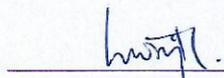
DATE OF TEST / 測試日期 : 29 July 2016

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 : 1 August 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室書面批准。

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

Certificate of Calibration

校正證書

Certificate No. : C164166
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

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	94.4	± 0.7

- 6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
60 - 120	LA	A	Fast	94.00	1	94.4 (Ref.)
				104.00		104.4
				114.00		114.4

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

- 6.2 Time Weighting

- 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	94.4	Ref.
			Slow			94.4	± 0.1

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. : C164166
證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
50 -110	LA	A	Fast	106.00	Continuous	106.0	Ref.
	LAmx				200 ms	105.1	-1.0 ± 1.0
	LA	Slow	Continuous		106.0	Ref.	
	LAmx		500 ms		102.4	-4.1 ± 1.0	

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LA	A	Fast	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	68.0	-26.2 ± 1.5
					125 Hz	78.0	-16.1 ± 1.0
					250 Hz	85.6	-8.6 ± 1.0
					500 Hz	91.1	-3.2 ± 1.0
					1 kHz	94.4	Ref.
					2 kHz	95.7	+1.2 ± 1.0
					4 kHz	95.5	+1.0 ± 1.0
					8 kHz	93.3	-1.1 (+1.5 ; -3.0)
					12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LC	C	Fast	94.00	31.5 Hz	91.3	-3.0 ± 1.5
					63 Hz	93.5	-0.8 ± 1.5
					125 Hz	94.2	-0.2 ± 1.0
					250 Hz	94.4	0.0 ± 1.0
					500 Hz	94.5	0.0 ± 1.0
					1 kHz	94.4	Ref.
					2 kHz	94.3	-0.2 ± 1.0
					4 kHz	93.6	-0.8 ± 1.0
					8 kHz	91.4	-3.0 (+1.5 ; -3.0)
					12.5 kHz	88.1	-6.2 (+3.0 ; -6.0)

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書面批准。

Certificate of Calibration

校正證書

Certificate No. : C164166

證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
50 - 110	LAeq	A	10 sec.	4	1		110	100	100.1	± 0.5
			60 sec.					90	89.9	± 0.5
			5 min.					80	79.6	± 1.0
								70	69.7	± 1.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307435

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	31.5 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)
	Burst equivalent level	: ± 0.2 dB (Ref. 110 dB continuous sound level)

- 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.



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

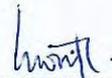
DATE OF TEST / 測試日期 : 15 June 2016

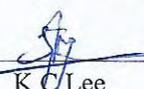
TEST RESULTS / 測試結果

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室書面批准。

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 :

Equipment ID	Description	Certificate No.
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 :

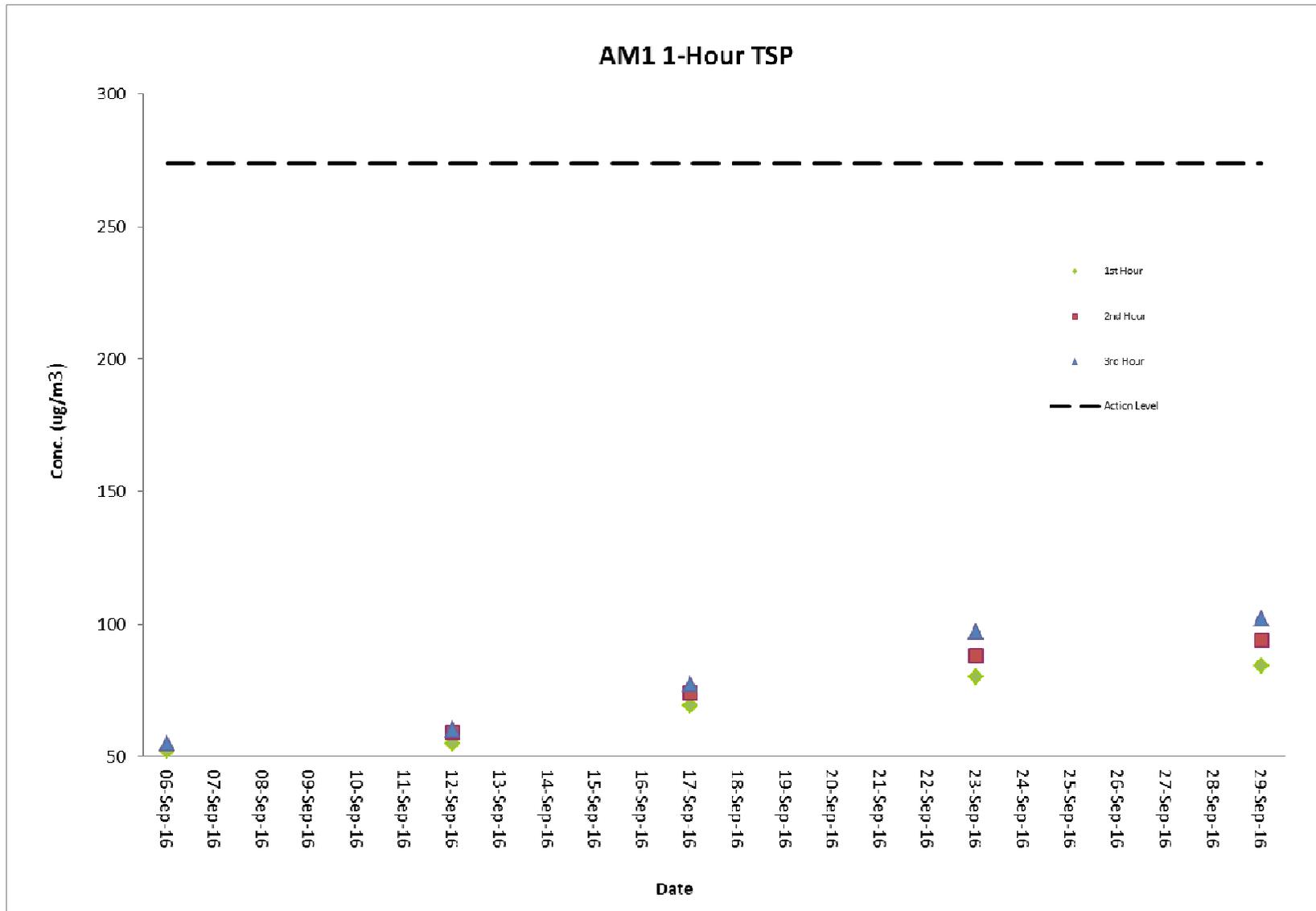
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the 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		
06-Sep-16	Rainy	10:42 - 16:00	52	49	55	273.7	500
12-Sep-16	Fine	10:42 - 16:00	55	59	60	273.7	500
17-Sep-16	Sunny	8:05 - 11:05	69	74	77	273.7	500
23-Sep-16	Sunny	10:50 - 16:00	80	88	97	273.7	500
29-Sep-16	Cloudy	10:50 - 16:00	84	94	102	273.7	500

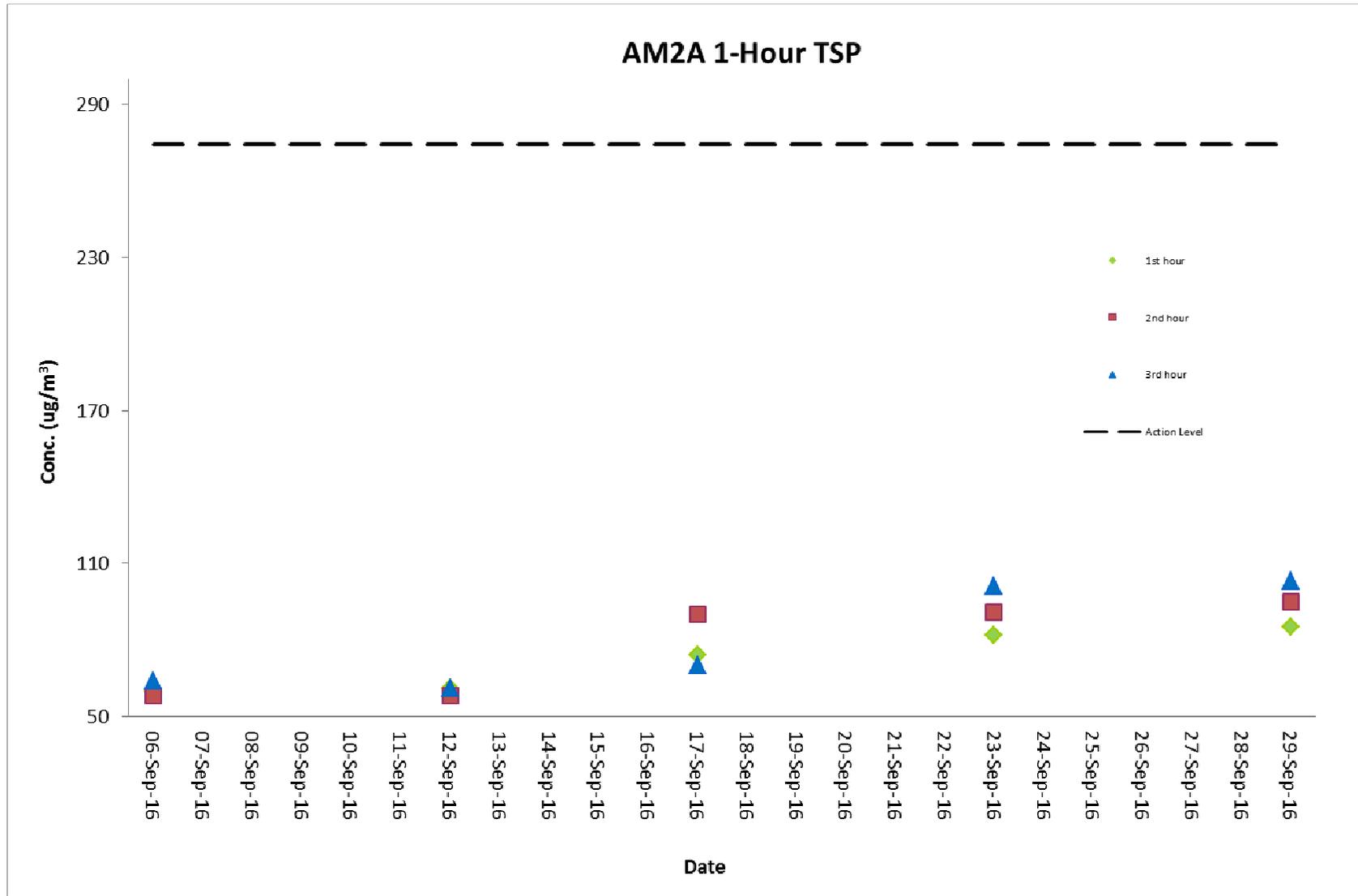
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



Air Quality Monitoring Result at Station AM2A (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		
06-Sep-16	Rainy	10:52 - 16:10	60	58	64	274.2	500
12-Sep-16	Fine	10:52 - 16:10	61	58	61	274.2	500
17-Sep-16	Sunny	8:15 - 16:10	74	90	70	274.2	500
23-Sep-16	Sunny	11:02 - 16:10	82	91	101	274.2	500
29-Sep-16	Cloudy	11:00 - 16:10	85	95	103	274.2	500

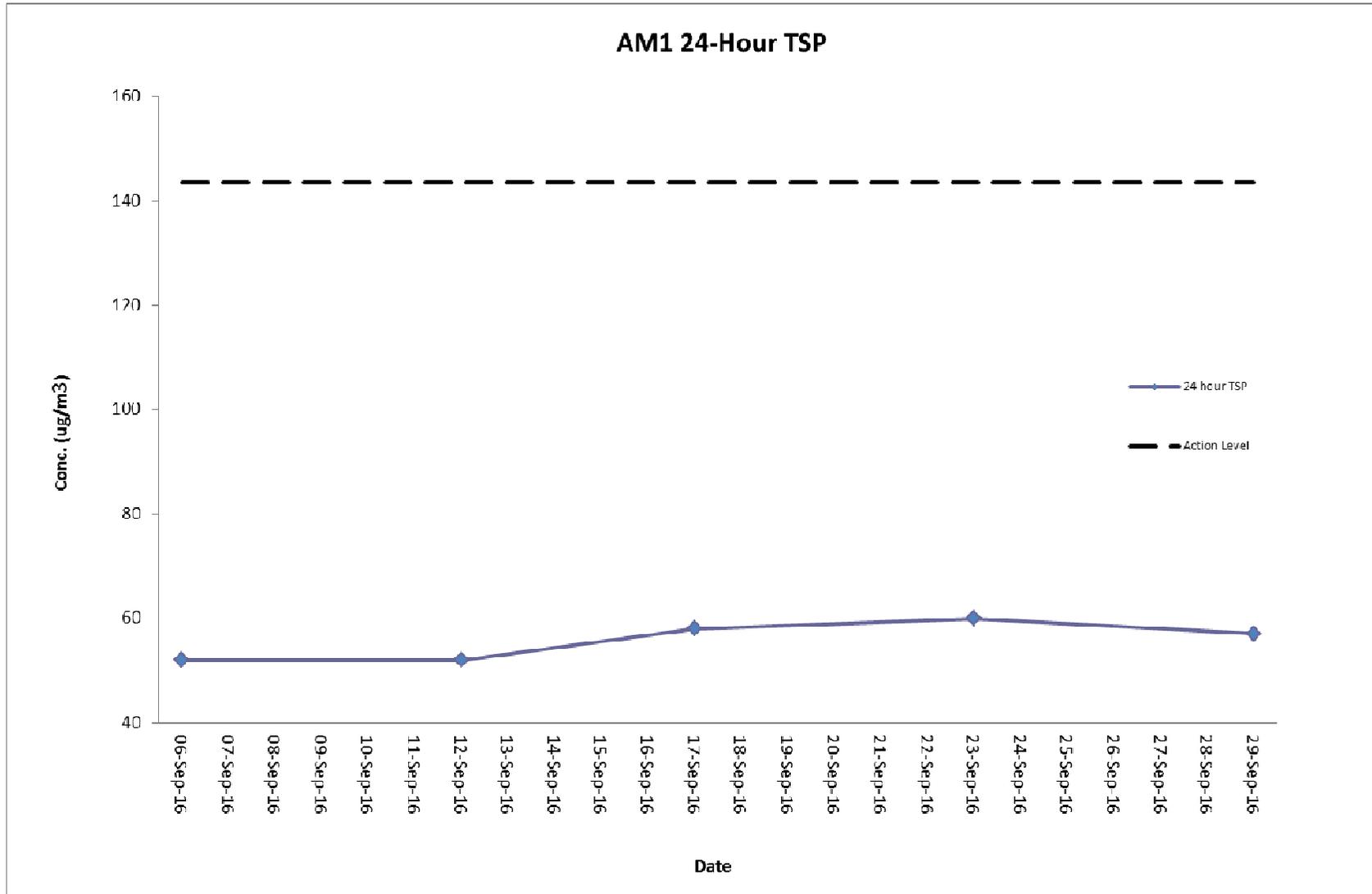
Graphical Presentation of Air Quality Monitoring Result at Station AM2A (1-hour TSP)



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				
06-Sep-16	10:40	07-Sep-16	10:40	2.7901	2.88	19968.38	19992.38	24	1.2	1.2	1.2	52	Rainy	143.6	260
12-Sep-16	10:40	13-Sep-16	10:40	2.8104	2.9001	19992.38	20016.38	24	1.2	1.2	1.2	52	Fine	143.6	260
17-Sep-16	08:00	18-Sep-16	08:00	2.7912	2.891	20016.38	20040.38	24	1.2	1.2	1.2	58	Sunny	143.6	260
23-Sep-16	10:52	24-Sep-16	10:52	2.794	2.8971	20040.38	20064.38	24	1.2	1.2	1.2	60	Sunny	143.6	260
29-Sep-16	10:48	30-Sep-16	10:48	2.8016	2.9001	20064.38	20088.38	24	1.2	1.2	1.2	57	Cloudy	143.6	260

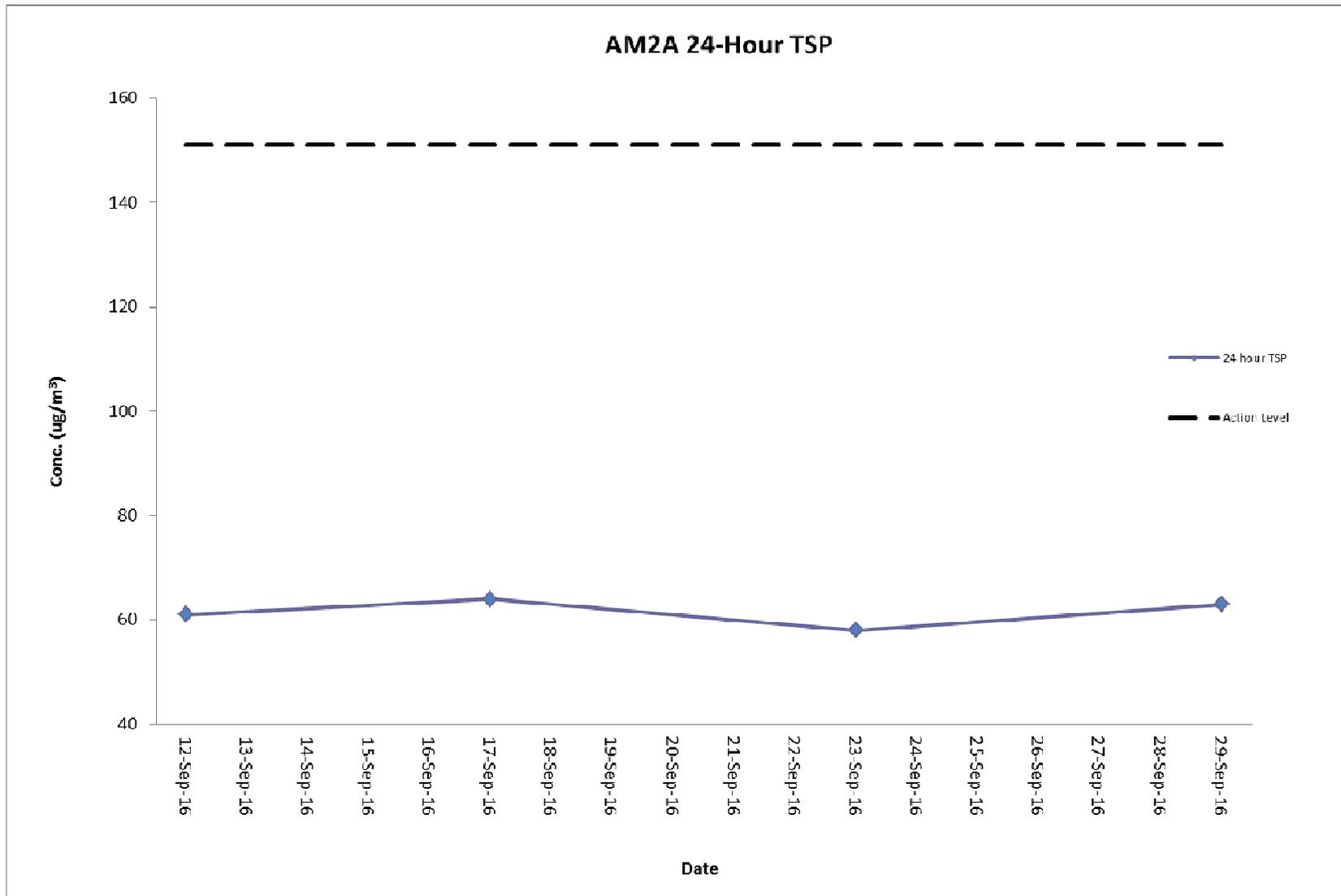
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



Air Quality Monitoring Result at Station AM2A (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						
06-Sep-16				Suspended due to Electricity Issue												151.1	260
12-Sep-16	10:55	13-Sep-16	10:55	2.8009	2.91	15647.59	15671.59	24	1.24	1.24	1.24	61	Fine	151.1	260		
17-Sep-16	08:17	18-Sep-16	08:17	2.7999	2.9134	15671.59	15695.59	24	1.24	1.24	1.24	64	Sunny	151.1	260		
23-Sep-16	11:04	24-Sep-16	11:04	2.8226	2.9258	15695.59	15719.59	24	1.24	1.24	1.24	58	Sunny	151.1	260		
29-Sep-16	11:00	30-Sep-16	11:00	2.7828	2.8956	15719.59	15743.59	24	1.24	1.24	1.24	63	Cloudy	151.1	260		

Graphical Presentation of Air Quality Monitoring Result at Station AM2A (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)
06-Sep-16	14:00	67.9	63.1	68.3
06-Sep-16	14:05	66.0	62.4	
06-Sep-16	14:10	67.4	63.0	
06-Sep-16	14:15	67.0	62.8	
06-Sep-16	14:20	68.2	64.1	
06-Sep-16	14:25	67.9	63.9	
12-Sep-16	14:00	68.1	64.1	69.2
12-Sep-16	14:05	67.2	63.1	
12-Sep-16	14:10	67.0	63.9	
12-Sep-16	14:15	68.7	64.0	
12-Sep-16	14:20	68.8	64.7	
12-Sep-16	14:25	67.2	63.8	
23-Sep-16	14:00	68.0	64.0	69.5
23-Sep-16	14:05	67.2	63.8	
23-Sep-16	14:10	68.4	64.5	
23-Sep-16	14:15	69.1	65.1	
23-Sep-16	14:20	68.1	64.3	
23-Sep-16	14:25	67.2	63.7	
29-Sep-16	14:00	68.0	64.1	69.3
29-Sep-16	14:05	67.7	63.3	
29-Sep-16	14:10	69.0	64.9	
29-Sep-16	14:15	67.8	63.8	
29-Sep-16	14:20	68.4	64.0	
29-Sep-16	14:25	68.8	64.5	

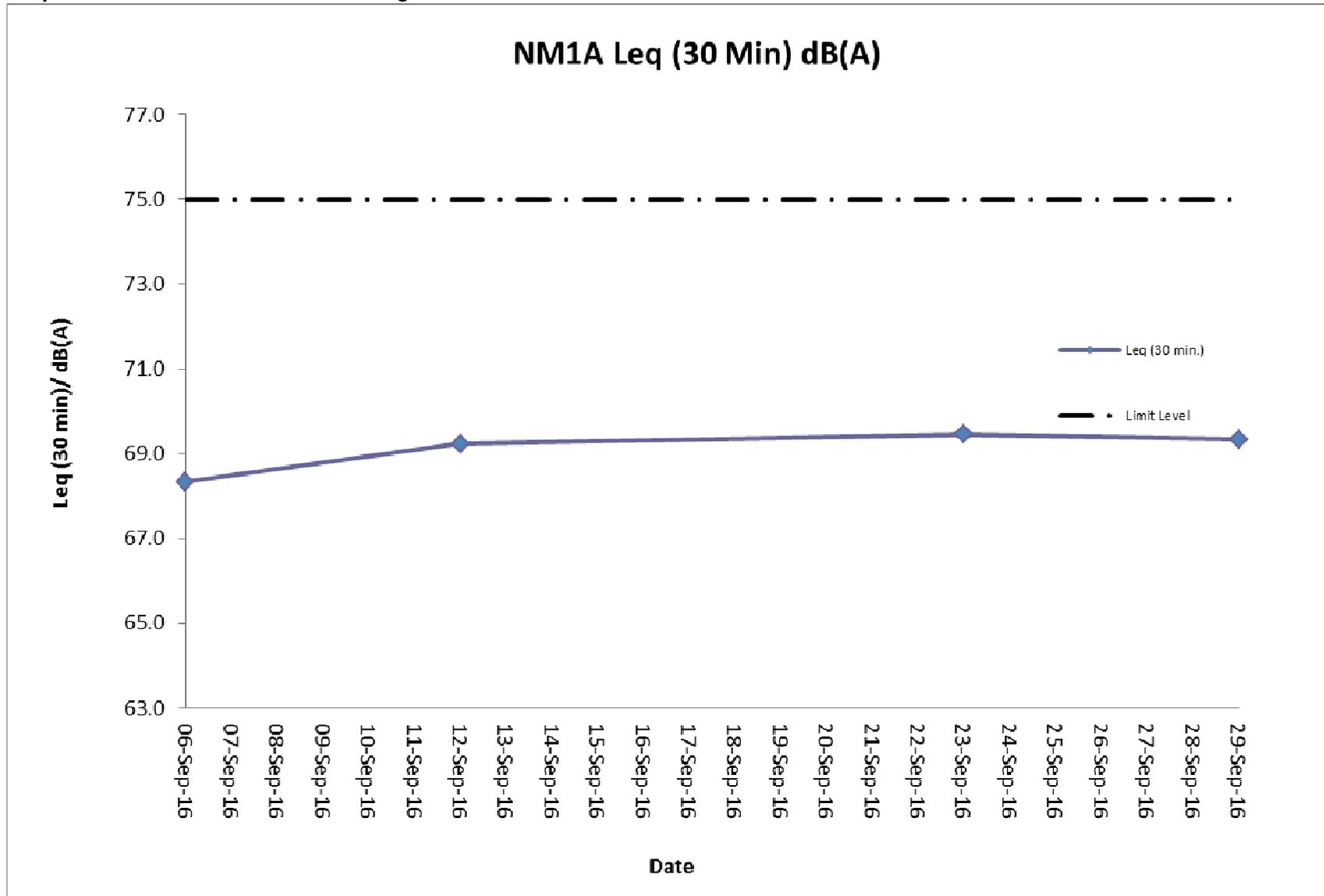
Remarks:

+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, September 2016

Day	Hong Kong Observatory							King's Park	Waglan Island [^]		
	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)	Total Bright Sunshine (hours)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)							
1	1010.3	30.8	27.2	25.4	23.6	81	76	0.5	5	120	15
2	1009.5	29.8	27.6	26.4	23.7	79	79	Trace	2.5	200	22.4
3	1009.7	30.4	28.2	27	24.2	79	81	Trace	5.2	210	19.5
4	1010.1	30.7	28.1	26.9	24.2	79	83	Trace	5.5	210	19.2
5	1008.9	30.5	27.3	24.3	24	82	86	3.9	1.6	200	22.9
6	1008.5	28.9	26.8	24.2	24.3	87	85	0.6	1.3	170	19.4
7	1009.7	30.6	28	26.5	24.8	83	81	0.3	3	180	15
8	1008.7	30.2	28.2	27.1	24.4	80	84	0	1.4	180	22.5
9	1008.5	30.5	27.3	24.2	24.1	83	81	7.3	2.1	210	21.1
10	1009.7	28.8	26.3	24.3	24.5	90	84	20.1	1.1	30	14.1
11	1010.3	29.4	25.6	23.3	24.1	91	85	51	1.9	110	19.4
12	1012.2	29.5	25.7	22.6	20.9	75	78	0	7.6	100	16.1
13	1012.2	28.4	26.4	25.2	23.5	84	85	0	4	100	19.3
14	1012.1	31.9	28.5	26.4	24.3	78	70	Trace	8.4	170	12.5
15	1011.4	32.6	29.1	27.1	24.7	78	73	0	6	200	13.8
16	1009.9	28.6	26.7	24.6	24.5	88	86	18.4	0.5	220	13.1
17	1008.3	29.6	26.4	24.5	24	87	86	5.7	1.4	230	17.2
18	1007.9	29.3	28.2	26.1	24.7	82	88	0.9	0.8	210	23
19	1006.9	29.3	28.6	27.6	25.5	83	88	1.2	0.4	210	32.4
20	1006.2	30	27.9	25.2	25.8	88	90	107.7	0.3	220	34.3
21	1008.4	25.3	24.2	23.1	22.7	92	93	12.6	0	70	41.6
22	1008.8	24.3	23.6	22.9	22.2	92	88	0.7	0	60	30.8
23	1006.2	27.4	24.8	23.9	24.3	97	96	169.4	0	210	18.8
24	1005.8	29	26.6	24.6	25.5	94	88	8.2	0.6	30	6
25	1006.6	32.5	28.4	25.4	25.8	86	78	29.4	5.9	210	8.3
26	1008.3	28.7	26.9	24.6	25.9	95	89	64.6	0	200	11.3
27	1007	31	29.2	27.8	26.3	84	86	0.2	3.3	200	24.4
28	1005.3	31.9	30	28.3	26.2	81	86	1.4	8.3	210	27.3
29	1006.5	32.5	30.3	29.1	26.2	79	83	0	4.8	210	23.5
30	1007.5	32.5	29.6	26.1	26.1	81	79	7	8	230	24
31	1007.3	31.5	29.3	26.7	26.1	83	86	1.9	2.6	220	15.4
Mean/Total	1008.7	29.9	27.5	25.5	24.5	85	84	513	93.5	210	20.1

[^] Information of wind direction and wind speed for Waglan Island are based on automatic weather station data since January 1989

Trace means rainfall less than 0.05 mm

§ 1981-2010 Climatological Normal, unless otherwise specified

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	6702.0	0.0	0.0	5648.0	1000.1	53.9	0.0	104.2	0.0	0.0	45.5	0.2	107.9
Oct													
Nov													
Dec													
Sub-total (2016)	127827.5	0.0	25232.0	95840.0	6701.6	53.9	0.0	595.3	0.9	0.0	193.6	0.2	535.5
Total	204087.8	0.0	25232.0	133701.4	45100.5	53.9	0.0	697.8	0.9	0.0	193.6	1.2	669.1

Note:

-197.91 ton and 802.17 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	13671.3	0.0	0.0	0.0	13671.3	0.0	0.0	59.8	0.0	0.0	0.0	1.6	12.4
Oct	0.0												
Nov	0.0												
Dec	0.0												
Sub-total (2016)	73137.5	0.0	0.0	0.0	73137.5	0.0	0.0	209.0	0.2	0.0	0.0	4.9	157.2
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	73137.5	0.0	0.0	0.0	73137.5	0.0	0.0	209.0	0.2	0.0	0.0	4.9	157.2

Note:
 -3043.02 ton and 10628.23 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>	Rem	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 	Rem	✓
		✓	✓
		✓	✓
		N/A	N/A
		✓	✓

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. 	✓	✓
	<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 	✓	✓

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 	✓	✓
	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 	✓	✓
-	Non-Road Mobile Machinery (NRMM): 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.	✓	✓
Noise Impact (Construction)			
3.1 & 10.4.1	Good Site Practice 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:		
	<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; 	✓	✓
	<ul style="list-style-type: none"> machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum; 	✓	✓
	<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs; 	✓	✓
	<ul style="list-style-type: none"> mobile plant should be sited as far away from NSRs as possible; and 	✓	✓
	<ul style="list-style-type: none"> material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities. 	✓	✓
3.1 & 10.4.1	Adoption of Quieter PME 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	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/ 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. 	Obs	Rem
	<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. 	✓	✓
	<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	✓ Rem/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. 	Rem/ Obs	Rem/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.	Obs	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