Development at West Kowloon Cultural District

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

April 2016

Mott MacDonald

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

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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/A (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 March to 31 March 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 3, 11, 17, 24 and 31 March 2016 for M+ Museum and 2, 9, 18, 23 and 30 March 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:

- Pile cap construction
- Slab construction
- Excavation
- Formworks installation
- Wailing installation

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

- H-Pile Construction
- Bored Pile Construction
- Pipe Pile Construction

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/A (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/A. 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 March to 31 March 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
- Pile Cap Construction
- Installation of Lateral Support
- Construction of slab
- Construction of Water Tank
- Underground slab drainage and manholes

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

- H-Pile Construction
- Bored Pile Construction
- Pipe Pile Construction

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

1.4 Summary of EM&A Requirements

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

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

Table 1.1: Summary of Impact EM&A Requirements

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

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

The Harbourside management office formally rejected our proposal of setting up air quality and noise monitoring equipment on its premises at the podium level of Tower 1 (AM2/NM1) on 10 November 2015. Alternative noise monitoring location was identified at The Arch (NM2), however The Arch management office formally rejected our proposal of setting up noise monitoring equipment on its premises on 23 November 2015. Nevertheless, suitable air quality monitoring location at AM2 was identified on the ground floor in front of The Harbourside Tower 1, which is at the same location as that of baseline monitoring for consistency. No management approval is required at the ground floor for conducting the air monitoring and a secure electricity supply is available there. Noise monitoring at G/F of Harbourside will not be representative. Approval from the management office of the International Commerce Centre has been granted on 29 February 2016 for conducting noise monitoring at the alternative noise monitoring location identified at the podium floor (NM1A) which is free from screening to the construction activities. Therefore, 2 air quality monitoring stations and 1 noise impact monitoring station were confirmed for the impact monitoring.

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

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

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

2 Impact Monitoring Methodology

2.1 Introduction

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

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

2.2 Air Quality

2.2.1 Monitoring Parameters, Frequency and Duration

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

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

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

2.2.2 Monitoring Locations

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

Table 2.2: Air Quality Monitoring Station

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

2.2.3 Monitoring Equipment

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

Table 2.3: TSP Monitoring Equipment

Equipment	Model
24-hour TSP monitoring	
High Volume Sampler	TE-5170 (Serial No.: 0767 and 8919)
Calibrator	TE-5025A (Serial No.: 0438320)
1-hour TSP monitoring	
Portable direct reading dust meter	Sibata LD-3B (Serial No.: 2Z6240)

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 m^3/min. The range specified in the EM&A Manual was between 0.6-1.7 m^3/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**.

<u>1-hour TSP Monitoring</u>

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

	Equipment Model	
Monitoring Station	Integrating Sound Level Meter	Calibrator
NM1	Rion NL-18 (Serial No.00360030), Rion NL-31 (Serial No.00320533)	Rion NC-73 (Serial No.10997142)

2.3.4 Monitoring Methodology

Field Monitoring

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

Maintenance and Calibration

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

Weather Condition

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

2.4 Landscape and Visual

2.4.1 Monitoring Program

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

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

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

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

3 Monitoring Results

3.1 Impact Monitoring

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

3.2 Air Quality Monitoring

3.2.1 1-hour TSP

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

Table 3.1: Summary of 1-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	1-hour TSP (µg/m^3)			Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
			1st Result	2nd Result	3rd Result			
AM1	05-Mar-16	8:00	132	166	144	52-174	273.7	500
	11-Mar-16	10:50	80	75	69			
	17-Mar-16	10:45	76	80	71			
	23-Mar-16	10:48	59	52	54			
	29-Mar-16	10:40	169	160	174			
AM2	05-Mar-16	8:10	169	178	192	58-200	274.2	500
	11-Mar-16	11:00	99	104	87			
	17-Mar-16	10:53	94	101	112			
	23-Mar-16	11:00	63	58	61			
	29-Mar-16	10:52	192	188	200			

3.2.2 24-hour TSP

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

Table 3.2: Summary of 24-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	Monitoring Results (µg/m^3)	Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
AM1	05-Mar-16	08:02	62	48-62	143.6	260
	11-Mar-16	10:48	56			
	17-Mar-16	10:43	50			
	23-Mar-16	10:50	48			
	29-Mar-16	10:42	59			
AM2	05-Mar-16	08:13	125	63-125	151.1	260
	11-Mar-16	11:03	66			

Monitoring Station	Monitoring Date	Start Time	Monitoring Results (µg/m^3)	Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
	17-Mar-16	10:56	63			
	23-Mar-16	11:05	68			
	29-Mar-16	10:55	68			

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 noise monitoring results

Monitoring Date	Start Time	End Time	L_{eq} (30 mins), dB(A)	Limit Level for L_{eq} (dB(A))
05-Mar-16	09:17	09:47	69.0	75
11-Mar-16	15:50	16:20	68.2	
17-Mar-16	13:00	13:30	67.3	
23-Mar-16	15:50	16:20	68.2	
29-Mar-16	14:45	15:15	68.9	

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).

3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 3, 17 and 31 March 2016 for M+ Museum and 2, 18 and 30 March 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 3, 11, 17, 24 and 31 March 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 11 March 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 4.1**.

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

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
25 Feb 2016	Waste management	Oil stain was observed on the ground near the mobile generator placed near Wetsep No. 1. The contractor was reminded to emove the oil stain on ground and ensure no leakage of oil from the mobile generator.	The oil stain found on ground near mobile generator located next to Wetsep No.1 was removed.	3 Mar 2016
3 Mar 2016	Water quality	The contractor was reminded to remove all stagnant water in site area.	Stagnant water previously observed in the site area was removed.	11 Mar 2016
11 Mar 2016	Waste management	Chemical containers without drip tray were observed. The Contractor was advised to provide drip tray to prevent adverse water quality impact.	Chemicals previously observed without drip trays were removed.	17 Mar 2016
11 Mar 2016	Water quality	Accumulated stagnant water behind Wetsep No. 2 was observed. The Contractor should direct the stagnant water to treatment facilities as soon as possible.	Accumulated stagnant water behind Wetsep No. 2 was removed.	15 Mar 2016
11 Mar 2016	Waste management	Oil stains on the ground near Wetsep No. 1 were observed. The Contractor should clear these as soon as possible.	Oil stains on the ground near Wetsep No. 1 were removed.	16 Mar 2016
11 Mar 2016	Water quality	Some mud was observed on the haul road between wheel washing area and vehicular site exit (Gate 3). The Contractor should ensure that the mud is removed.	Mud observed on the haul road between wheel washing area and Gate 3 was removed.	15 Mar 2016
17 Mar 2016	Water quality	Stagnant water was observed. The contractor was reminded to remove the stagnant water.	Stagnant water previously observed was removed.	31 Mar 2016
31 Mar 2016	Air quality	The contractor was reminded to enhance water spraying frequency to reduce dust impact.	Follow-up status will be provided in the next reporting month.	On-going

4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 2, 9, 18, 23 and 30 March 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 18 March 2016. No non-compliance was recorded during the site inspection. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.2**.

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

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
2 Mar 2016	Waste management	The contractor was reminded to provide drip trays for all chemcials.	The contactor has provided drip trays for the chemicals.	5 Mar 2016
2 Mar 2016	Air quality	The contractor was reminded to well cover all stockpiles to prevent dust impact.	The contractor has covered the stockpile.	5 Mar 2016
9 Mar 2016	Air quality	The contractor was reminded to put the NRMM label of the generator at observable area.	The contractor has placed NRMM label of the generator at observable area.	10 Mar 2016
9 Mar 2016	Air quality	The contractor was reminded to well cover all stockpiles in site area.	The stockpile was removed.	18 Mar 2016
18 Mar 2016	Water quality	The contractor was reminded to constantly remove the muddy water at vehicle washing facility.	The contractor improved the water quality of the vehicle washing facility.	21 Mar 2016
23 Mar 2016	Waste management	Oil spillage was found near the chemical waste container. The contractor should remove the contaminated soil and treat as chemical waste.	Oil was removed near the chemical waste container.	30 Mar 2016
30 Mar 2016	Air quality	The contractor was reminded to increase the water spraying frequency at bare ground to prevent dust impact.	Follow-up status will be provided in the next reporting month.	On-going
30 Mar 2016	Waste management	The contractor was reminded to clean the drip tray and treat as chemical waste.	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, 233.0 ton, 704.6 ton and 16.9 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38, Tseung Kwan O Area 137 and Chai Wan Public Fill Barging Point

respectively, while 46.3 ton of general refuse was disposed of at SENT landfill. 29.7 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. 1,600 ton of inert C&D materials was reused on site. 7,888.0 ton of inert C&D materials was reused in other projects. 0 ton of chemical wastes was collected by licensed contractors in the reporting period.

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

4.2.2 Lyric Theatre Complex

As advised by the Contractor, 123.17 ton and 2578.95 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 30.6 ton of general refuse was disposed of at SENT landfill. 4.5 ton of metals, 0.1 ton of paper/cardboard packaging, 0 ton of plastic and 0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 0 ton of inert C&D materials was reused in other projects. 0 ton of chemical wastes was collected by licensed contractors in the reporting period.

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

4.3 Status of Environmental Licenses and Permits

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

4.3.1 M+ Museum

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

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Chemical Waste Producer Registration				
5213-217-H2913-45	05-Nov-15	--	Valid	--
Billing Account Construction Waste Disposal				
7023393	13-Oct-15	--	Account Active	--
Construction Noise Permit				
GW-RE0105-16	12 Feb-16	04-Jul-16	Valid	--

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
GW-RE0227-16	18-Mar-16	17-Sep-16	Valid	--
Wastewater Discharge License				
WT00022693-2015	12-Nov-15	30-Nov-20	Cancelled on 4-Mar-16	--
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-RE0231-16	17-Mar-16	16-Sep-16	Valid	--
Wastewater Discharge License				
WT00023648-2016	9-Mar-16	31-Mar-2021	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 store on site should be provided with drip trays.
- Drip trays should be kept in good condition.
- Chemical waste in drip trays should be frequently removed and ensure no leakage of oil/ chemicals from machines.

Air Quality

- Stockpiles of cement and other construction materials should be kept covered when not being used.
- Maintain high standard of housekeeping to prevent emission of fugitive dust.

Water Quality

- Stagnant water in site area should be cleared.
- Dust suppression spraying for stockpile should be applied appropriately to avoid any leakage of spraying from the site.
- No leakage of site runoff from the site near site boundary should be ensured.

Noise

- Noise insulating fabric should be adopted for certain powered mechanical equipment to reduce the noise impact to nearby noise sensitive receivers.

4.4.2 Lyric Theatre Complex

Chemical and Waste Management

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

Air Quality

- Stockpiles of cement and other construction materials should be kept covered when not being used.
- NRMM label of regulated machines should be displayed at a conspicuous position.
- Maintain high standard of housekeeping to prevent emission of fugitive dust.

Water Quality

- The muddy water at vehicle washing facility should be regularly removed.

Noise

- Noise insulating fabric should be adopted for certain powered mechanical equipment to reduce the noise impact to nearby noise sensitive receivers.

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 February 2016	14 March 2016

6 Report on 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:

- Pile cap construction
- Slab construction
- Excavation
- Formworks installation
- Wailing installation

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
- Pipe Pile Construction

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 Therate 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.

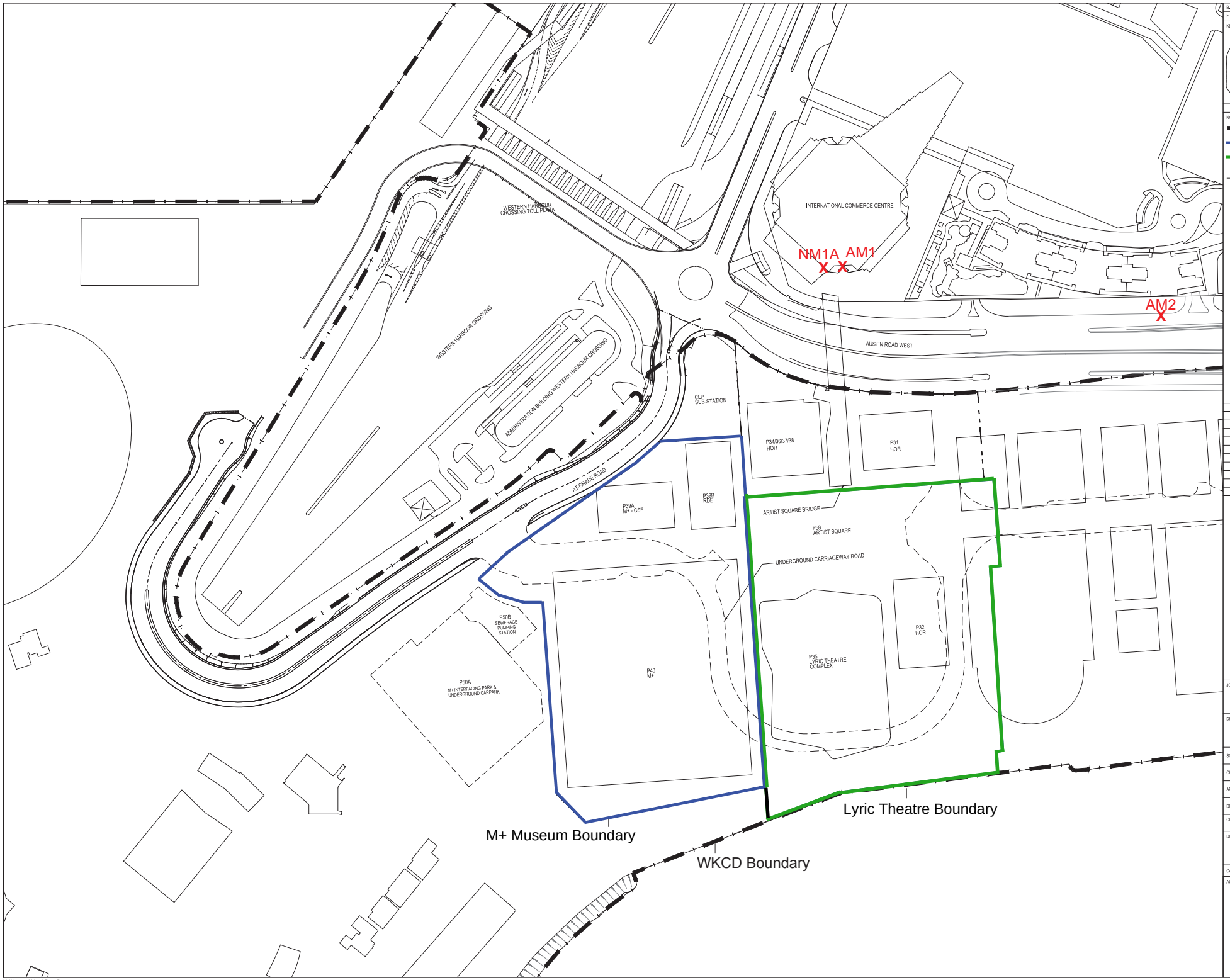
No environmental complaint and no notifications of summons or successful prosecution were received during the reporting month.

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



B.D. REF:

F.S.D. REF:

KEY PLAN

KEY PLAN

NOTES:

WKCD BOUNDARY

M+ MUSEUM BOUNDARY

LYRIC THEATRE BOUNDARY

BOUNDARY OF UNDERPASS ROAD SERVING THE PLANNED WKCD

X CONSTRUCTION AIR/NOISE MONITORING STATION

REV.	DATE	DESCRIPTION	INITIAL

JOB TITLE: **M+ MUSEUM FOR VISUAL CULTURE (MAIN CONTRACT WORKS) & LYRIC THEATRE COMPLEX**

DRAWING TITLE: **PROPOSED LOCATIONS OF CONSTRUCTION AIR/NOISE MONITORING STATIONS**

SCALE	1:100	PRINTED	A1
CHECKED		DATE	
APPROVED		DATE	
DRAWN	TY	DATE	16-10-2015

CONTRACT NO.

DRAWING NO. **FIGURE 1** REV. XA

CAD REF NAME: XXXXX-AUT-PMS-DWG-P00-L000-0000-XXX.dwg

AUTHORITY

westKowloon 西九文化區

A1 (841mm x 594mm) Sheet Size

Appendices

Appendix A. Project Organisation

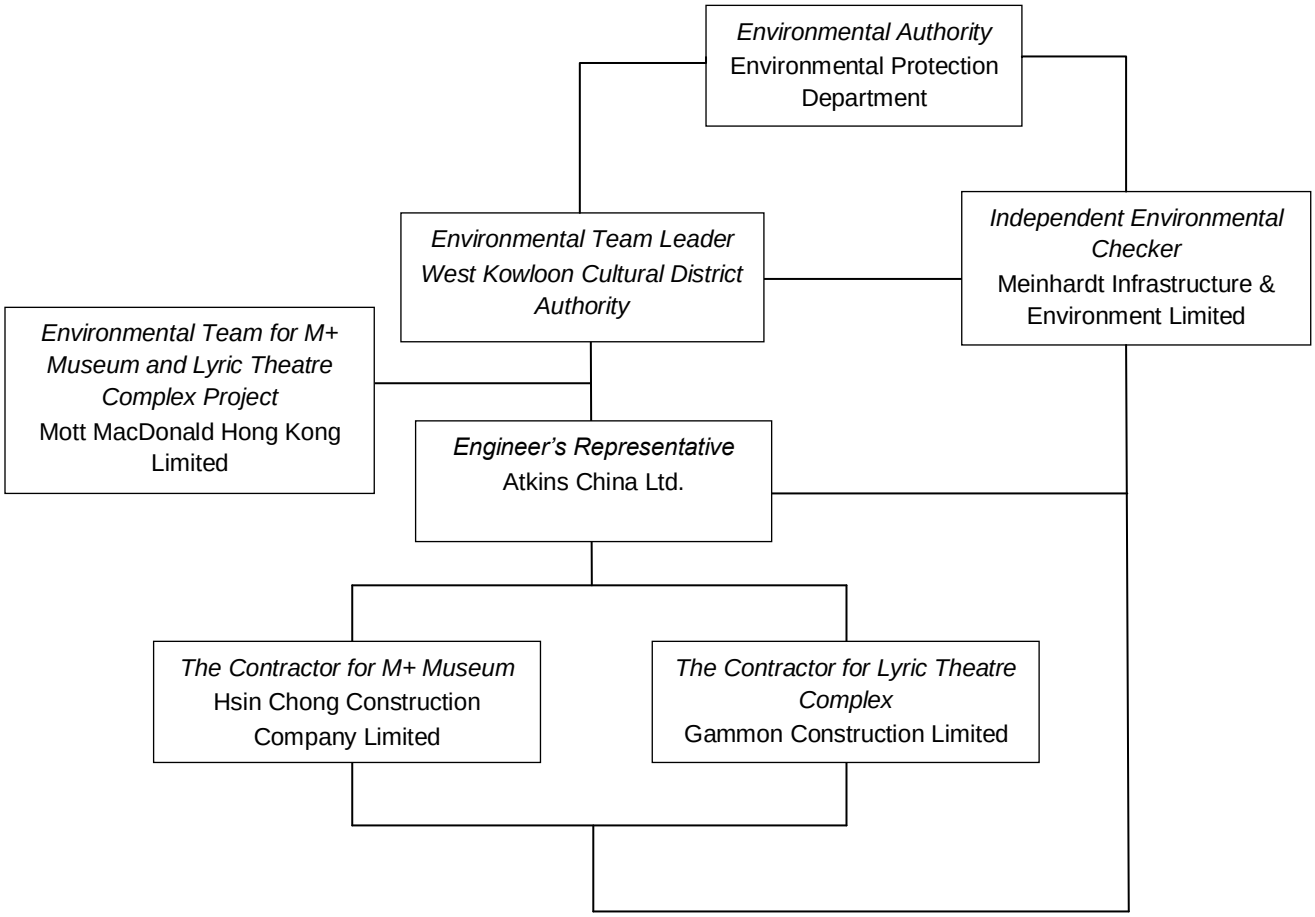


Table A-1: Contact information

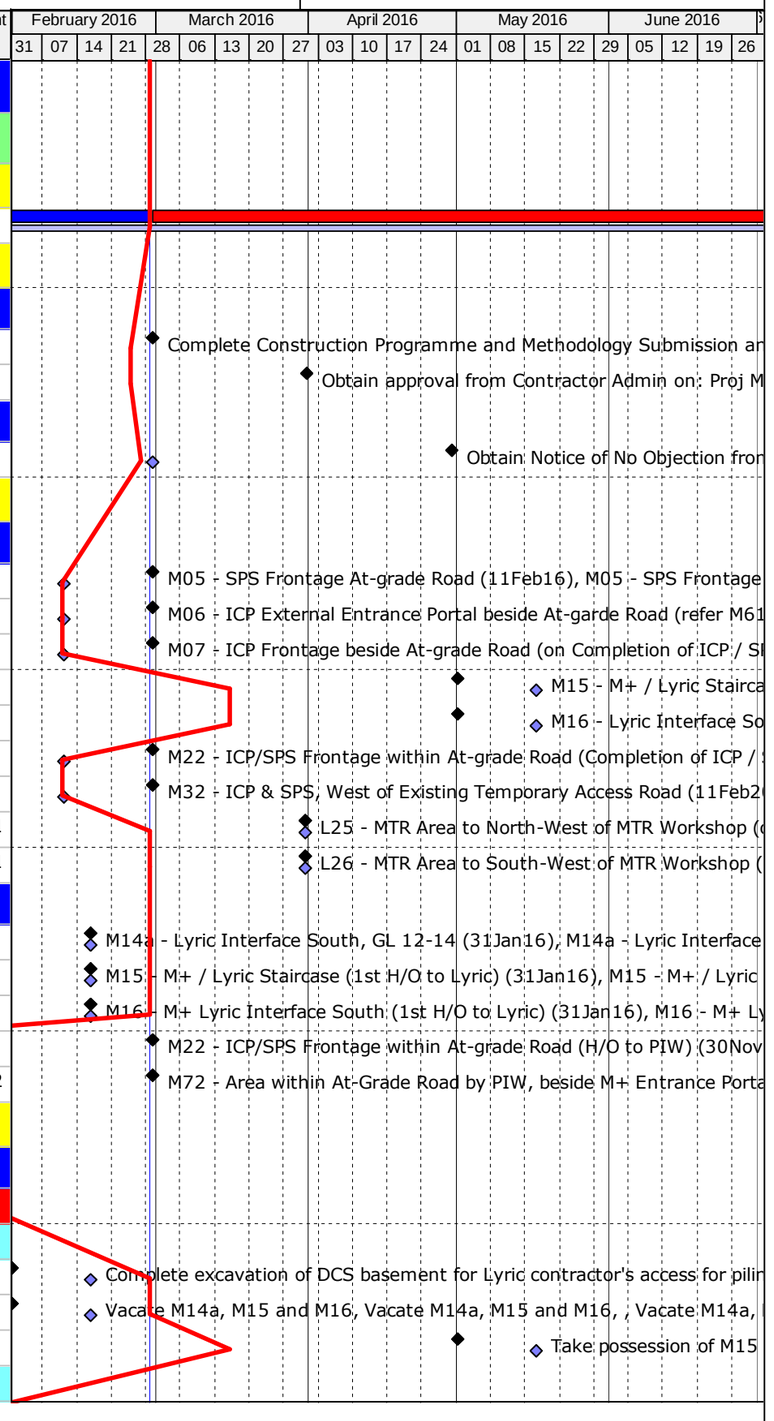
Company Name	Role	Name	Telephone
Atkins China Ltd.	Senior Resident Engineer	Mr. Alfred Lee	5401 7289
Meinhardt Infrastructure & Environment Limited	IEC	Mr. Fredrick Leong	2859 1739
Hsin Chong Construction Company Limited	Environmental Manager	Mr. Leo Chow	9266 6855
Gammon Construction Limited	Environmental 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

Appendix B. Tentative Construction Programme

M+ Museum

(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
3MRP Three Months Rolling Programme Update (29 Feb 2016)									
Contract Key Dates & Milestones									
Contract Dates									
CP02	Contract Period (1218 days)	1216	26-Sep-15	25-Jan-19	26-Sep-15 A	25-Jan-19	12%	0	0
Schedule of Milesones									
Cost Centre A - Preliminaries and General Requirements									
MSA.01	Complete Construction Programme and Methodology Subn	0		31-Oct-15		29-Feb-16	0%	-4	3
MSA.02	Obtain approval from Contractor Admin on: Proj Man Doc's	0		30-Nov-15		31-Mar-16	0%	-4	3
Cost Centre C - Public Works and Tunnel Protection Works									
MSC.01	Obtain Notice of No Objection from Contract Administrator	0		29-Feb-16		30-Apr-16	0%	-2	34
Interface Dates									
Access Date									
AD1040	M05 - SPS Frontage At-grade Road (11Feb16)	0	11-Feb-16		29-Feb-16		0%	-18	32
AD1050	M06 - ICP External Entrance Portal beside At-garde Road (	0	11-Feb-16		29-Feb-16		0%	-18	8
AD1060	M07 - ICP Frontage beside At-grade Road (on Completion (	0	11-Feb-16		29-Feb-16		0%	-18	8
AD1160	M15 - M+ / Lyric Staircase (2nd access) (30Jun16)	0	17-May-16		01-May-16		0%	16	664
AD1180	M16 - Lyric Interface South (2nd access) (30Jun16)	0	17-May-16		01-May-16		0%	16	664
AD1240	M22 - ICP/SPS Frontage within At-grade Road (Completion	0	11-Feb-16		29-Feb-16		0%	-18	8
AD1320	M32 - ICP & SPS, West of Existing Temporary Access Road	0	11-Feb-16		29-Feb-16		0%	-18	8
AD1590	L25 - MTR Area to North-West of MTR Workshop (on STT 8	0	31-Mar-16		31-Mar-16		0%	0	1031
AD1600	L26 - MTR Area to South-West of MTR Workshop (on STT 8	0	31-Mar-16		31-Mar-16		0%	0	1031
Vacation Date									
VD1140	M14a - Lyric Interface South, GL 12-14 (31Jan16)	0		16-Feb-16		16-Feb-16 A	100%	0	
VD1150	M15 - M+ / Lyric Staircase (1st H/O to Lyric) (31Jan16)	0		16-Feb-16		16-Feb-16 A	100%	0	
VD1170	M16 - M+ Lyric Interface South (1st H/O to Lyric) (31Jan1	0		16-Feb-16		16-Feb-16 A	100%	0	
VD1240	M22 - ICP/SPS Frontage within At-grade Road (H/O to PIW	0		30-Nov-15		29-Feb-16	0%	-90	8
VD1630	M72 - Area within At-Grade Road by PIW, beside M+ Entra	0		30-Nov-15		29-Feb-16	0%	-90	1062
Interface Schedule (Refer to Interface Schedule - Appendix D1 20-Nov-2015)									
Lyric Theatre Complex and Extended Basement (Lyric)									
Along Interface South of AEL									
DCS Basement Area									
IF1000	Complete excavation of DCS basement for Lyric contractor	0		16-Feb-16		01-Feb-16 A	100%	16	
IF1010	Vacate M14a, M15 and M16	0		16-Feb-16		01-Feb-16 A	100%	16	
IF1030	Take possession of M15 and M16 after pipe piles and grout	0	17-May-16		01-May-16		0%	16	664
Grid 6 & 12 Area									



Baseline Milestone
Primary Baseline
Milestone
Non-Critical
Critical Bar

West Kowloon Cultural District Authority

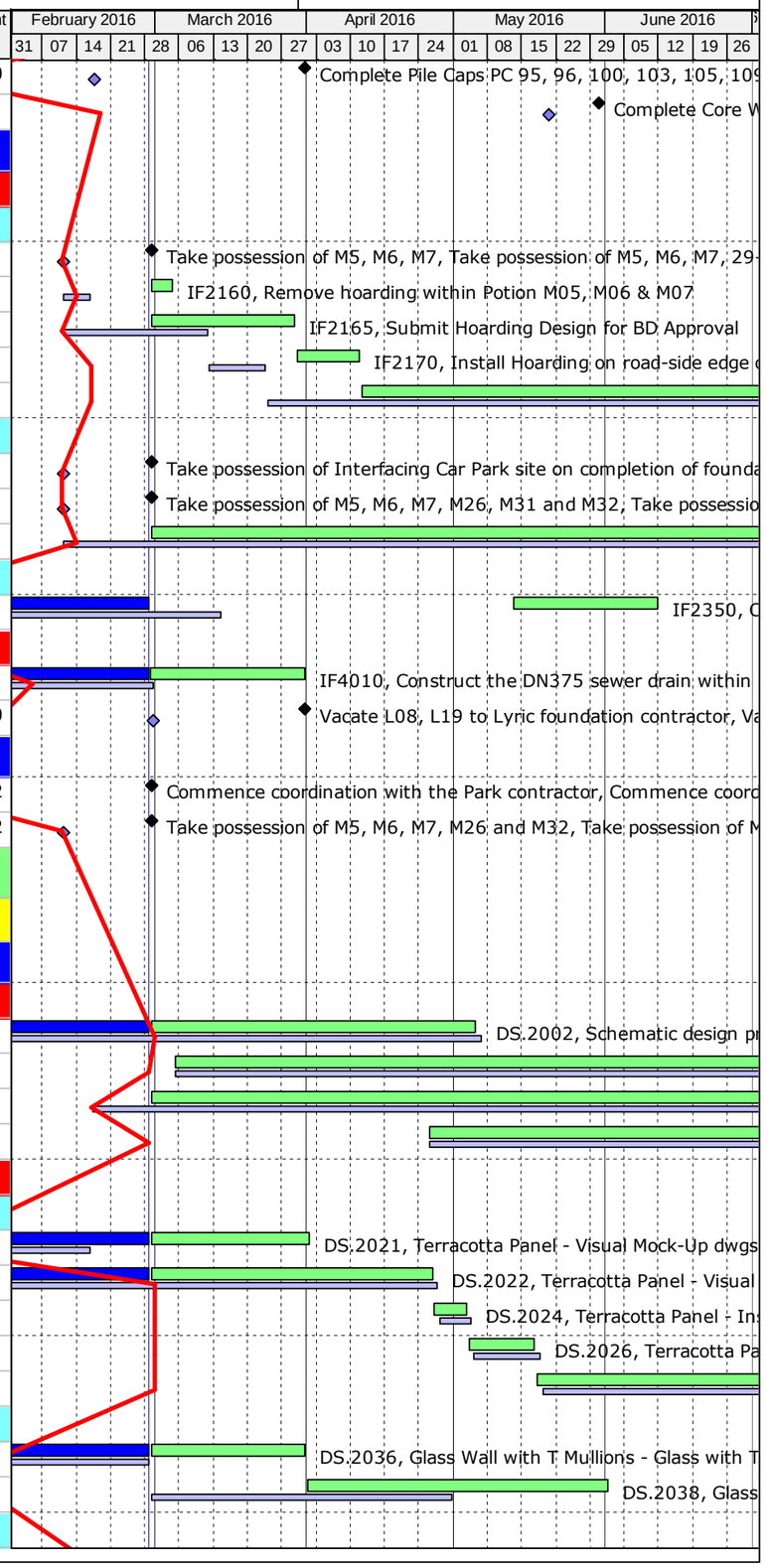
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

HSIN新昌 CHONG

Date	Revision	Checked	Approved
02-Dec-15	3MRP Status Nov 2015 - Rev ...	Chris / Edgar	Leo Harnett
31-Dec-15	3MRP Status Dec 2015 - Rev ...	Denmark / C...	Leo Harnett
15-Mar-16	3MRP Status Feb 2016 - Rev ...	Jojo Alcazaren	Desmond Sze

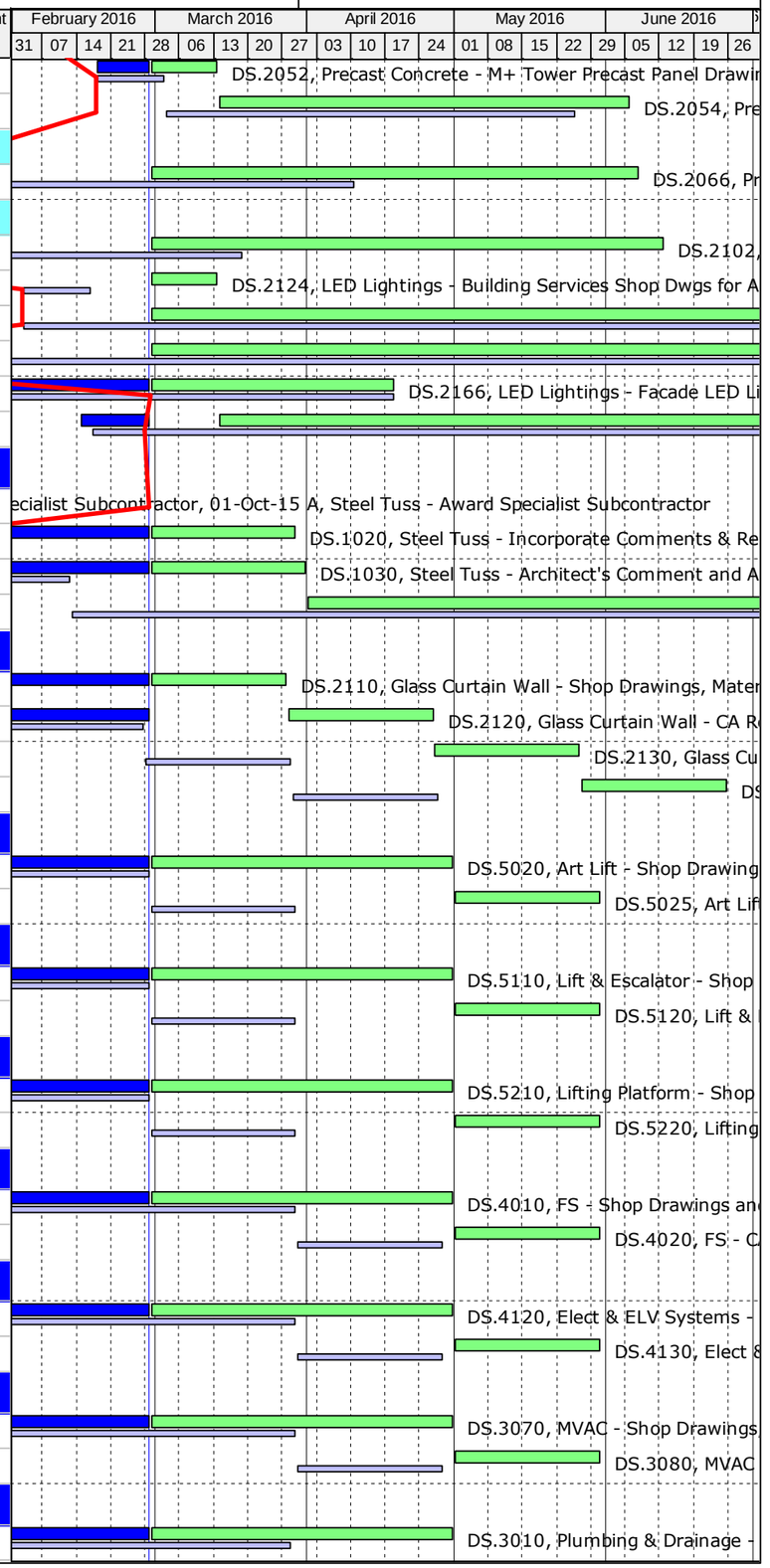
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
IF1032	Complete Pile Caps PC 95, 96, 100, 103, 105, 109 & 116	0		17-Feb-16		31-Mar-16	0%	-43	1030
IF1038	Complete Core Walls on PC96 to G/F Level	0		20-May-16		30-May-16	0%	-10	970
PIW Phase 1									
Civil & Structual Interface with PIW At-Grade Road									
Interface Car Park Utilities Works									
IF2010	Take possession of M5, M6, M7	0	11-Feb-16		29-Feb-16		0%	-18	153
IF2160	Remove hoarding within Potion M05, M06 & M07	5	11-Feb-16	16-Feb-16	29-Feb-16	04-Mar-16	0%	-15	122
IF2165	Submit Hoarding Design for BD Approval	30	11-Feb-16	11-Mar-16	29-Feb-16	29-Mar-16	0%	-18	153
IF2170	Install Hoarding on road-side edge of footway (500mm cle	10	12-Mar-16	23-Mar-16	30-Mar-16	11-Apr-16	0%	-12	104
IF2180	Construct U/G utilities connections from footway to ICP/SF	70	24-Mar-16	05-Jul-16	12-Apr-16	25-Jul-16	0%	-12	104
Sewage Pump Station									
IF2270	Take possession of Interfacing Car Park site on completion	0	11-Feb-16		29-Feb-16		0%	-18	32
IF2280	Take possession of M5, M6, M7, M26, M31 and M32	0	11-Feb-16		29-Feb-16		0%	-18	32
IF2290	Construction of SPS incl. ELS, Structure, T&C	361	11-Feb-16	22-Jun-17	29-Feb-16	17-Jul-17	0%	-15	25
Drainage Interface with PIW									
IF2350	Construct the DN375 & DN600 storm drain within At-grac	75	10-Dec-15	14-Mar-16	05-Dec-15 A	11-Jun-16	0%	-62	143
Sewerage Interface with PIW									
IF4010	Construct the DN375 sewer drain within Austin Road Wes	50	29-Dec-15	29-Feb-16	05-Dec-15 A	31-Mar-16	0%	-24	738
IF4020	Vacate L08, L19 to Lyric foundation contractor	0		29-Feb-16		31-Mar-16	0%	-31	1030
Park									
IF3000	Commence coordination with the Park contractor	0	15-Jan-16		29-Feb-16		0%	-45	1002
IF3010	Take possession of M5, M6, M7, M26 and M32	0	11-Feb-16		29-Feb-16		0%	-18	1002
Preliminaries									
Design & Procurements									
External Facade Pre-Construction									
BD Submission, Consent & Approval									
DS.2002	Schematic design preparation & submission	144	15-Dec-15	06-May-16	15-Dec-15 A	05-May-16	40%	1	18
DS.2004	Shop dwgs submission and approval	155	05-Mar-16	06-Aug-16	05-Mar-16	06-Aug-16	0%	0	18
DS.2005	Embed BD Submission, consent & appvl for M+ Podium	460	17-Feb-16	21-May-17	29-Feb-16	02-Jun-17	0%	-12	68
DS.2008	BD Submission to consultant for M+ Podium & Tower	111	26-Apr-16	14-Aug-16	26-Apr-16	14-Aug-16	0%	0	18
Materials Submission & Approval									
Terracotta Facade Panel									
DS.2021	Terracotta Panel - Visual Mock-Up dwgs submission & appv	113	27-Oct-15	16-Feb-16	27-Oct-15 A	01-Apr-16	90%	-45	12
DS.2022	Terracotta Panel - Visual Mock-Up (Ordering, production &	88	31-Jan-16	27-Apr-16	31-Jan-16 A	26-Apr-16	30%	1	12
DS.2024	Terracotta Panel - Installation of Mock-up sample	7	28-Apr-16	04-May-16	27-Apr-16	03-May-16	0%	1	12
DS.2026	Terracotta Panel - Visual Mock-up Inspection & Approval	14	05-May-16	18-May-16	04-May-16	17-May-16	0%	1	12
DS.2028	Terracotta Panel - Ordering & Casting of Terracotta	136	19-May-16	01-Oct-16	18-May-16	30-Sep-16	0%	1	12
Glass Wall with T Mullion									
DS.2036	Glass Wall with T Mullions - Glass with T-Mullion Sample A	70	21-Dec-15	28-Feb-16	21-Dec-15 A	31-Mar-16	0%	-32	44
DS.2038	Glass Wall with T Mullions - Visual Mock-Up (Ordering, proc	62	29-Feb-16	30-Apr-16	01-Apr-16	01-Jun-16	0%	-32	44
Precast Concrete for M+ Tower									



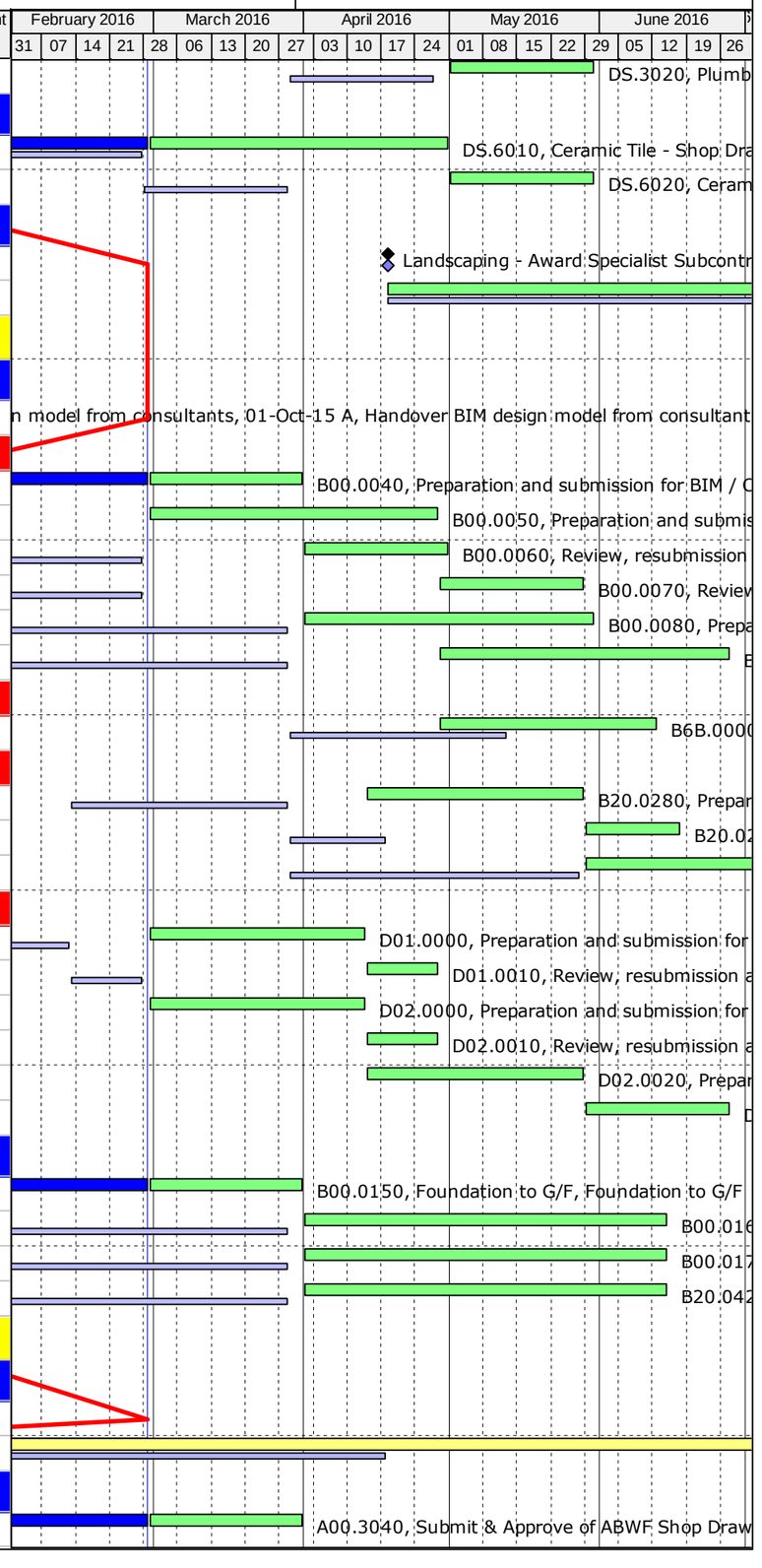
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
DS.2052	Precast Concrete - M+ Tower Precast Panel Drawing Appro	14	18-Feb-16	02-Mar-16	18-Feb-16 A	13-Mar-16	0%	-11	38
DS.2054	Precast Concrete - Visual Mock-Up (Ordering, production &	84	03-Mar-16	25-May-16	14-Mar-16	05-Jun-16	0%	-11	38
Precast Concrete for M+ Podium									
DS.2066	Precast Concrete - M+ Podium Precast Panel Mock-Up Dwg	100	02-Jan-16	10-Apr-16	29-Feb-16	07-Jun-16	0%	-58	111
LED Lightings									
DS.2102	LED Lightings - Curtain Wall Tower Facade Panel Shop Dw	105	05-Dec-15	18-Mar-16	29-Feb-16	12-Jun-16	0%	-86	51
DS.2124	LED Lightings - Building Services Shop Dwgs for Appvl for I	14	03-Feb-16	16-Feb-16	29-Feb-16	13-Mar-16	0%	-26	10
DS.2134	LED Lightings - Building Services Shop Dwgs Submission f	350	03-Feb-16	17-Jan-17	29-Feb-16	12-Feb-17	0%	-26	148
DS.2154	LED Lightings - Building Services Shop Dwgs Submission f	350	05-Dec-15	18-Nov-16	29-Feb-16	12-Feb-17	0%	-86	99
DS.2166	LED Lightings - Facade LED Lightings Submission & Appvl	180	22-Oct-15	18-Apr-16	27-Oct-15 A	18-Apr-16	70%	0	24
DS.2176	LED Lightings - Production Mock-Up (System & Workmans	150	17-Feb-16	15-Jul-16	15-Feb-16 A	16-Jul-16	10%	-1	10
Structural Steel Truss									
DS.1000	Steel Tuss - Award Specialist Subcontractor	0	01-Oct-15		01-Oct-15 A		100%	0	
DS.1020	Steel Tuss - Incorporate Comments & Resubmit	30	30-Dec-15	28-Jan-16	09-Nov-15 A	29-Mar-16	50%	-61	28
DS.1030	Steel Tuss - Architect's Comment and Approval	75	30-Nov-15	12-Feb-16	03-Dec-15 A	31-Mar-16	20%	-48	26
DS.1040	Steel Tuss - Procurement, Fabrication & Delivery	150	13-Feb-16	11-Jul-16	01-Apr-16	28-Aug-16	0%	-48	26
Glass Curtain Wall									
DS.2110	Glass Curtain Wall - Shop Drawings, Materials & Method St	60	30-Nov-15	28-Jan-16	30-Nov-15 A	27-Mar-16	0%	-59	30
DS.2120	Glass Curtain Wall - CA Review & Comments	30	29-Jan-16	27-Feb-16	29-Jan-16 A	26-Apr-16	0%	-59	30
DS.2130	Glass Curtain Wall - Incorporate Comments & Resubmit	30	28-Feb-16	28-Mar-16	27-Apr-16	26-May-16	0%	-59	30
DS.2140	Glass Curtain Wall - CA Review & Approval	30	29-Mar-16	27-Apr-16	27-May-16	25-Jun-16	0%	-59	30
Art Lift (LT-11 & LT-13)									
DS.5020	Art Lift - Shop Drawings, Materials & Method Statements S	90	01-Dec-15	28-Feb-16	01-Dec-15 A	30-Apr-16	20%	-62	183
DS.5025	Art Lift - CA Review & Comments	30	29-Feb-16	29-Mar-16	01-May-16	30-May-16	0%	-62	183
Lifts and Escalator									
DS.5110	Lift & Escalator - Shop Drawings, Materials & Method State	90	01-Dec-15	28-Feb-16	01-Dec-15 A	30-Apr-16	0%	-62	134
DS.5120	Lift & Escalator - CA Review & Comments	30	29-Feb-16	29-Mar-16	01-May-16	30-May-16	0%	-62	134
Mechanical and Lifting Platform									
DS.5210	Lifting Platform - Shop Drawings, Materials & Method State	90	01-Dec-15	28-Feb-16	01-Dec-15 A	30-Apr-16	30%	-62	183
DS.5220	Lifting Platform - CA Review & Comments	30	29-Feb-16	29-Mar-16	01-May-16	30-May-16	0%	-62	183
Fire Services									
DS.4010	FS - Shop Drawings and Materials Submission and Approva	120	01-Dec-15	29-Mar-16	01-Dec-15 A	30-Apr-16	30%	-32	28
DS.4020	FS - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-May-16	30-May-16	0%	-32	28
Electrical and ELV Systems									
DS.4120	Elect & ELV Systems - Shop Drawings and Materials Subm	120	01-Dec-15	29-Mar-16	01-Dec-15 A	30-Apr-16	30%	-32	78
DS.4130	Elect & ELV Systems - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-May-16	30-May-16	0%	-32	78
MVAC									
DS.3070	MVAC - Shop Drawings, Materials & Method Statements Su	120	01-Dec-15	29-Mar-16	01-Dec-15 A	30-Apr-16	30%	-32	48
DS.3080	MVAC - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-May-16	30-May-16	0%	-32	48
Plumbing and Drainage									
DS.3010	Plumbing & Drainage - Shop Drawings, Materials & Methoc	90	30-Dec-15	28-Mar-16	30-Dec-15 A	30-Apr-16	30%	-33	78



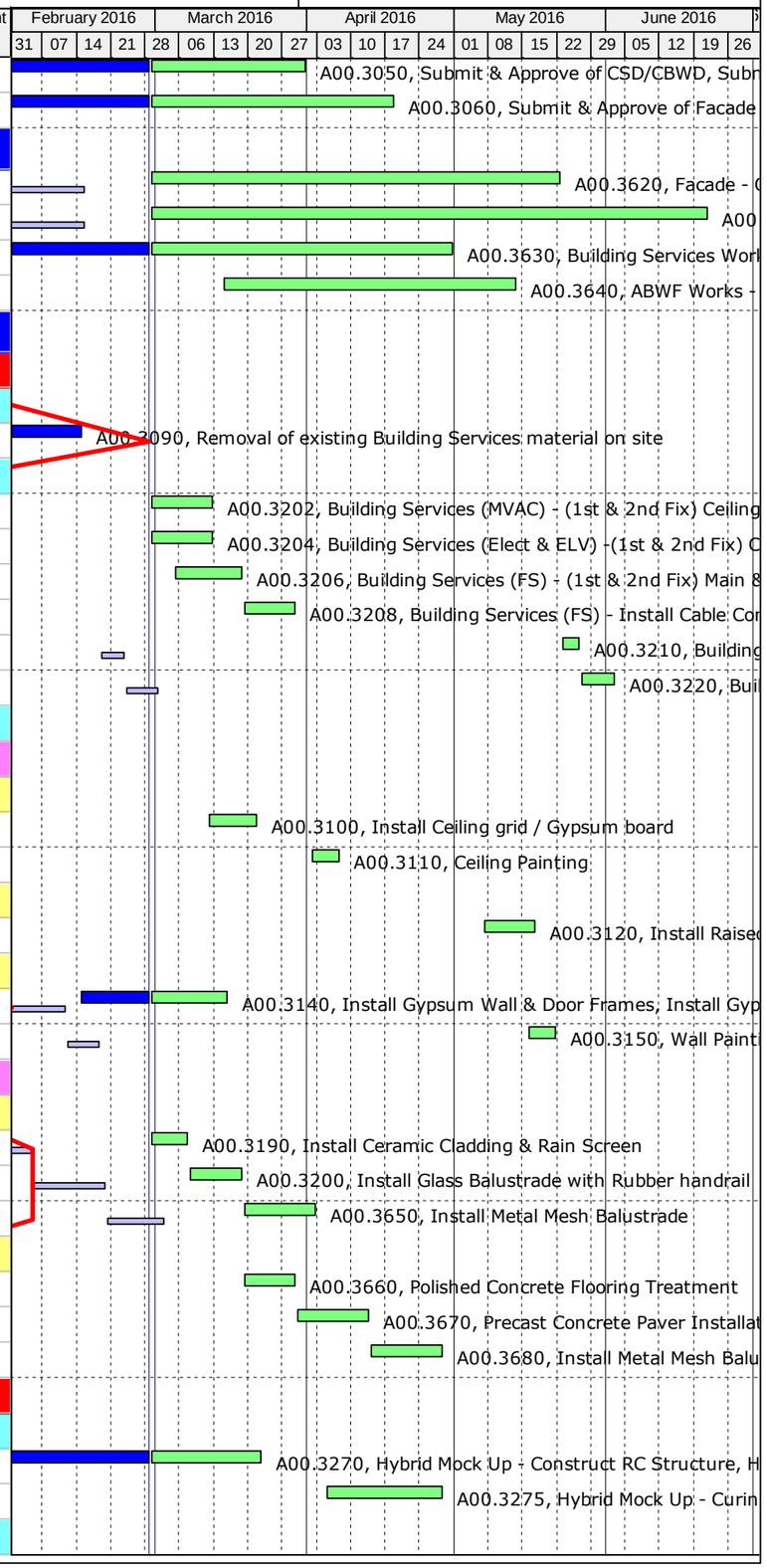
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
DS.3020	Plumbing & Drainage - CA Review & Comments	30	29-Mar-16	27-Apr-16	01-May-16	30-May-16	0%	-33	78
Ceramic Tile									
DS.6010	Ceramic Tile - Shop Drawings, Materials Sample Submissio	90	30-Nov-15	27-Feb-16	30-Nov-15 A	30-Apr-16	10%	-63	760
DS.6020	Ceramic Tile - CA Review & Comments	30	28-Feb-16	28-Mar-16	01-May-16	30-May-16	0%	-63	760
Soft and Hard Landscaping									
DS.7000	Landscaping - Award Specialist Subcontractor	0	18-Apr-16		18-Apr-16		0%	0	31
DS.7010	Landscaping - Shop Drawings, Materials & Method Statem	90	18-Apr-16	16-Jul-16	18-Apr-16	16-Jul-16	0%	0	31
Design Detailing / Buildability Co-ordination									
Spatial Coordination for BIM / CSD / CBWD									
B00.0005	Handover BIM design model from consultants	0	01-Oct-15		01-Oct-15 A		100%	0	
M+ Podium									
B00.0040	Preparation and submission for BIM / CSD / CBWD at G/F (	60	30-Nov-15	28-Jan-16	30-Nov-15 A	31-Mar-16	25%	-63	21
B00.0050	Preparation and submission for BIM / CSD / CBWD at 1/F (	60	30-Nov-15	28-Jan-16	29-Feb-16	28-Apr-16	0%	-91	117
B00.0060	Review, resubmission and approval for BIM / CSD / CBWD	30	29-Jan-16	27-Feb-16	01-Apr-16	30-Apr-16	0%	-63	142
B00.0070	Review, resubmission and approval for BIM / CSD / CBWD	30	29-Jan-16	27-Feb-16	29-Apr-16	28-May-16	0%	-91	162
B00.0080	Preparation and submission for BIM / CSD / CBWD at 1M/F	60	29-Jan-16	28-Mar-16	01-Apr-16	30-May-16	0%	-63	21
B00.0090	Preparation and submission for BIM / CSD / CBWD at 2/F (	60	29-Jan-16	28-Mar-16	29-Apr-16	27-Jun-16	0%	-91	117
M+ Tower									
B6B.0000	Preparation and submission for BIM / CSD / CBWD at 4/F (	45	29-Mar-16	12-May-16	29-Apr-16	12-Jun-16	0%	-31	117
CSF Block									
B20.0280	Preparation and submission for BIM / CSD / CBWD at G/F (	45	13-Feb-16	28-Mar-16	14-Apr-16	28-May-16	0%	-61	12
B20.0290	Review, resubmission and approval for BIM / CSD / CBWD	20	29-Mar-16	17-Apr-16	29-May-16	17-Jun-16	0%	-61	292
B20.0300	Preparation and submission for BIM / CSD / CBWD at 1-5/I	60	29-Mar-16	27-May-16	29-May-16	27-Jul-16	0%	-61	12
Interfacing Car Park and Sewage Pumping Station (SPS)									
D01.0000	Preparation and submission for BIM / CSD / CBWD at SPS	45	30-Dec-15	12-Feb-16	29-Feb-16	13-Apr-16	0%	-61	12
D01.0010	Review, resubmission and approval for BIM / CSD / CBWD	15	13-Feb-16	27-Feb-16	14-Apr-16	28-Apr-16	0%	-61	61
D02.0000	Preparation and submission for BIM / CSD / CBWD at ICP E	45	01-Oct-15	14-Nov-15	29-Feb-16	13-Apr-16	0%	-151	49
D02.0010	Review, resubmission and approval for BIM / CSD / CBWD	15	15-Nov-15	29-Nov-15	14-Apr-16	28-Apr-16	0%	-151	109
D02.0020	Preparation and submission for BIM / CSD / CBWD at ICP (	45	15-Nov-15	29-Dec-15	14-Apr-16	28-May-16	0%	-151	49
D02.0030	Review, resubmission and approval for BIM / CSD / CBWD	30	30-Dec-15	28-Jan-16	29-May-16	27-Jun-16	0%	-151	49
4D Time Management (1st Draft)									
B00.0150	Foundation to G/F	75	31-Oct-15	13-Jan-16	31-Oct-15 A	31-Mar-16	60%	-78	178
B00.0160	Facade works	75	14-Jan-16	28-Mar-16	01-Apr-16	14-Jun-16	0%	-78	955
B00.0170	M+ Podium	75	14-Jan-16	28-Mar-16	01-Apr-16	14-Jun-16	0%	-78	178
B20.0420	ICP and SPS	75	14-Jan-16	28-Mar-16	01-Apr-16	14-Jun-16	0%	-78	185
Visual Mock-Up (VMU)									
VMU Preliminary									
A00.3600	Site Possession	0	01-Oct-15		01-Oct-15 A		100%	0	
A00.3610	VMU Works Period (Contract requirement of 200 calendar	333	01-Oct-15	17-Apr-16	01-Oct-15 A	28-Aug-16	0%	-133	18
VMU Document / Drawing Submission									
A00.3040	Submit & Approve of ABWF Shop Drawing & Sample	65	01-Oct-15	04-Dec-15	22-Jan-16 A	31-Mar-16	85%	-118	53



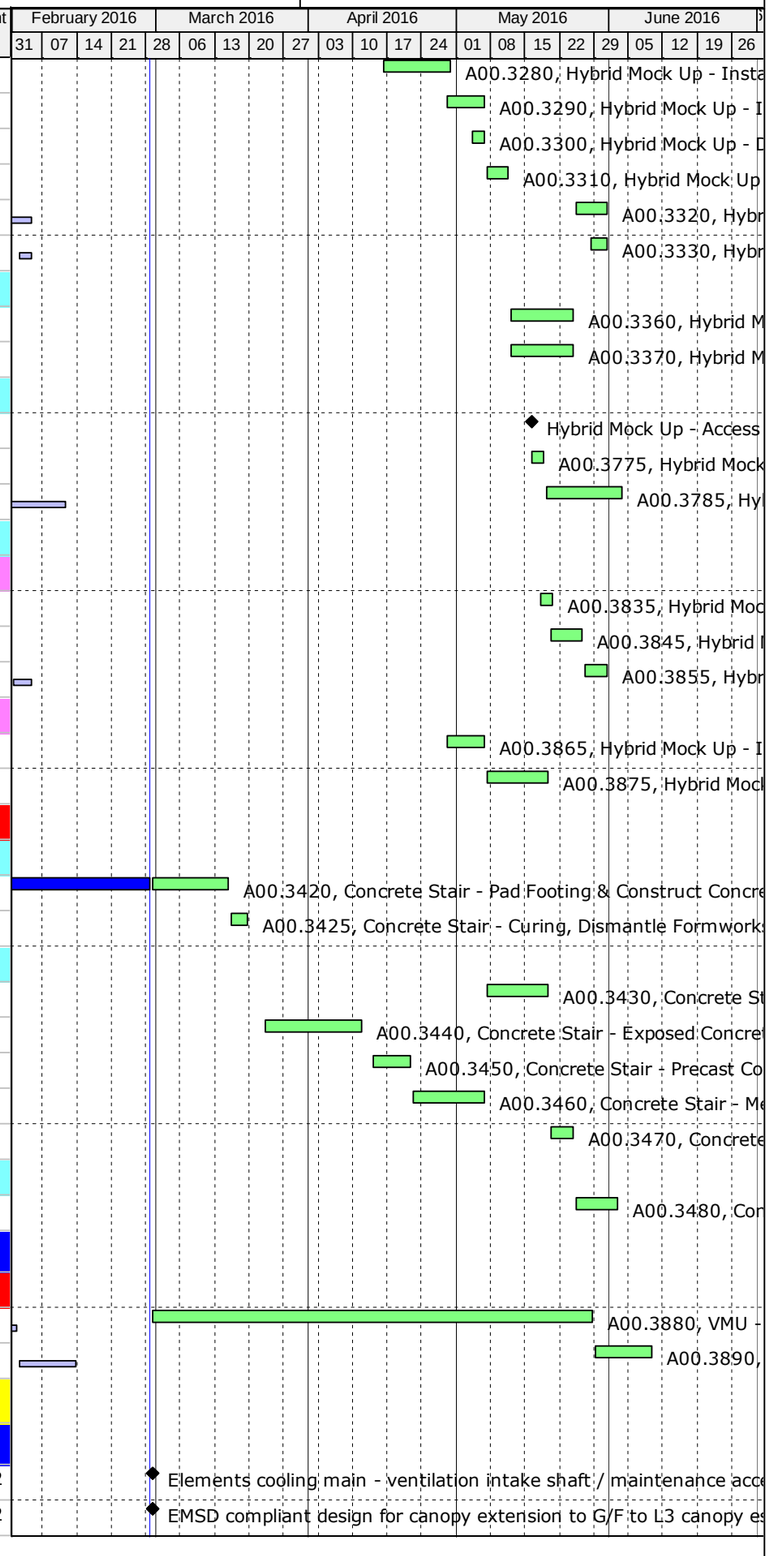
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
A00.3050	Submit & Approve of CSD/CBWD	46	05-Oct-15	19-Nov-15	25-Nov-15 A	31-Mar-16	85%	-133	93
A00.3060	Submit & Approve of Facade Shop Drawings & Samples	105	01-Oct-15	13-Jan-16	26-Nov-15 A	18-Apr-16	75%	-96	22
VMU Procurements / Materials Delivery to Site									
A00.3620	Facade - Ordering & Production for Concrete Shell Mock-Up	84	24-Nov-15	15-Feb-16	29-Feb-16 A	22-May-16	5%	-97	52
A00.3625	Facade - Ordering & Production for Hybrid Mock-Up	114	25-Oct-15	15-Feb-16	29-Feb-16	21-Jun-16	0%	-127	22
A00.3630	Building Services Works - Materials Ordering / Fabrication /	90	27-Oct-15	24-Jan-16	01-Feb-16 A	30-Apr-16	30%	-97	93
A00.3640	ABWF Works - Materials Ordering / Fabrication / Delivery	60	23-Nov-15	21-Jan-16	15-Mar-16	13-May-16	0%	-113	53
VMU Construction									
Step 2.0 - Existing Concrete Shell									
VMU Site Possession									
A00.3090	Removal of existing Building Services material on site	10	29-Oct-15	09-Nov-15	01-Feb-16 A	15-Feb-16 A	100%	-76	
VMU Building Service Works									
A00.3202	Building Services (MVAC) - (1st & 2nd Fix) Ceiling Bracket	12	20-Nov-15	03-Dec-15	29-Feb-16	12-Mar-16	0%	-79	74
A00.3204	Building Services (Elect & ELV) -(1st & 2nd Fix) Conduit/C	12	27-Nov-15	10-Dec-15	29-Feb-16	12-Mar-16	0%	-73	74
A00.3206	Building Services (FS) - (1st & 2nd Fix) Main & Secondary	12	04-Dec-15	17-Dec-15	05-Mar-16	18-Mar-16	0%	-72	74
A00.3208	Building Services (FS) - Install Cable Containment / Wiring	6	15-Jan-16	21-Jan-16	19-Mar-16	29-Mar-16	0%	-52	94
A00.3210	Building Services (MVAC) - Final Fix) Ceiling dumper, Air G	4	19-Feb-16	23-Feb-16	23-May-16	26-May-16	0%	-74	43
A00.3220	Building Services (Elect & ELV) - (Final Fix) CCTV Camera,	6	24-Feb-16	01-Mar-16	27-May-16	02-Jun-16	0%	-74	43
VMU ABWF & Finishes									
VMU Gallery & B1 Plaza Space									
VMU Celling									
A00.3100	Install Ceiling grid / Gypsum board	8	18-Dec-15	30-Dec-15	12-Mar-16	21-Mar-16	0%	-66	74
A00.3110	Ceiling Painting	4	31-Dec-15	05-Jan-16	02-Apr-16	07-Apr-16	0%	-73	67
VMU Floor									
A00.3120	Install Raised Flooring	8	15-Jan-16	23-Jan-16	07-May-16	17-May-16	0%	-89	43
VMU Wall									
A00.3140	Install Gypsum Wall & Door Frames	15	22-Jan-16	11-Feb-16	15-Feb-16 A	15-Mar-16	30%	-28	103
A00.3150	Wall Painting	6	12-Feb-16	18-Feb-16	16-May-16	21-May-16	0%	-74	43
VMU Lobby Space									
VMU Wall									
A00.3190	Install Ceramic Cladding & Rain Screen	7	28-Jan-16	04-Feb-16	29-Feb-16	07-Mar-16	0%	-24	109
A00.3200	Install Glass Balustrade with Rubber handrail	10	05-Feb-16	19-Feb-16	08-Mar-16	18-Mar-16	0%	-24	109
A00.3650	Install Metal Mesh Balustrade	10	20-Feb-16	02-Mar-16	19-Mar-16	02-Apr-16	0%	-24	109
VMU Floor									
A00.3660	Polished Concrete Flooring Treatment	6	18-Dec-15	28-Dec-15	19-Mar-16	29-Mar-16	0%	-72	811
A00.3670	Precast Concrete Paver Installation	12	29-Dec-15	12-Jan-16	30-Mar-16	13-Apr-16	0%	-72	811
A00.3680	Install Metal Mesh Balustrade	13	13-Jan-16	27-Jan-16	14-Apr-16	28-Apr-16	0%	-72	811
VMU Step 2.1 - Hybrid Shell Mock-Up									
VMU Structural Works									
A00.3270	Hybrid Mock Up - Construct RC Structure	45	15-Oct-15	07-Dec-15	08-Jan-16 A	22-Mar-16	0%	-84	35
A00.3275	Hybrid Mock Up - Curing, Dismantle Scaffolds and Cleaning	21	08-Dec-15	05-Jan-16	05-Apr-16	28-Apr-16	0%	-91	35
VMU ABWF & Finishes									



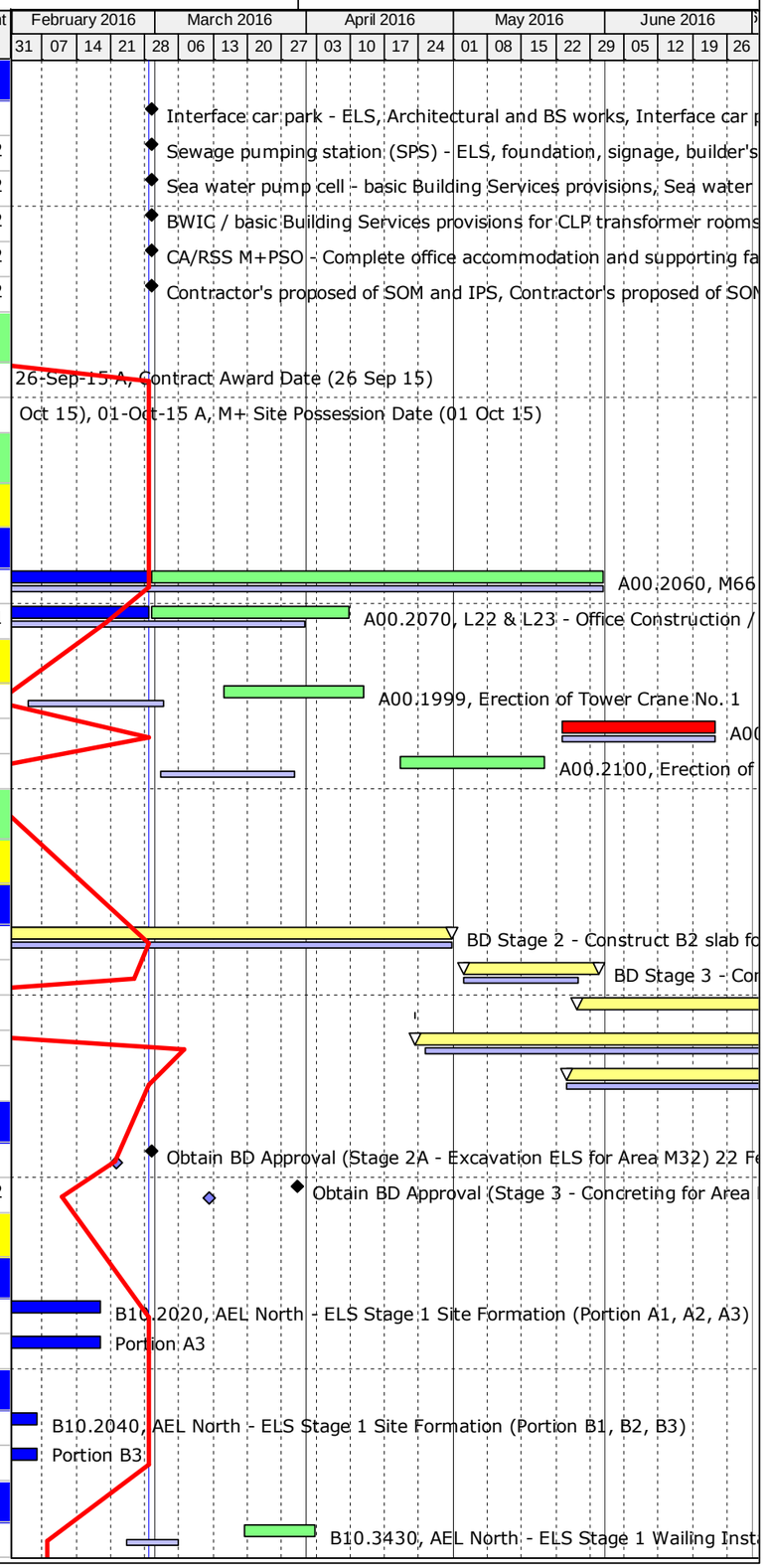
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
A00.3280	Hybrid Mock Up - Install PC Paver at External Floor	12	19-Dec-15	06-Jan-16	16-Apr-16	29-Apr-16	0%	-91	36
A00.3290	Hybrid Mock Up - Internal Wall Plasters and Wet Trades	6	06-Jan-16	12-Jan-16	29-Apr-16	06-May-16	0%	-91	36
A00.3300	Hybrid Mock Up - Door Frame Installation	3	09-Jan-16	12-Jan-16	04-May-16	06-May-16	0%	-91	36
A00.3310	Hybrid Mock Up - Floor Screeding & Cure	4	13-Jan-16	16-Jan-16	07-May-16	11-May-16	0%	-91	36
A00.3320	Hybrid Mock Up - Install wooden slat & tower open mesh c	6	29-Jan-16	04-Feb-16	25-May-16	31-May-16	0%	-91	36
A00.3330	Hybrid Mock Up - Install MML Inclines Concrete Ceiling for	3	02-Feb-16	04-Feb-16	28-May-16	31-May-16	0%	-91	36
VMU MEP Building Service Works									
A00.3360	Hybrid Mock Up - Building Services (Elect) - (1st & 2nd Fix	10	18-Jan-16	28-Jan-16	12-May-16	24-May-16	0%	-91	56
A00.3370	Hybrid Mock Up - Building Services (FS) - (1st & 2nd Fix) M	10	18-Jan-16	28-Jan-16	12-May-16	24-May-16	0%	-91	56
VMU External Facade									
A00.3765	Hybrid Mock Up - Access Date for Hybrid Mock-Up	0	20-Jan-16		16-May-16		0%	-91	43
A00.3775	Hybrid Mock Up - Erection for Scaffolds	3	20-Jan-16	22-Jan-16	16-May-16	18-May-16	0%	-91	43
A00.3785	Hybrid Mock Up - Install External Facade for Hybrid Mock-U	14	23-Jan-16	11-Feb-16	19-May-16	03-Jun-16	0%	-91	43
VMU External Works									
VMU MEP - FS Pipeworks									
A00.3835	Hybrid Mock Up - Excavation Works From Existing Dog Hou	3	22-Jan-16	25-Jan-16	18-May-16	20-May-16	0%	-91	35
A00.3845	Hybrid Mock Up - Install FS Water Pipeworks & PVC ducts	6	25-Jan-16	30-Jan-16	20-May-16	26-May-16	0%	-91	35
A00.3855	Hybrid Mock Up - Lay Cabling / Wiring and Termination	4	01-Feb-16	04-Feb-16	27-May-16	31-May-16	0%	-91	35
VMU MEP - Electrical Works									
A00.3865	Hybrid Mock Up - Install Pipe ducts From Hybrid Mock-Up t	6	06-Jan-16	12-Jan-16	29-Apr-16	06-May-16	0%	-91	62
A00.3875	Hybrid Mock Up - Lay Cabling & Termination From Hybrid M	10	13-Jan-16	23-Jan-16	07-May-16	19-May-16	0%	-91	62
VMU Step 2.2 - Concrete Stair									
VMU Structural Works									
A00.3420	Concrete Stair - Pad Footing & Construct Concrete Stair	7	07-Oct-15	14-Oct-15	30-Dec-15 A	15-Mar-16	75%	-123	15
A00.3425	Concrete Stair - Curing, Dismantle Formworks & Cleaning	4	15-Oct-15	19-Oct-15	16-Mar-16*	19-Mar-16	0%	-123	15
VMU ABWF & Finishes									
A00.3430	Concrete Stair - Timber Tread & Risers Installation	10	02-Dec-15	12-Dec-15	07-May-16	19-May-16	0%	-123	15
A00.3440	Concrete Stair - Exposed Concrete Treament	13	23-Oct-15	06-Nov-15	23-Mar-16	11-Apr-16	0%	-123	15
A00.3450	Concrete Stair - Precast Concrete Plank & Treads Installati	7	10-Nov-15	17-Nov-15	14-Apr-16	21-Apr-16	0%	-123	15
A00.3460	Concrete Stair - Metal Balustrade w/ Railing Installation	12	18-Nov-15	01-Dec-15	22-Apr-16	06-May-16	0%	-123	15
A00.3470	Concrete Stair - Painting Works for Metal Balustrade	4	14-Dec-15	17-Dec-15	20-May-16	24-May-16	0%	-123	15
VMU MEP Building Service Works									
A00.3480	Concrete Stair - Electrical Works for LED Lighting on Hand	8	18-Dec-15	30-Dec-15	25-May-16	02-Jun-16	0%	-123	15
VMU Statutory Submission & Inspection									
VMU WSD (FS Pipeworks)									
A00.3880	VMU - Submit Form WW046 (Part 1 & 2) to WSD (Subject	90	04-Nov-15	01-Feb-16	29-Feb-16*	28-May-16	0%	-117	34
A00.3890	VMU - Submit Form WW046 (Part 3) to WSD (by MJV)	12	02-Feb-16	13-Feb-16	29-May-16	09-Jun-16	0%	-117	34
Last Date for Exercising Provisional Sum & Optional Items (Refer Annex B to Preamble) (To be revised									
External Works / Hard & Soft Landscape									
PN2	Elements cooling main - ventilation intake shaft / mainten	0	26-Sep-15		29-Feb-16		0%	-156	1062
PN4	EMSD compliant design for canopy extension to G/F to L3	0		29-Dec-15		29-Feb-16	0%	-61	1062



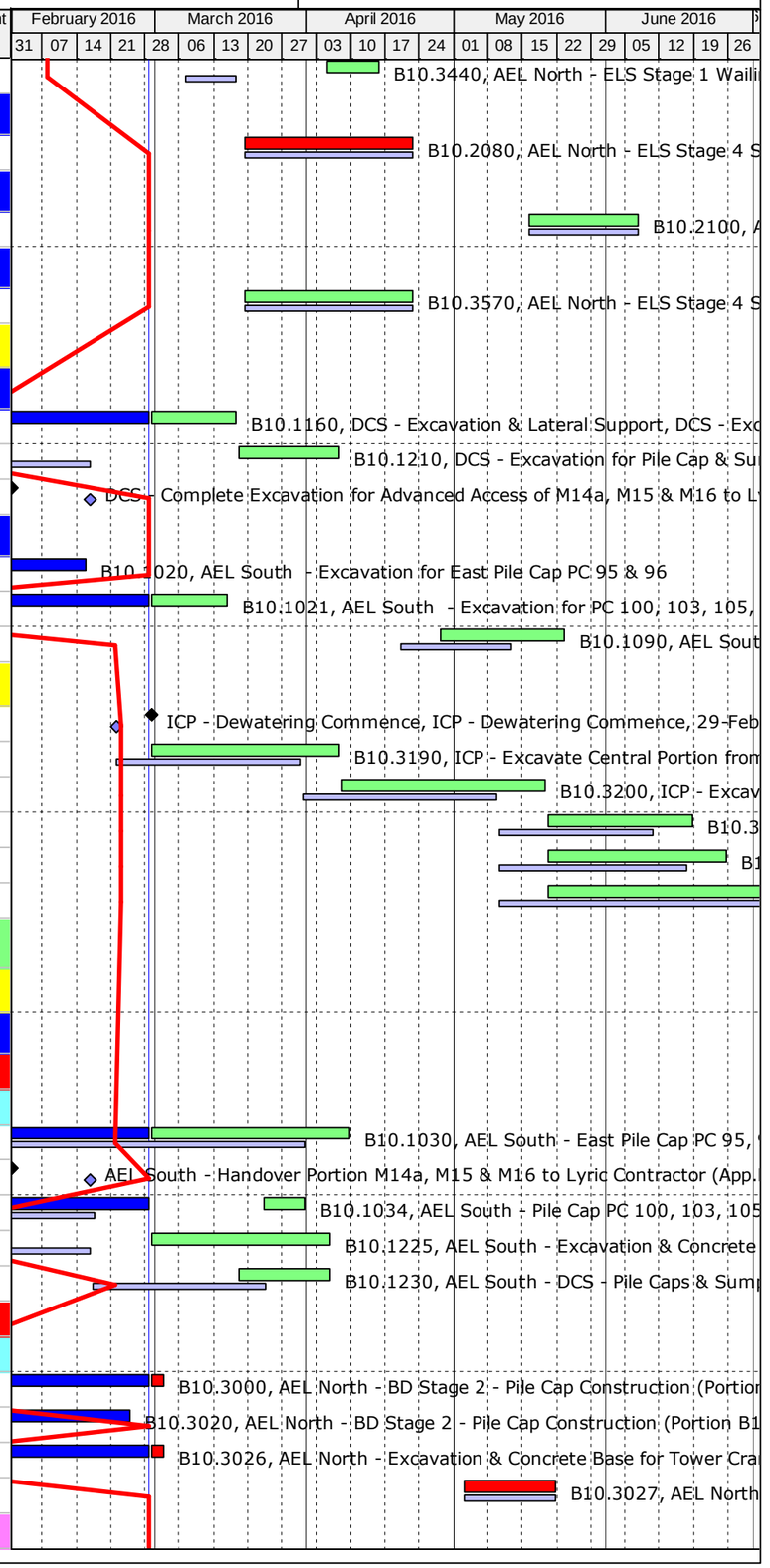
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
Other Provisional Sums / Options for M+ Main Works Contract									
PP2.2	Interface car park - ELS, Architectural and BS works	0		28-Jan-16		29-Feb-16	0%	-31	907
PP3.2	Sewage pumping station (SPS) - ELS, foundation, signage,	0		28-Jan-16		29-Feb-16	0%	-31	1062
PP4	Sea water pump cell - basic Building Services provisions	0		26-Sep-15		29-Feb-16	0%	-155	1062
PP5	BWIC / basic Building Services provisions for CLP transforn	0		26-Sep-15		29-Feb-16	0%	-156	1062
PP6	CA/RSS M+PSO - Complete office accommodation and sup	0		26-Sep-15		29-Feb-16	0%	-156	1062
PP7	Contractor's proposed of SOM and IPS	0		26-Sep-15		29-Feb-16	0%	-156	1062
Construction Milestones (Internal Reference)									
CM0010	Contract Award Date (26 Sep 15)	0	26-Sep-15		26-Sep-15 A		100%	0	
CM0020	M+ Site Possession Date (01 Oct 15)	0	01-Oct-15		01-Oct-15 A		100%	0	
Preliminaries / Construction									
Site Accomodation & Facilities									
Site Office Set Up									
A00.2060	M66 - Period of Occupying Temporary Container Offices	197	17-Nov-15	31-May-16	04-Dec-15 A	31-May-16	50%	0	969
A00.2070	L22 & L23 - Office Construction / Setup	108	15-Dec-15	31-Mar-16	02-Jan-16 A	09-Apr-16	75%	-9	1021
Plant & Equipment									
A00.1999	Erection of Tower Crane No. 1	21	04-Feb-16	02-Mar-16	15-Mar-16*	12-Apr-16	0%	-31	4
A00.2000	Erection of Tower Crane No. 2	21	23-May-16	23-Jun-16	23-May-16	23-Jun-16	0%	0	1
A00.2100	Erection of Tower Crane No. 3	21	02-Mar-16	29-Mar-16	20-Apr-16*	19-May-16	0%	-38	85
Excavation & ELS									
BD Milestones & BD Stages LoE									
Portion M01									
B10.3370	BD Stage 2 - Construct B2 slab for A1,A2,A3 & B1, B2,B3	136	17-Nov-15	30-Apr-16	12-Nov-15 A	30-Apr-16	60%	0	0
B10.3380	BD Stage 3 - Construct B2 slab for A4, B4 & PC constructic	18	03-May-16	26-May-16	03-May-16	30-May-16	0%	-3	0
B10.3390	BD Stage 4 - Construct B2 slab for A5, B5 & Site formatior	81	23-Apr-16	23-Apr-16	26-May-16	26-Sep-16	0%	-102	63
B10.3400	BD Stage 5 - Construct B2 slab for A6, A7, A8, B6 & Site f	102	25-Apr-16	08-Oct-16	23-Apr-16	26-Sep-16	0%	7	63
B10.3410	BD Stage 6 - Construct PC forA9, A10, A11, A12, B7, B8, I	72	24-May-16	10-Sep-16	24-May-16	10-Sep-16	0%	0	50
Portion M32									
B10.1010	Obtain BD Approval (Stage 2A - Excavation ELS for Area M	0	22-Feb-16		29-Feb-16		0%	-7	8
B10.1015	Obtain BD Approval (Stage 3 - Concreting for Area M32) 1	0	12-Mar-16		30-Mar-16		0%	-18	1032
AEL North									
Portion A1, A2, A3									
B10.2020	AEL North - ELS Stage 1 Site Formation (Portion A1, A2, A	32	06-Nov-15	12-Dec-15	06-Nov-15 A	19-Feb-16 A	100%	-51	
B10.2020.30	Portion A3	71			09-Nov-15 A	19-Feb-16 A	100%		
Portion B1, B2, B3									
B10.2040	AEL North - ELS Stage 1 Site Formation (Portion B1, B2, E	40	03-Nov-15	18-Dec-15	03-Nov-15 A	06-Feb-16 A	100%	-38	
B10.2040.30	Portion B3	92			07-Nov-15 A	06-Feb-16 A	100%		
Portion A5, B5									
B10.3430	AEL North - ELS Stage 1 Wailing Installation +4.0mPD (Pc	10	24-Feb-16	05-Mar-16	19-Mar-16*	02-Apr-16	0%	-21	4



(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
B10.3440	AEL North - ELS Stage 1 Wailing Installation +4.0mPD (Pc	10	07-Mar-16	17-Mar-16	05-Apr-16	15-Apr-16	0%	-21	4
Portion A6, A7, A10, A11									
B10.2080	AEL North - ELS Stage 4 Site Formation (Portion A6, A7),	26	19-Mar-16	22-Apr-16	19-Mar-16*	22-Apr-16	0%	0	0
Portion B8 & A9, B9									
B10.2100	AEL North - ELS Stage 5 Site Formation (B8 & A9, B9)	16	16-May-16	07-Jun-16	16-May-16	07-Jun-16	0%	0	22
Portion A8, B6, A12, B7									
B10.3570	AEL North - ELS Stage 4 Site Formation (Portion A8, B6)	26	19-Mar-16	22-Apr-16	19-Mar-16*	22-Apr-16	0%	0	89
AEL South									
DCS									
B10.1160	DCS - Excavation & Lateral Support	30	19-Dec-15	27-Jan-16	19-Dec-15 A	17-Mar-16	70%	-40	15
B10.1210	DCS - Excavation for Pile Cap & Sump Pit	14	28-Jan-16	16-Feb-16	18-Mar-16	07-Apr-16	0%	-40	15
B10.1240	DCS - Complete Excavation for Advanced Access of M14a,	0		16-Feb-16		01-Feb-16 A	100%	11	
AEL South except DCS									
B10.1020	AEL South - Excavation for East Pile Cap PC 95 & 96	5	03-Nov-15	07-Nov-15	04-Jan-16 A	16-Feb-16 A	100%	-78	
B10.1021	AEL South - Excavation for PC 100, 103, 105, 109, 116 &	24	09-Nov-15	05-Dec-15	11-Jan-16 A	15-Mar-16	80%	-79	13
B10.1090	AEL South - Plant Room - Excavate to +2.45mPD for Plan	16	20-Apr-16	12-May-16	28-Apr-16	23-May-16	0%	-7	230
ICP									
B10.3180	ICP - Dewatering Commence	0	22-Feb-16		29-Feb-16		0%	-6	7
B10.3190	ICP - Excavate Central Portion from +3.625mPD to -1.65(	30	22-Feb-16	30-Mar-16	29-Feb-16	07-Apr-16	0%	-6	7
B10.3200	ICP - Excavate Area A to -1.650mPD	30	31-Mar-16	09-May-16	08-Apr-16	19-May-16	0%	-6	7
B10.3210	ICP - Excavate Area B to -1.650mPD	20	10-May-16	10-Jun-16	20-May-16	18-Jun-16	0%	-6	12
B10.3220	ICP - Pile Cap Construction of Area A	25	10-May-16	17-Jun-16	20-May-16	25-Jun-16	0%	-6	7
B10.3240	ICP - Lateral Support	50	10-May-16	26-Jul-16	20-May-16	05-Aug-16	0%	-6	7
Structures									
Basement Structures / Sub-Structure									
Pilecaps									
AEL South									
Stage 1 - East Pilecap & DCS									
B10.1030	AEL South - East Pile Cap PC 95, 96 Construction	77	09-Nov-15	31-Mar-16	04-Jan-16 A	09-Apr-16	30%	-7	4
B10.1032	AEL South - Handover Portion M14a, M15 & M16 to Lyric (	0		16-Feb-16		01-Feb-16 A	100%	11	
B10.1034	AEL South - Pile Cap PC 100, 103, 105, 109, 116 & Tie Be	63	04-Jan-16	17-Feb-16	04-Jan-16 A	31-Mar-16	40%	-34	13
B10.1225	AEL South - Excavation & Concrete Base Construction for	28	12-Jan-16	16-Feb-16	29-Feb-16	05-Apr-16	0%	-38	85
B10.1230	AEL South - DCS - Pile Caps & Sump Pits Construction	12	17-Feb-16	23-Mar-16	18-Mar-16	05-Apr-16	0%	-7	15
AEL North									
Stage 2 - Pilecap (A1,A2,A3,B1,B2,B3)									
B10.3000	AEL North - BD Stage 2 - Pile Cap Construction (Portion A1	21	17-Nov-15	10-Dec-15	12-Nov-15 A	02-Mar-16	95%	-64	0
B10.3020	AEL North - BD Stage 2 - Pile Cap Construction (Portion B1	34	17-Nov-15	29-Dec-15	19-Jan-16 A	25-Feb-16 A	100%	-45	
B10.3026	AEL North - Excavation & Concrete Base for Tower Crane I	12	26-Nov-15	09-Dec-15	26-Nov-15 A	02-Mar-16	95%	-65	0
B10.3027	AEL North - Excavation & Concrete Base for Tower Crane I	12	03-May-16	21-May-16	03-May-16	21-May-16	0%	0	1
Pilecap (A1)									

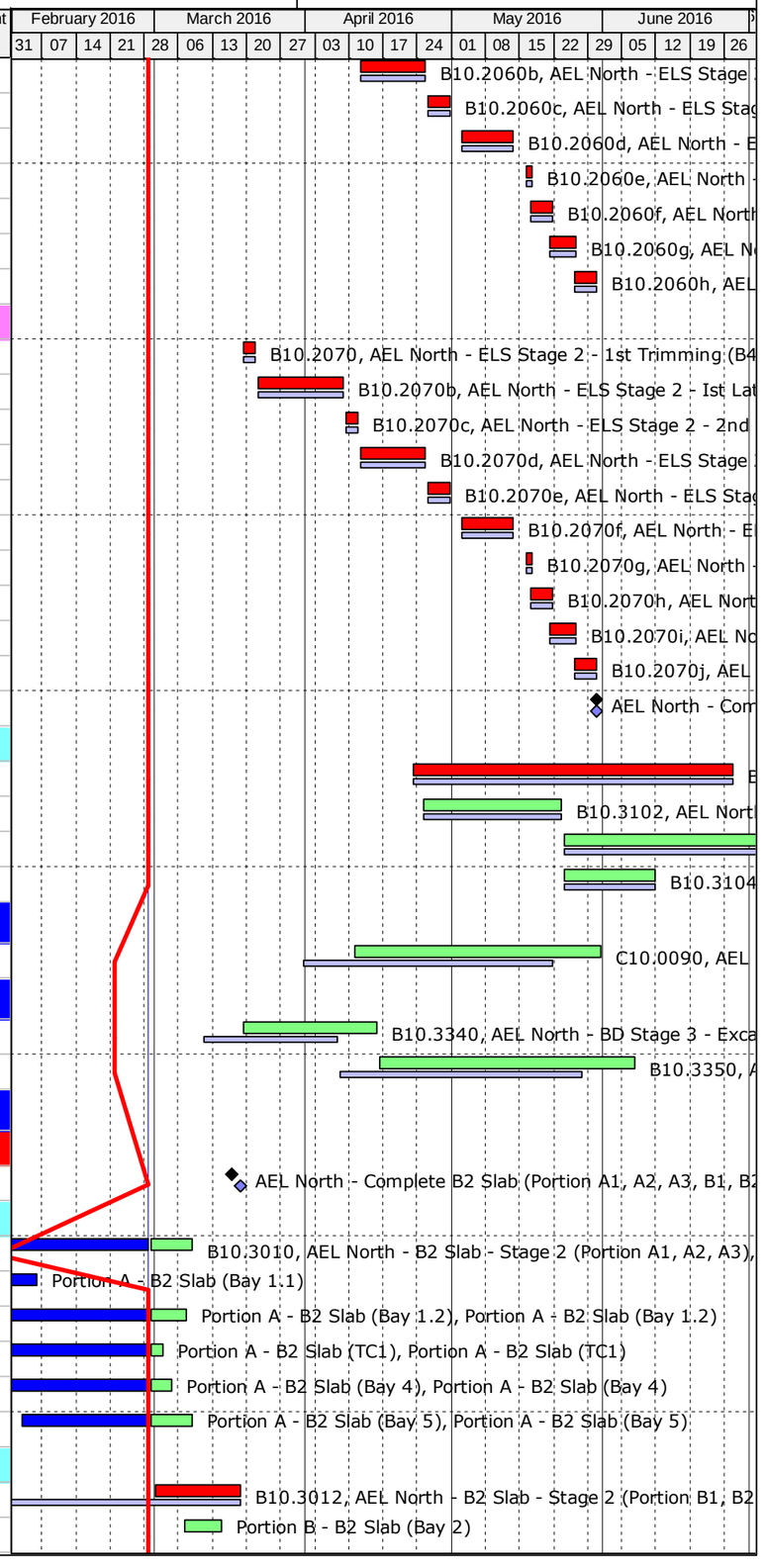


(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
B10.3000.060	CPC43 (Type 03)	43			28-Dec-15 A	02-Mar-16	95%		14
B10.3000.070	CPC44 (Type 07)	43			28-Dec-15 A	02-Mar-16	95%		14
B10.3000.080	CPC50 (Type 02)	37			05-Jan-16 A	02-Mar-16	95%		14
Pilecap (A2)									
B10.3000.100	PC 05 (Type 03)	29			04-Jan-16 A	12-Feb-16 A	100%		
B10.3000.120	PC 07 (Type 04)	27			04-Jan-16 A	03-Feb-16 A	100%		
Pilecap (A3)									
B10.3000.130	PC 21 (Type 02)	12			22-Jan-16 A	03-Feb-16 A	100%		
B10.3000.140	PC 33 (Type 02)	4			31-Jan-16 A	03-Feb-16 A	100%		
B10.3000.150	PC 44 (Type 02)	6			01-Feb-16 A	17-Feb-16 A	100%		
B10.3000.160	PC 18 (Type 01)	6			01-Feb-16 A	17-Feb-16 A	100%		
B10.3000.170	PC 19 (Type 02)	6			01-Feb-16 A	11-Feb-16 A	100%		
B10.3000.180	PC 20 (Type 07)	4			31-Jan-16 A	05-Feb-16 A	100%		
B10.3000.190	PC 31 (Type 01)	6			01-Feb-16 A	17-Feb-16 A	100%		
B10.3000.200	PC 32 (Type 01)	6			01-Feb-16 A	17-Feb-16 A	100%		
Pilecap (B1)									
B10.3020.210	PC 72 (Type S1)	21			19-Jan-16 A	24-Feb-16 A	100%		
Pilecap (B2)									
B10.3020.220	PC 62 (Type 02)	14			21-Jan-16 A	16-Feb-16 A	100%		
B10.3020.230	PC 54 (Type 02)	17			21-Jan-16 A	06-Feb-16 A	100%		
B10.3020.240	PC 60 (Type 02)	13			21-Jan-16 A	12-Feb-16 A	100%		
B10.3020.250	PC 61 (Type 02)	14			21-Jan-16 A	12-Feb-16 A	100%		
B10.3020.260	PC 53 (Type 02)	16			22-Jan-16 A	06-Feb-16 A	100%		
B10.3020.270	PC 59 (Type 02)	10			25-Jan-16 A	25-Feb-16 A	100%		
B10.3020.280	PC 50 (Type 02)	12			25-Jan-16 A	25-Feb-16 A	100%		
B10.3020.290	PC 51 (Type 02)	12			25-Jan-16 A	18-Feb-16 A	100%		
B10.3020.300	PC 52 (Type 02)	14			25-Jan-16 A	06-Feb-16 A	100%		
Pilecap (B3)									
B10.3020.310	PC 39 (Type 02)	6			01-Feb-16 A	20-Feb-16 A	100%		
B10.3020.320	PC 40 (Type 07)	6			01-Feb-16 A	13-Feb-16 A	100%		
B10.3020.330	PC 41 (Type 02)	6			01-Feb-16 A	06-Feb-16 A	100%		
B10.3020.340	PC 42 (Type 07)	6			01-Feb-16 A	15-Feb-16 A	100%		
B10.3020.350	PC 43 (Type 02)	6			01-Feb-16 A	15-Feb-16 A	100%		
B10.3020.360	PC 15 (Type 01)	6			01-Feb-16 A	18-Feb-16 A	100%		
B10.3020.370	PC 16 (Type 06)	6			01-Feb-16 A	22-Feb-16 A	100%		
B10.3020.380	PC 17 (Type 01)	6			01-Feb-16 A	17-Feb-16 A	100%		
B10.3020.390	PC 30 (Type S5)	6			01-Feb-16 A	22-Feb-16 A	100%		
Stage 3 - Pilecap (A4,A5,B4,B5)									
Pilecap (A4 & A5)									
B10.2050	AEL North - ELS Stage 2 - 1st Trimming (A4 / A5)	2	19-Mar-16	21-Mar-16	19-Mar-16*	21-Mar-16	0%	0	0
B10.2060	AEL North - ELS Stage 2 - Ist Lateral Support (A4 / A5)	12	22-Mar-16	08-Apr-16	22-Mar-16	08-Apr-16	0%	0	0
B10.2060a	AEL North - ELS Stage 2 - 2nd trimming (A4 / A5)	2	09-Apr-16	11-Apr-16	09-Apr-16	11-Apr-16	0%	0	0

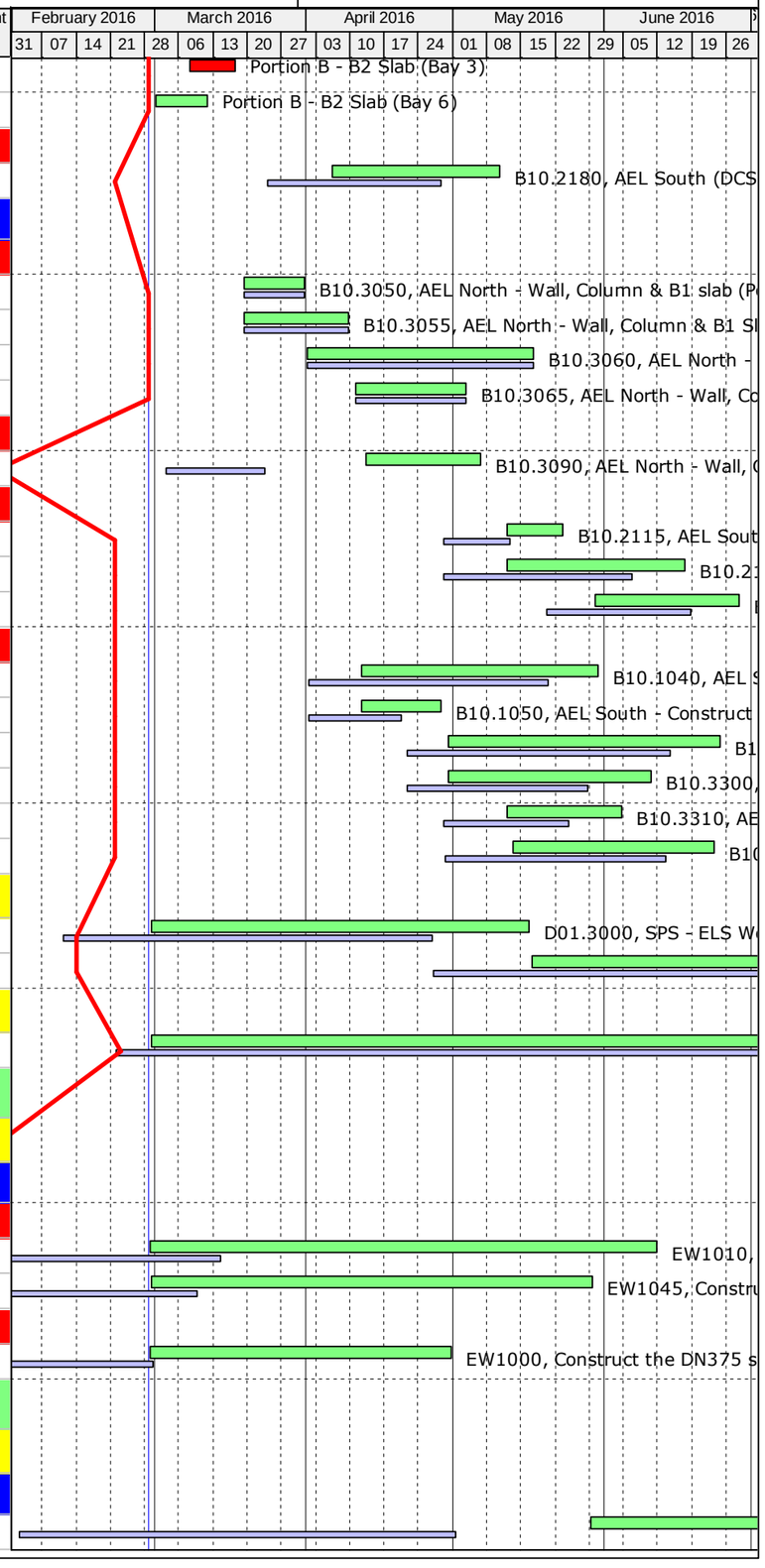
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
B10.2060b	AEL North - ELS Stage 2 - 2nd Lateral Support (A4 / A5)	12	12-Apr-16	25-Apr-16	12-Apr-16	25-Apr-16	0%	0	0
B10.2060c	AEL North - ELS Stage 2 - Excavate Pilecap Formation (A4)	5	26-Apr-16	30-Apr-16	26-Apr-16	30-Apr-16	0%	0	0
B10.2060d	AEL North - ELS Stage 3 - Construct Pilecap & B2 Slab (A4	10	03-May-16	13-May-16	03-May-16	13-May-16	0%	0	0
B10.2060e	AEL North - ELS Stage 3 - 3rd Trimming (A5)	2	16-May-16	17-May-16	16-May-16	17-May-16	0%	0	0
B10.2060f	AEL North - ELS Stage 3 - 3rd Lateral Support (A5)	5	17-May-16	21-May-16	17-May-16	21-May-16	0%	0	0
B10.2060g	AEL North - ELS Stage 3 - Deep Excavation for Pilecap (A5	5	21-May-16	26-May-16	21-May-16	26-May-16	0%	0	0
B10.2060h	AEL North - ELS Stage 4 - Construct Pilecap & B2 Slab (A5	4	26-May-16	30-May-16	26-May-16	30-May-16	0%	0	0
Pilecap (B4 & B5)									
B10.2070	AEL North - ELS Stage 2 - 1st Trimming (B4 / B5)	2	19-Mar-16	21-Mar-16	19-Mar-16*	21-Mar-16	0%	0	0
B10.2070b	AEL North - ELS Stage 2 - Ist Lateral Support (B4 / B5)	12	22-Mar-16	08-Apr-16	22-Mar-16	08-Apr-16	0%	0	0
B10.2070c	AEL North - ELS Stage 2 - 2nd trimming (B4 / B5)	2	09-Apr-16	11-Apr-16	09-Apr-16	11-Apr-16	0%	0	0
B10.2070d	AEL North - ELS Stage 2 - 2nd Lateral Support (B4 / B5)	12	12-Apr-16	25-Apr-16	12-Apr-16	25-Apr-16	0%	0	0
B10.2070e	AEL North - ELS Stage 2 - Excavate Pilecap Formation (B4)	5	26-Apr-16	30-Apr-16	26-Apr-16	30-Apr-16	0%	0	0
B10.2070f	AEL North - ELS Stage 3 - Construct Pilecap & B2 Slab (B4	10	03-May-16	13-May-16	03-May-16	13-May-16	0%	0	0
B10.2070g	AEL North - ELS Stage 3 - 3rd Trimming (B5)	2	16-May-16	17-May-16	16-May-16	17-May-16	0%	0	0
B10.2070h	AEL North - ELS Stage 3 - 3rd Lateral Support (B5)	5	17-May-16	21-May-16	17-May-16	21-May-16	0%	0	0
B10.2070i	AEL North - ELS Stage 3 - Deep Excavation for Pilecap (B5	5	21-May-16	26-May-16	21-May-16	26-May-16	0%	0	0
B10.2070j	AEL North - ELS Stage 4 - Construct Pilecap & B2 Slab (B5	4	26-May-16	30-May-16	26-May-16	30-May-16	0%	0	0
B10.2070k	AEL North - Complete Pilecap & B2 Slab (A5 & B5)	0		30-May-16		30-May-16	0%	0	0
Stage 4, 5, 6 & 7 (A6, A7, A8, A9, A10, A11, A12 & B6, B7, B8, B9)									
B10.3101	AEL North - BD Stage 4 - Pile Cap Construction (Portion A6	43	23-Apr-16	27-Jun-16	23-Apr-16	27-Jun-16	0%	0	0
B10.3102	AEL North - BD Stage 5 - Underground Drainage (Portion A	19	25-Apr-16	23-May-16	25-Apr-16	23-May-16	0%	0	5
B10.3103	AEL North - BD Stage 6 - Pile Cap Construction (Portion B8	30	24-May-16	09-Jul-16	24-May-16	09-Jul-16	0%	0	22
B10.3104	AEL North - BD Stage 6 - Underground Drainage (Portion	12	24-May-16	11-Jun-16	24-May-16	11-Jun-16	0%	0	22
RC Structures for Trusses									
C10.0090	AEL North along AEL Tunnel Zone - East Pile Caps Core Wa	37	31-Mar-16	21-May-16	11-Apr-16	31-May-16	0%	-7	4
RC Structure for Water Tank									
B10.3340	AEL North - BD Stage 3 - Excavation for Water Tank Part 1	20	11-Mar-16	07-Apr-16	19-Mar-16*	15-Apr-16	0%	-7	11
B10.3350	AEL North - BD Stage 3 - Construct Water Tank Part 1 (W	36	08-Apr-16	27-May-16	16-Apr-16	07-Jun-16	0%	-7	11
B2/F Slabs									
Stage 1: Portion A1, A2, A3 & B1, B2, B3									
B10.3015	AEL North - Complete B2 Slab (Portion A1, A2, A3, B1, B2	0		18-Mar-16		17-Mar-16 A	100%	2	
Portion A1, A2 & A3									
B10.3010	AEL North - B2 Slab - Stage 2 (Portion A1, A2, A3)	33	17-Dec-15	28-Jan-16	25-Jan-16 A	08-Mar-16	80%	-31	4
B10.3010.10	Portion A - B2 Slab (Bay 1.1)	10			25-Jan-16 A	06-Feb-16 A	100%		
B10.3010.20	Portion A - B2 Slab (Bay 1.2)	10			25-Jan-16 A	07-Mar-16	90%		10
B10.3010.30	Portion A - B2 Slab (TC1)	10			25-Jan-16 A	02-Mar-16	70%		14
B10.3010.40	Portion A - B2 Slab (Bay 4)	10			25-Jan-16 A	04-Mar-16	75%		12
B10.3010.50	Portion A - B2 Slab (Bay 5)	10			03-Feb-16 A	08-Mar-16	80%		9
Portion B1, B2 & B3									
B10.3012	AEL North - B2 Slab - Stage 2 (Portion B1, B2, B3)	16	30-Dec-15	18-Mar-16	01-Mar-16	18-Mar-16	0%	0	0
B10.3012.10	Portion B - B2 Slab (Bay 2)	7			07-Mar-16	14-Mar-16	0%		4



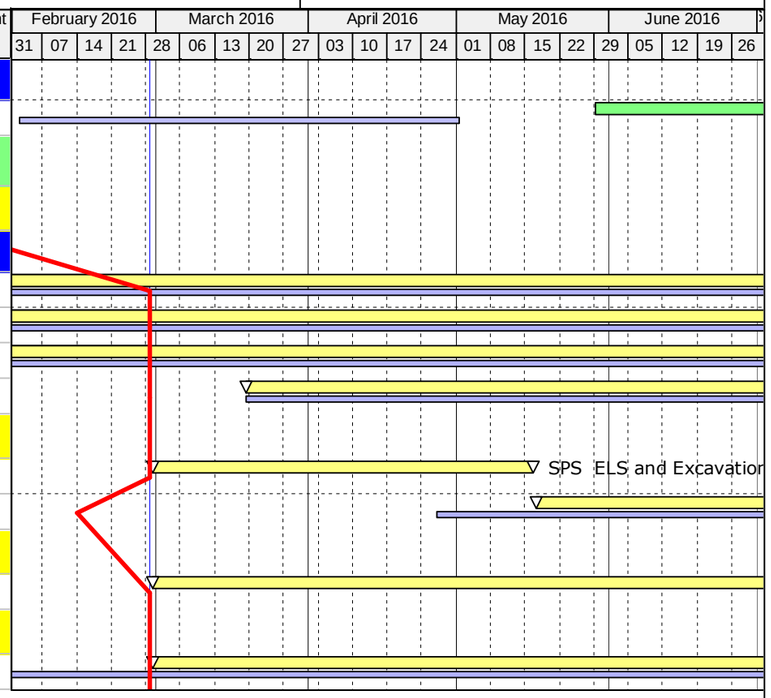
(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
B10.3012.20	Portion B - B2 Slab (Bay 3)	9			08-Mar-16	17-Mar-16	0%		1
B10.3012.30	Portion B - B2 Slab (Bay 6)	10			01-Mar-16	11-Mar-16	0%		6
AEL South									
B10.2180	AEL South (DCS) - Construct Basement B2 Slab at -2.15m	27	24-Mar-16	28-Apr-16	06-Apr-16	10-May-16	0%	-7	15
B1/F Slab - Walls, Columns & B1/F Slabs									
AEL North - B1/F Slab other than AEL Zone									
B10.3050	AEL North - Wall, Column & B1 slab (Portion B1A)	8	19-Mar-16	31-Mar-16	19-Mar-16*	31-Mar-16	0%	0	152
B10.3055	AEL North - Wall, Column & B1 Slab (Portion B1B)	15	19-Mar-16	09-Apr-16	19-Mar-16*	09-Apr-16	0%	0	89
B10.3060	AEL North - Wall, Column & B1 Slab (Portion B1C)	34	01-Apr-16	17-May-16	01-Apr-16	17-May-16	0%	0	704
B10.3065	AEL North - Wall, Column & B1 Slab (Portion B1D)	19	11-Apr-16	03-May-16	11-Apr-16	03-May-16	0%	0	89
AEL North - B1/F Slab for Truss T1, T2 & T5 Erection									
B10.3090	AEL North - Wall, Column & B1 Slab (Portion A4 & A5)	18	03-Mar-16	23-Mar-16	13-Apr-16	06-May-16	0%	-31	217
AEL South - B1/F Slab for DCS to facilitateTruss Erection									
B10.2115	AEL South (DCS) - Remove 2nd Layer Struts at 0.0mPD o	8	29-Apr-16	12-May-16	12-May-16	23-May-16	0%	-7	15
B10.2125	AEL South (DCS) - Construct Walls & Columns to B1 Slab	24	29-Apr-16	06-Jun-16	12-May-16	17-Jun-16	0%	-7	57
B10.2130	AEL South (DCS) - B1 Floor Slab at ~+6.05mPD	20	20-May-16	18-Jun-16	30-May-16	28-Jun-16	0%	-7	57
AEL South - RC Structures Prior to Area M14 H/O									
B10.1040	AEL South - Construct Core Wall on PC96 from B1F to 1M,	35	01-Apr-16	20-May-16	12-Apr-16	30-May-16	0%	-7	5
B10.1050	AEL South - Construct B1 Slab for Basement Road Wall	15	01-Apr-16	20-Apr-16	12-Apr-16	28-Apr-16	0%	-7	15
B10.3290	AEL South - Construct Basement Road Wall between PC 9	35	21-Apr-16	14-Jun-16	30-Apr-16	24-Jun-16	0%	-7	7
B10.3300	AEL South - Construct External Wall between PC 96 & PC1	25	21-Apr-16	28-May-16	30-Apr-16	10-Jun-16	0%	-7	7
B10.3310	AEL South - Construct Basement Road Wall between PC 1	16	29-Apr-16	24-May-16	12-May-16	04-Jun-16	0%	-7	15
B10.3315	AEL South - Construct Walls, Column & Staircases to G/F l	27	29-Apr-16	13-Jun-16	13-May-16	23-Jun-16	0%	-7	7
SPS Structures (include Excavation)									
D01.3000	SPS - ELS Works (Provisional)	61	11-Feb-16	26-Apr-16	29-Feb-16	16-May-16	0%	-15	36
D01.3010	SPS - Construct Basement Structure	100	27-Apr-16	26-Aug-16	17-May-16	13-Sep-16	0%	-15	36
ICP Structures (include Excavation)									
A3980	ICP - ELS works (Provisional)	110	22-Feb-16	26-Jul-16	29-Feb-16	05-Aug-16	0%	-6	7
External Works									
M+ External Works									
Utitlities									
Drainage									
EW1010	Construct the DN375 and DN600 strom drains within the	75	10-Dec-15	14-Mar-16	29-Feb-16	11-Jun-16	0%	-62	143
EW1045	Construct M+ manholes S1.1, S3.2, S3.3, S3.4 (terminal)	91	10-Dec-15	09-Mar-16	29-Feb-16	29-May-16	0%	-81	894
Sewage									
EW1000	Construct the DN375 sewer drain within Austin Road Wes	50	29-Dec-15	29-Feb-16	29-Feb-16	30-Apr-16	0%	-49	713
Test & Commissioning, Statutory Inspections & OP									
M+									
WSD (FS Pipeworks)									
SH4200	FS - Submit Form WW046 (Part 1 & 2) to WSD (Subject t	90	02-Feb-16	01-May-16	29-May-16	26-Aug-16	0%	-117	335



(3MRP) 3-Months Rolling Programme Status at 29 Feb 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
WSD (Plumbing)									
SH4260	Plumbing - Submit Form WW046 (Part 1 & 2) to WSD (Su	90	02-Feb-16	01-May-16	29-May-16	26-Aug-16	0%	-117	335
Summary Programme									
M+									
Foundation & Basement									
SM1010	Excavation & ELS Works	397	02-Nov-15	07-Mar-17	02-Nov-15 A	07-Mar-17	49%	0	4
SM1020	Pilecaps & U/G Drainage Construction	149	09-Nov-15	30-Aug-16	04-Jan-16 A	30-Aug-16	30%	0	73
SM1030	B2 Slab & RC Structure to B1/F	417	17-Dec-15	24-Jun-17	25-Jan-16 A	24-Jun-17	20%	0	15
SM1040	B1 Slab & RC Structure to LG/F	271	19-Mar-16	18-Feb-17	19-Mar-16	18-Feb-17	0%	0	3
SPS									
SM1465	SPS ELS and Excavation	61			29-Feb-16	16-May-16	0%		36
SM1470	SPS RC Structure	100	27-Apr-16	26-Aug-16	17-May-16	13-Sep-16	0%	-15	36
ICP									
SM1415	ICP ELS and Excavation	128			29-Feb-16	05-Aug-16	0%		8
External Works									
SM1400	M+ External Works	504	10-Dec-15	10-Nov-17	29-Feb-16	11-Nov-17	0%	0	222

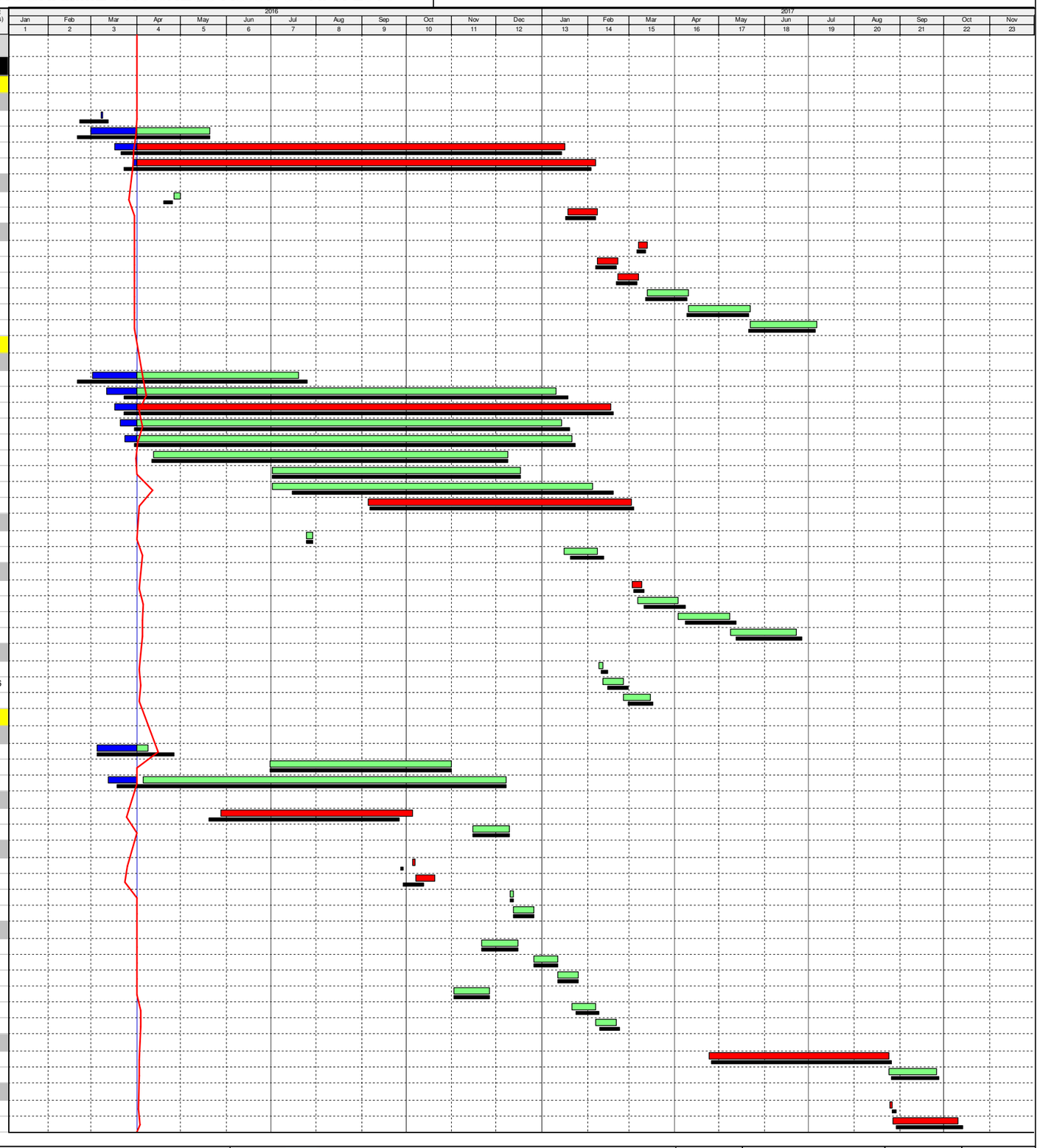


Lyric Theatre Complex

CONTRACT NO: CC/2015/3A/014

SUMMARY PROGRAMME PROGRESS AS OF 01-APR-2016

Activity ID	Activity Name	Durn. (Days)	Start Date	End Date	Float (Days)
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	08-Mar-16 A	09-Mar-16 A	
LT.0088	Predrilling; 57 nos.	71	01-Mar-16 A	20-May-16	70
LT.0089	Pre-bored H-Pile Construction; Rig 1, 131 nos	243	17-Mar-16 A	16-Jan-17	1
LT.2225	Pre-bored H-Pile Construction; Rig 2, 134 nos	255	30-Mar-16 A	06-Feb-17	0
Option Piling Works in Area 3 - Pre-bored H-Pile					
LT.0091	Option Area 3 Prebored H-Pile Predrilling; 1 no.	5	26-Apr-16	30-Apr-16	85
LT.0092	Option Area 3 Pre-bored H-Pile Construction; Rig 1, 3 nos.	14	18-Jan-17	07-Feb-17	-1
BA14 and Testing					
LT.0094	Submission of BA14	6	07-Mar-17	13-Mar-17	-1
LT.0095	CA's Selection of Proof Drilling Locations	14	07-Feb-17	21-Feb-17	-1
LT.0096	Proof Drilling	14	21-Feb-17	07-Mar-17	-1
LT.0097	BD's Selection of Test Piles	28	13-Mar-17	10-Apr-17	37
LT.0098	Load Testing and Submit Reports	42	10-Apr-17	22-May-17	38
LT.0099	BD's Acknowledgement	45	22-May-17	06-Jul-17	37
Bored Pile					
Bored Pile Construction					
LT.0102	Predrilling; 147 nos.	125	02-Mar-16 A	19-Jul-16	43
LT.0103	Bored Pile Construction; RCD Rig 1, 24 nos.	244	12-Mar-16 A	10-Jan-17	31
LT.1895	Bored Pile Construction; RCD Rig 2, 27 nos.	268	17-Mar-16 A	16-Feb-17	2
LT.1905	Bored Pile Construction; RCD Rig 3, 25 nos.	243	21-Mar-16 A	14-Jan-17	10
LT.1915	Bored Pile Construction; RCD Rig 4, 26 nos.	245	24-Mar-16 A	21-Jan-17	21
LT.1925	Bored Pile Construction; RCD Rig 5, 16 nos.	200	12-Apr-16	08-Dec-16	56
LT.1935	Bored Pile Construction; RCD Rig 6, 14 nos.	142	02-Jul-16	17-Dec-16	48
LT.1945	Bored Pile Construction; RCD Rig 7, 15 nos.	178	02-Jul-16	04-Feb-17	12
LT.2215	Sonic Logging and Interface Coring Test	145	05-Sep-16	02-Mar-17	2
Option Piling Works in Area 3 - Bored Pile					
LT.0105	Option Area 3 Bored Pile Predrilling; 1 nos.	4	25-Jul-16	29-Jul-16	38
LT.0106	Option Area 3 Bored Pile Construction; RCD Rig 3, 1 no.	17	16-Jan-17	07-Feb-17	10
BA14 and Testing					
LT.0108	Submission of BA14	6	03-Mar-17	09-Mar-17	2
LT.0109	BD's Selection of Test Piles	28	07-Mar-17	03-Apr-17	5
LT.0110	Concrete Coring Test and Submit Reports	24	03-Apr-17	08-May-17	4
LT.0111	BD's Acknowledgement	45	09-May-17	22-Jun-17	51
BA14 and Testing at Area 6 if Option is Exercised					
LT.0113	Submission of BA14	3	08-Feb-17	11-Feb-17	24
LT.0114	BD's Selection of Test Piles	14	11-Feb-17	25-Feb-17	106
LT.0115	Concrete Coring Test and Submit Reports	15	25-Feb-17	15-Mar-17	83
Excavation and Lateral Support					
Pipe Pile					
LT.0120	Pre-grouting Works at Seawall Area; Portion L01, M15, M16 and M39	40	05-Mar-16 A	08-Apr-16	34
LT.0121	Pre-grouting Works at Portion M14, L05, L07 & L03	101	30-Jun-16	31-Oct-16	39
LT.0122	Pipe Pile Construction and Grout Curtain; 641 nos.	215	13-Mar-16 A	07-Dec-16	39
Sheet Piles					
LT.0124	Sheet Piles Installation in Area 6 and Portion M15, M16, M38 & M39; 647 nos., 5,554 m2	107	28-May-16	05-Oct-16	-6
LT.0125	Sheet Piles Installation in Portion M41 & L03; 72 nos., 858 m2	22	15-Nov-16	09-Dec-16	37
BA14					
LT.0126	Submission of BA14 for Stage 1 ELS Sheet Piling Works at Area 6	2	05-Oct-16	06-Oct-16	-6
LT.0127	BD's Acknowledgement	14	07-Oct-16	20-Oct-16	-8
LT.0128	Submission of BA14 for Stage 1 ELS Sheet Piling Works at Area 1 to 5	2	10-Dec-16	12-Dec-16	37
LT.0129	BD's Acknowledgement	14	12-Dec-16	26-Dec-16	46
Pumping Test					
LT.0131	Install Area 1 to Area 5 Pumping Test Instrumentation & Wells (14 PW + 28 OW) and Submission of Initial Reading	22	21-Nov-16	15-Dec-16	43
LT.0132	Carry Out Pumping Test in Area 1 to Area 5 and Submission to BD	16	26-Dec-16	11-Jan-17	46
LT.0133	Obtain BD's Acknowledgement of Area 1 to 5 Pumping Test Results	14	11-Jan-17	25-Jan-17	46
LT.0134	Install Area 6 Pumping Test Instrumentation & Wells (3 PW + 6 OW) and Submission of Initial Readings	21	02-Nov-16	26-Nov-16	60
LT.0135	Carry Out Pumping Test in Area 6 and submission to BD	16	21-Jan-17	06-Feb-17	21
LT.0136	Obtain BD's Acknowledgement of Area 6 Pumping Test Results	14	06-Feb-17	20-Feb-17	21
Option Stage 2 ELS and Excavation Works at Area 6					
LT.0138	Bulk Excavation and Installation of Struts	101	24-Apr-17	24-Aug-17	3
LT.0139	Trim Pile Head and Clearance	28	24-Aug-17	25-Sep-17	14
BA14 for Option Stage 2 ELS and Excavation Works at Area 6					
LT.0141	Submission of BA14 for Stage 2 ELS and Excavation Works at Area 6	2	25-Aug-17	26-Aug-17	2
LT.0142	BD's Acknowledgement	45	27-Aug-17	10-Oct-17	3



Project Baseline Bar
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
SUMAMRY PROGRAMME BASED ON
CONSTRUCTION WORKS PROGRAMME - REV. "0"

Gammon

Date	Revision	Checked	Approved
01-Apr-16	For Information	R.L.	A.W.

Appendix 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 (µg/m3)	Limit Level (µg/m3)
AM1	273.7	500
AM2	274.2	500

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

Monitoring Station	Action Level (µg/m3)	Limit Level (µg/m3)
AM1	143.6	260
AM2	151.1	260

Noise

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

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

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

Appendix 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	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.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	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.	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.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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	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	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	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.

Event	Action			
	ET	IEC	WKCDA	Contractor
	actions and keep IEC, EPD and WKCDA informed of the results.	remedial measures.		
2. Exceedance for two or more consecutive samples	1. Notify IEC, WKCDA, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and WKCDA to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and WKCDA informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst WKCDA, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the WKCDA accordingly; 5. Monitor the implementation of remedial measures.	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.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the WKCDA until the exceedance is abated.

Construction Noise

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

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

	Action			
Event	**ET Leader**	**IEC**	**WKCDA**	**Contractor**
Action Level	1. Notify WKCDA, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, WKCDA and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the WKCDA accordingly; 3. Advise the WKCDA on the effectiveness of the proposed remedial measures.	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.	1. Submit noise mitigation proposals to IEC and WKCDA; 2. Implement noise mitigation proposals.
Limit Level	1. Inform IEC, WKCDA, 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 WKCDA on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and WKCDA informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst WKCDA, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the WKCDA accordingly.	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.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and WKCDA 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 WKCDA 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

	Action			
Event	**ET Leader**	**IEC**	**WKCDA**	**Contractor**
Design Check	1. Design check to make sure the design complies with all the proposed mitigation measures in the EIA report; 2. Prepare and submit report.	1. Check report submitted by ET; 2. Recommend remedial design if necessary.	1. Undertake remedial design if necessary.	-
Non-conformity on one occasion	1. Identify source of non-conformity; 2. Report to IEC and WKCDA; 3. Discuss remedial actions with IEC, WKCDA and Contractor; 4. Monitor remedial actions until rectification has been completed.	1. Check and verify source of non-conformity; 2. Discuss remedial actions with ET and Contractor; 3. Advise WKCDA on effectiveness of proposed remedial actions; 4. Check implementation of remedial actions.	1. Notify Contractor; 2. Ensure remedial actions are properly implemented.	1. Amend working method as necessary; 2. Rectify damage and undertake necessary replacement and remedial actions.
Repeated non-conformity	1. Identify source of non-conformity; 2. Report to IEC and WKCDA; 3. Increase monitoring frequency; 4. Discuss remedial actions with IEC, WKCDA and Contractor; 5. Monitor remedial actions until rectification has been completed; 6. If non-conformity rectified, reduce monitoring frequency back to normal.	1. Check and verify source of non-conformity; 2. Check Contractor's working method; 3. Discuss remedial actions with ET and Contractor; 4. Advise WKCDA on effectiveness of proposed remedial actions; 5. Supervise implementation of remedial actions.	1. Notify Contractor; 2. Ensure remedial actions are properly implemented.	1. Amend working method as necessary; 2. Rectify damage and undertake necessary replacement and remedial actions.

Appendix E. Monitoring Schedule

MARCH 2016

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

APRIL 2016

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

Appendix F. Calibration Certifications

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM1(ICC)
Calibrated by	:	K.T.Ho
Date	:	16/02/2016

Sampler

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

Calibration Orfice 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)	:	1024
Ta(K)	:	286

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.8	3.525	1.701	56	57.47
2	13 holes	9.6	3.180	1.536	50	51.31
3	10 holes	6.8	2.676	1.295	42	43.10
4	7 holes	4.6	2.201	1.069	35	35.92
5	5 holes	2.9	1.748	0.852	28	28.74

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

Sampler Calibration Relationship

Slope(m):33.634 Intercept(b): -0.098 Correlation Coefficient(r): 0.9996

Checked by: _____ Date: 25/02/2016
Magnum Fan

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM2 (Harbourside)
Calibrated by	:	K.T.Ho
Date	:	16/02/2016

Sampler

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

Calibration Orfice 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)	:	1024
Ta(K)	:	286

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.4	3.614	1.743	62	63.63
2	13 holes	9.4	3.147	1.520	54	55.42
3	10 holes	7.2	2.754	1.332	48	49.26
4	7 holes	4.4	2.153	1.046	38	39.00
5	5 holes	2.6	1.655	0.808	28	28.74

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

Sampler Calibration Relationship

Slope(m):36.825 Intercept(b):-0.286 Correlation Coefficient(r): 0.9990

Checked by: _____ Date: 25/02/2016
Magnum Fan

SIBATA

SIBATA SCIENTIFIC TECHNOLOGY LTD.
1-1-62, Nakane, Soka, Saitama, 340-0005 Japan
TEL : 048-933-1582 FAX : 048-933-1591

CALIBRATION CERTIFICATE

Date: May 28, 2015

Equipment Name	:	Digital Dust Indicator, Model LD-3B
Code No.	:	080000-42
Quantity	:	1 unit
Serial No.	:	2Z6240
Sensitivity	:	0.001 mg/m3
Sensitivity Adjustment	:	570CPM
Scale Setting	:	May 25, 2015

We hereby certify that the avobe mentioned instrment has been calibrated satisfactory.

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Kentaro Togo
Overseas Sales Division

TEST CERTIFICATE

Report No. 15-0798

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.

SIBATA SCIENTIFIC TECHNOLOGY LTD.

DATE 26/May /2015

APPROVE DY	VERIFIED BY	ISSUED BY

PRODUCT NAME	:	Digital Dust Indicator
MODEL NUMBER	:	LD−3B
SERIAL NUMBER	:	2Z6240
CALIBRATION DATE	:	25−May−2015

Testing Category	Judging Standard	Judgment			
Function Test	Switch, Display, Wiring will nomally function	OK			
Sensitivity Calibration	Count is ±2% accurate to the master by the standard calibration particle	Reading of Master	Reading of this Instrument	Correction	Inspection chart
		813 CPM	814 CPM	+0.1 %	Reference Value(S)
Dust Concentration Measuring	Count is ±10% accurate to the master under the 3 different concentration.	2079 CPM	1998 CPM	−3.9 %	570 CPM
		1020 CPM	994 CPM	−2.5 %	
		535 CPM	524 CPM	−2.1 %	Test atmosphere
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			Temperature: 23 ℃ / Humidity: 45 %
Synthetic Judgment		Good			

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	2Z6240
Equipment Ref:	Nil
Job Order	HK1520162

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	13 May 2015

Equipment Verification Results:

Testing Date: 22 & 23 June 2015

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr18min	12:45 ~ 15:03	27.9	1003.2	0.010	1171	8.5
2hr25min	15:08 ~ 17:33	27.9	1003.2	0.023	2290	15.7
2hr43min	9:45 ~ 12:28	27.3	1003.9	0.014	1908	11.7

Sensitivity Adjustment Scale Setting (Before Calibration) 569 (CPM)

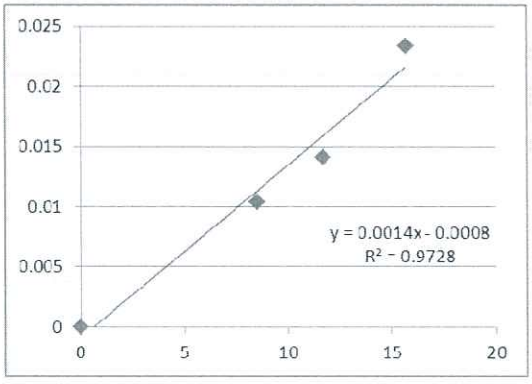
Sensitivity Adjustment Scale Setting (After Calibration) 574 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0014

Correlation Coefficient 0.9863

Date of Issue 24 June 2015



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0014 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Donald Kwok Signature : _____ Date : 24 June 2015

QC Reviewer : Ben Tam Signature : _____ Date : 24 June 2015

TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2015 Rootsmeter S/N 0438320 Ta (K) - 292
Operator Tisch Orifice I.D. - 2454 Pa (mm) - 756.92

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	1.4460	3.2	2.00
2	NA	NA	1.00	1.0300	6.4	4.00
3	NA	NA	1.00	0.9180	7.9	5.00
4	NA	NA	1.00	0.8780	8.7	5.50
5	NA	NA	1.00	0.7240	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0121	0.6999	1.4258		0.9958	0.6886	0.8784
1.0078	0.9785	2.0163		0.9916	0.9627	1.2422
1.0057	1.0955	2.2543		0.9895	1.0779	1.3888
1.0047	1.1443	2.3644		0.9885	1.1258	1.4566
0.9994	1.3805	2.8515		0.9833	1.3582	1.7568
Qstd slope (m) =		2.09532		Qa slope (m) =		1.31205
intercept (b) =		-0.03812		intercept (b) =		-0.02349
coefficient (r) =		0.99994		coefficient (r) =		0.99994
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. : C153242
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-1330) Date of Receipt / 收件日期 : 10 June 2015

Description / 儀器名稱	:	Sound Level Meter
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-31
Serial No. / 編號	:	00320533
Supplied By / 委託者	:	Envirotech Services Co. Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 14 June 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within 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 : K C Lee, Project Engineer

Certified By 核證 : H C Chan, Engineer

Date of Issue 簽發日期 : 16 June 2015

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 – 校正及檢測實驗所
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. : C153242
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 using the internal standard (After Adjustment) was performed before the test form 6.1.1.2 to 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C150014
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.4	± 0.7

6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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

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 – 校正及檢測實驗所
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. : C153242
證書編號

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)		
30 - 120	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.1

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		
20 -110	L_A	A	Fast	106.00	Continuous	106.0	Ref.
	$L_A$max				200 ms	105.0	-1.0 ± 1.0
	L_A		Slow		Continuous	106.0	Ref.
	$L_A$max				500 ms	102.0	-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.		
30 - 120	L_A	A	Fast	94.00	31.5 Hz	54.3	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5; -3.0)
					12.5 kHz	90.1	-4.3 (+3.0; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C153242
證書編號

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.		
30 - 120	L_C	C	Fast	94.00	31.5 Hz	90.6	-3.0 ± 1.5
					63 Hz	93.0	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.4	-0.8 ± 1.0
					8 kHz	91.1	-3.0 (+1.5; -3.0)
					12.5 kHz	88.2	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
20 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	90.0	± 0.5
			60 sec.			$1/10^3$		80	80.0	± 1.0
			5 min.			$1/10^4$		70	70.0	± 1.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 320128

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

- Uncertainties of Applied Value :

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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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. : C153930
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-1508) Date of Receipt / 收件日期 : 6 July 2015

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.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 July 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within 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
Assistant Technical Officer

Certified By 核證 : K C Lee
Project Engineer

Date of Issue 簽發日期 : 22 July 2015

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 校正及檢測實驗所
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. : C153930
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 :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C150014
CL281	Multifunction Acoustic Calibrator	DC130171

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	93.6	± 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	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

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	93.6	Ref.
			Slow			93.6	± 0.1

Certificate of Calibration
校正證書

Certificate No. : C153930
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	105.0	-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	53.9	-39.4 ± 1.5
					63 Hz	67.2	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.0
					250 Hz	84.8	-8.6 ± 1.0
					500 Hz	90.3	-3.2 ± 1.0
					1 kHz	93.6	Ref.
					2 kHz	94.9	+1.2 ± 1.0
					4 kHz	94.7	+1.0 ± 1.0
					8 kHz	92.5	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.3	-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	90.5	-3.0 ± 1.5
					63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.0
					250 Hz	93.6	0.0 ± 1.0
					500 Hz	93.6	0.0 ± 1.0
					1 kHz	93.6	Ref.
					2 kHz	93.5	-0.2 ± 1.0
					4 kHz	92.8	-0.8 ± 1.0
					8 kHz	90.6	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.3	-6.2 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C153930
證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
50 - 110	LAeq	A	10 sec.	4	1	1/10	110	100	100.1	± 0.5
						$1/10^2$		90	90.1	± 0.5
			60 sec.			$1/10^3$		80	79.6	± 1.0
			5 min.			$1/10^4$		70	69.8	± 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.

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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. : C153241
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC15-1330) Date of Receipt / 收件日期 : 10 June 2015

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.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 14 June 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within 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 : K C Lee
Project Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 16 June 2015

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 校正及檢測實驗所
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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. : C153241
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

4. Test procedure : MA100N.

5. 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	0.986	1 kHz ± 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.

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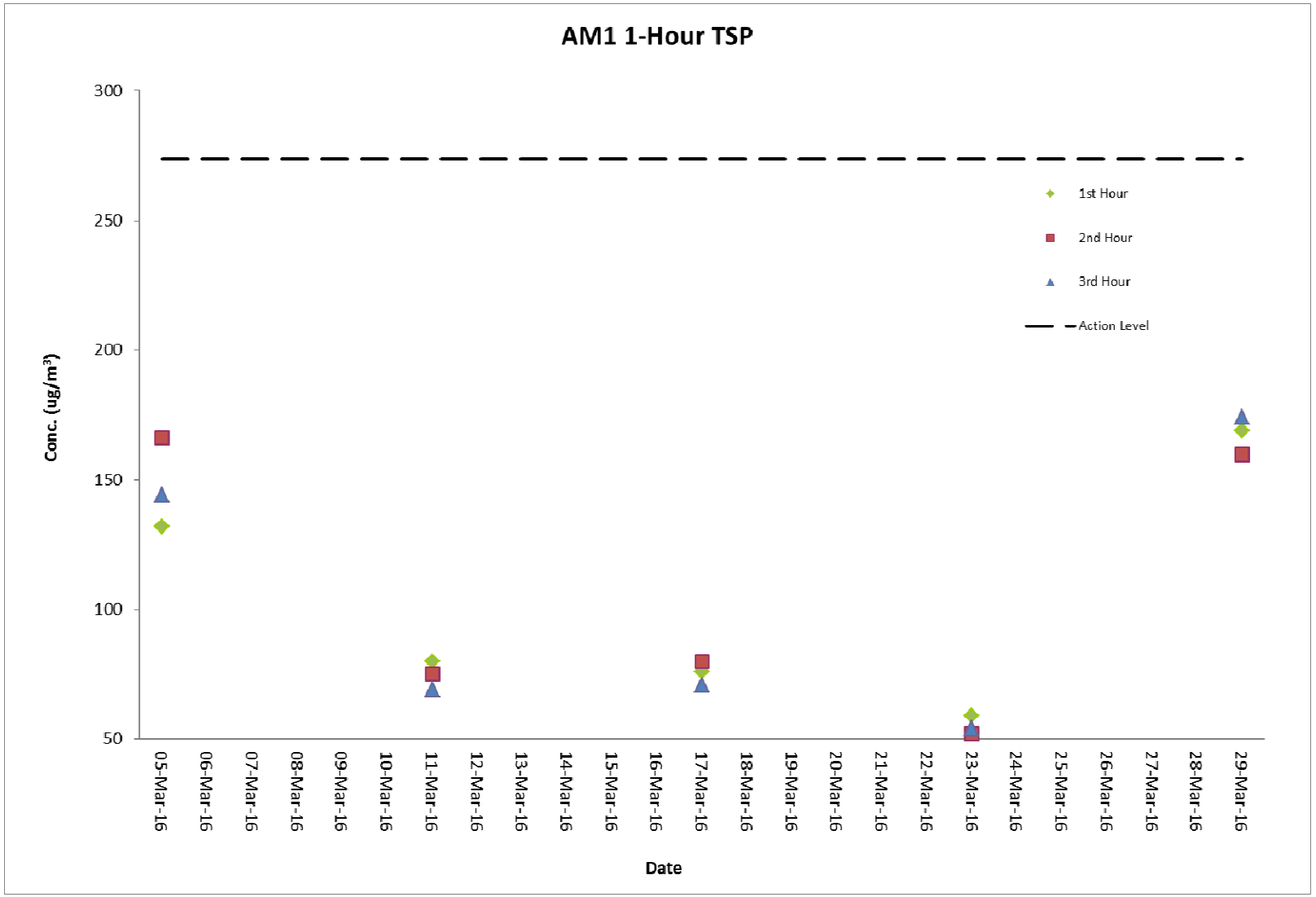
Appendix G. Graphical Plots of the Monitoring Results

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

Date	Weather Condition	Time	Conc. (μg/m^3)			Action Level (μg/m^3)	Limit Level (μg/m^3)	Min	Max
			1st Hour	2nd Hour	3rd Hour				
05-Mar-16	Cloudy	8:00 - 11:00	132	166	144	273.7	500	52	174
11-Mar-16	Cloudy	10:50 - 15:00	80	75	69	273.7	500		
17-Mar-16	Cloudy	10:45 - 16:00	76	80	71	273.7	500		
23-Mar-16	Cloudy	10:48 - 15:00	59	52	54	273.7	500		
29-Mar-16	Fine	10:40 - 15:00	169	160	174	273.7	500		

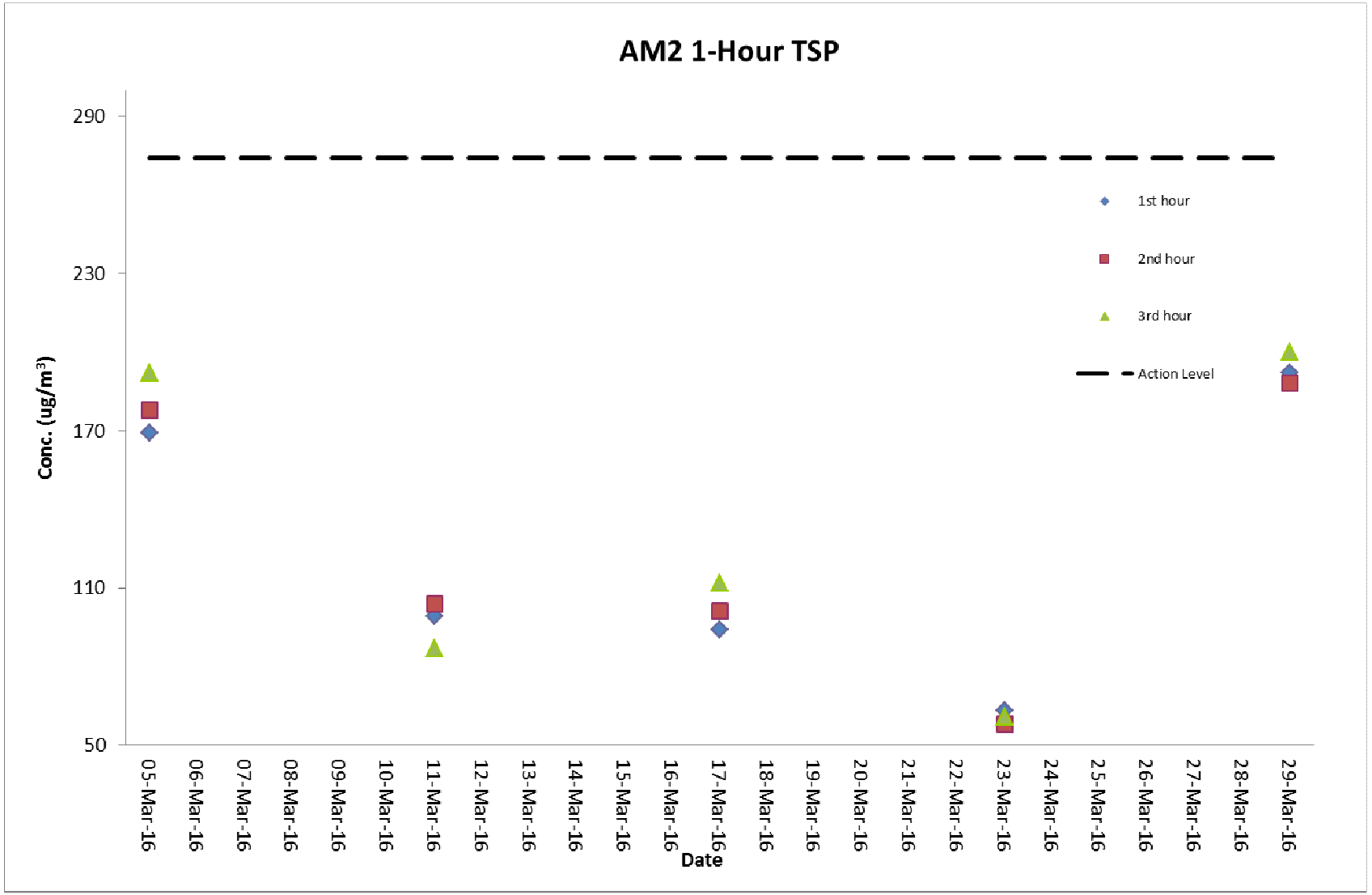
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



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

Date	Weather Condition	Time	Conc. (μg/m^3)			Action Level (μg/m^3)	Limit Level (μg/m^3)	Min	Max
			1st Hour	2nd Hour	3rd Hour				
05-Mar-16	Cloudy	8:10 - 11:10	169	178	192	274.2	500	58	200
11-Mar-16	Cloudy	11:00 - 15:10	99	104	87	274.2	500		
17-Mar-16	Cloudy	10:53 - 16:10	94	101	112	274.2	500		
23-Mar-16	Cloudy	11:00 - 15:10	63	58	61	274.2	500		
29-Mar-16	Fine	10:52 - 16:10	192	188	200	274.2	500		

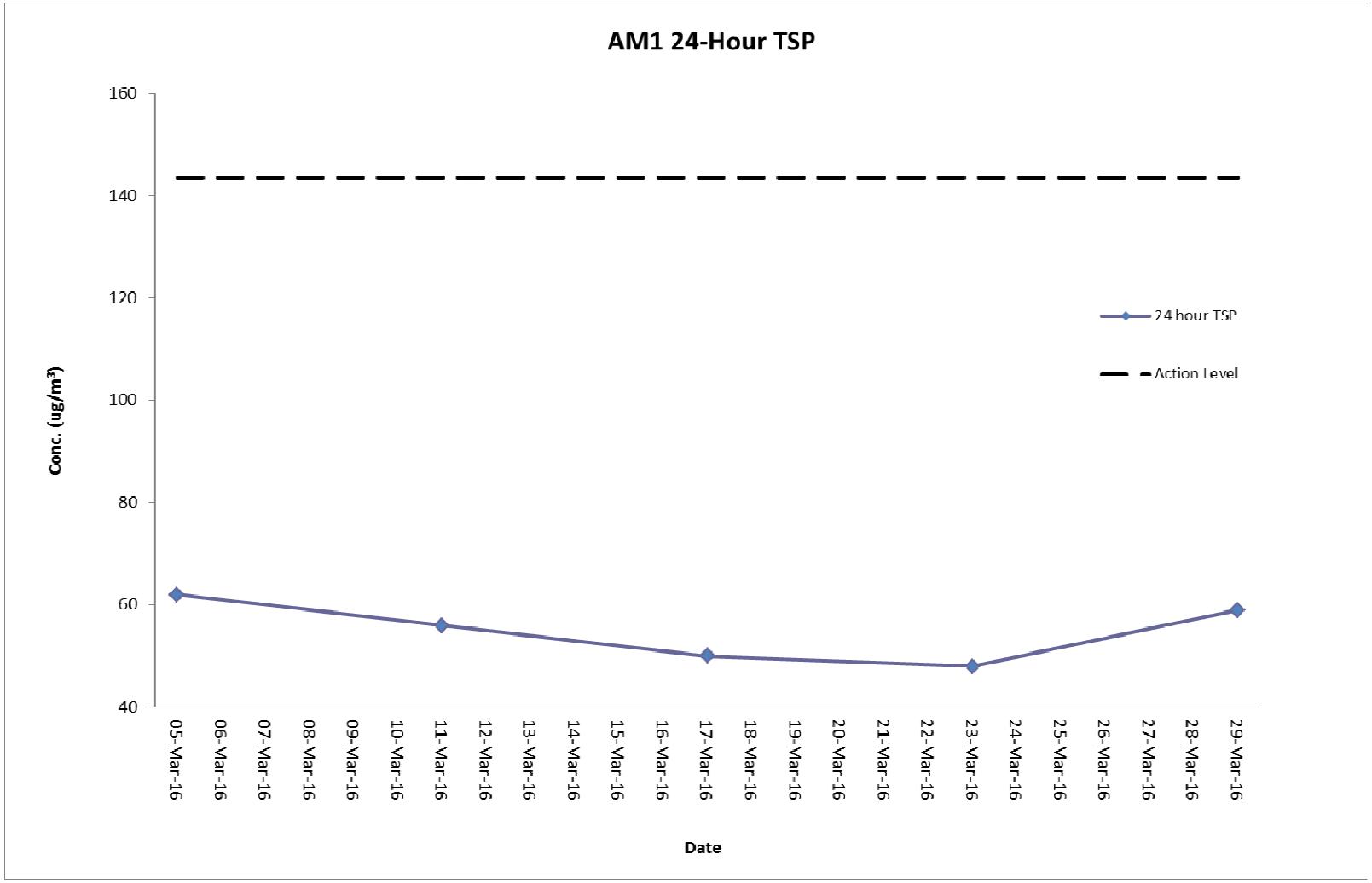
Graphical Presentation of Air Quality Monitoring Result at Station AM2 (1-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
05-Mar-16	08:02	06-Mar-16	08:02	2.7767	2.888	19176.38	19200.38	24	1.25	1.25	1.25	62	Cloudy	143.6	260
11-Mar-16	10:48	12-Mar-16	10:48	2.7895	2.8911	19200.38	19224.38	24	1.25	1.25	1.25	56	Cloudy	143.6	260
17-Mar-16	10:43	18-Mar-16	10:43	2.8007	2.8911	19224.38	19248.38	24	1.25	1.25	1.25	50	Cloudy	143.6	260
23-Mar-16	10:50	24-Mar-16	10:50	2.7907	2.8779	19248.38	19272.38	24	1.25	1.25	1.25	48	Cloudy	143.6	260
29-Mar-16	10:42	30-Mar-16	10:42	2.7842	2.8911	19272.38	19296.38	24	1.25	1.25	1.25	59	Fine	143.6	260

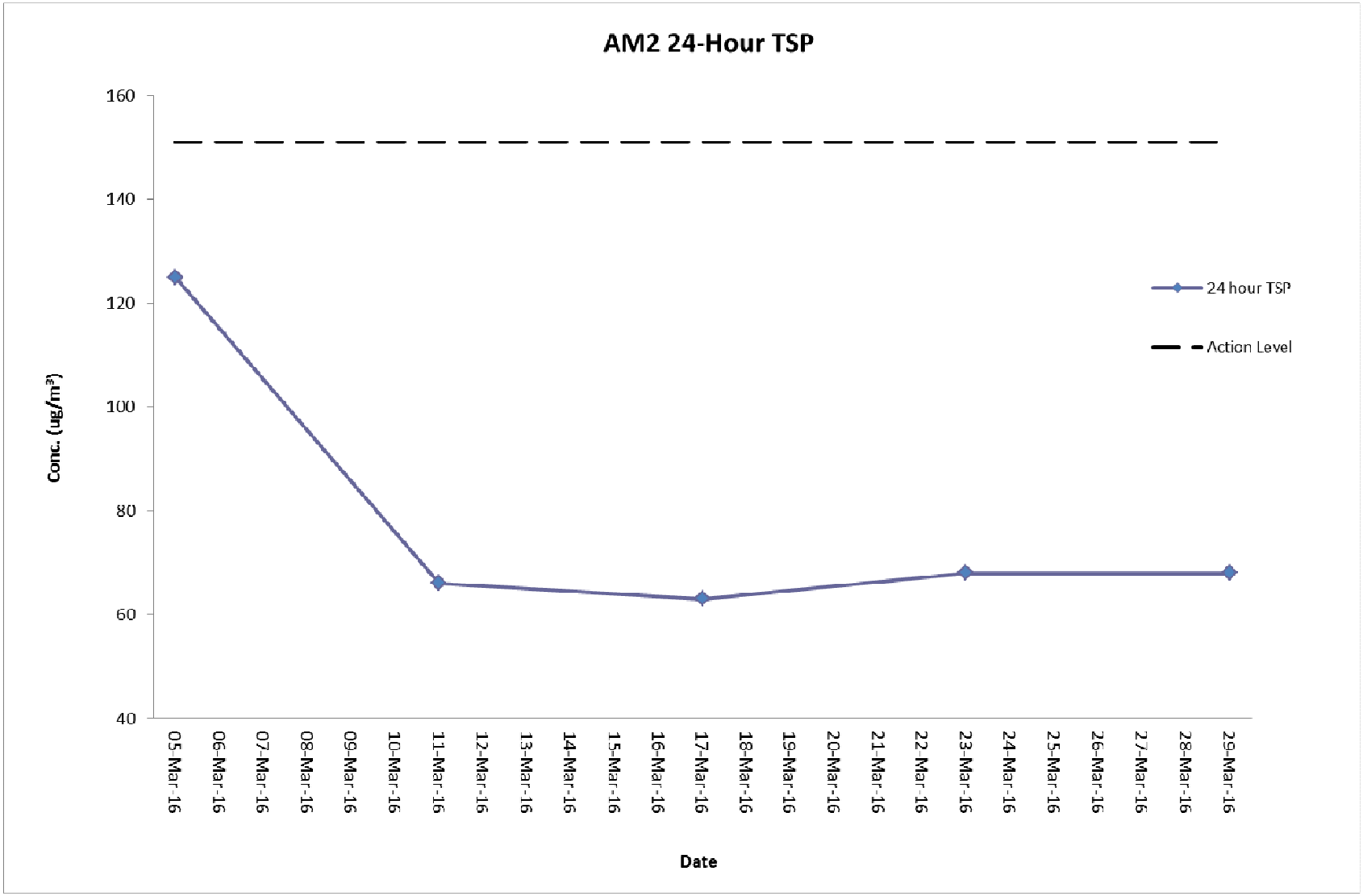
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
05-Mar-16	08:13	06-Mar-16	08:13	2.789	3.0048	14879.59	14903.59	24	1.2	1.2	1.2	125	Cloudy	151.1	260
11-Mar-16	11:03	12-Mar-16	11:03	2.7865	2.9009	14903.59	14927.59	24	1.2	1.2	1.2	66	Cloudy	151.1	260
17-Mar-16	10:56	18-Mar-16	10:56	2.822	2.93	14927.59	14951.59	24	1.2	1.2	1.2	63	Cloudy	151.1	260
23-Mar-16	11:05	24-Mar-16	11:05	2.7742	2.8911	14951.59	14975.59	24	1.2	1.2	1.2	68	Cloudy	151.1	260
29-Mar-16	10:55	30-Mar-16	10:55	2.7829	2.9009	14975.59	14999.59	24	1.2	1.2	1.2	68	Fine	151.1	260

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



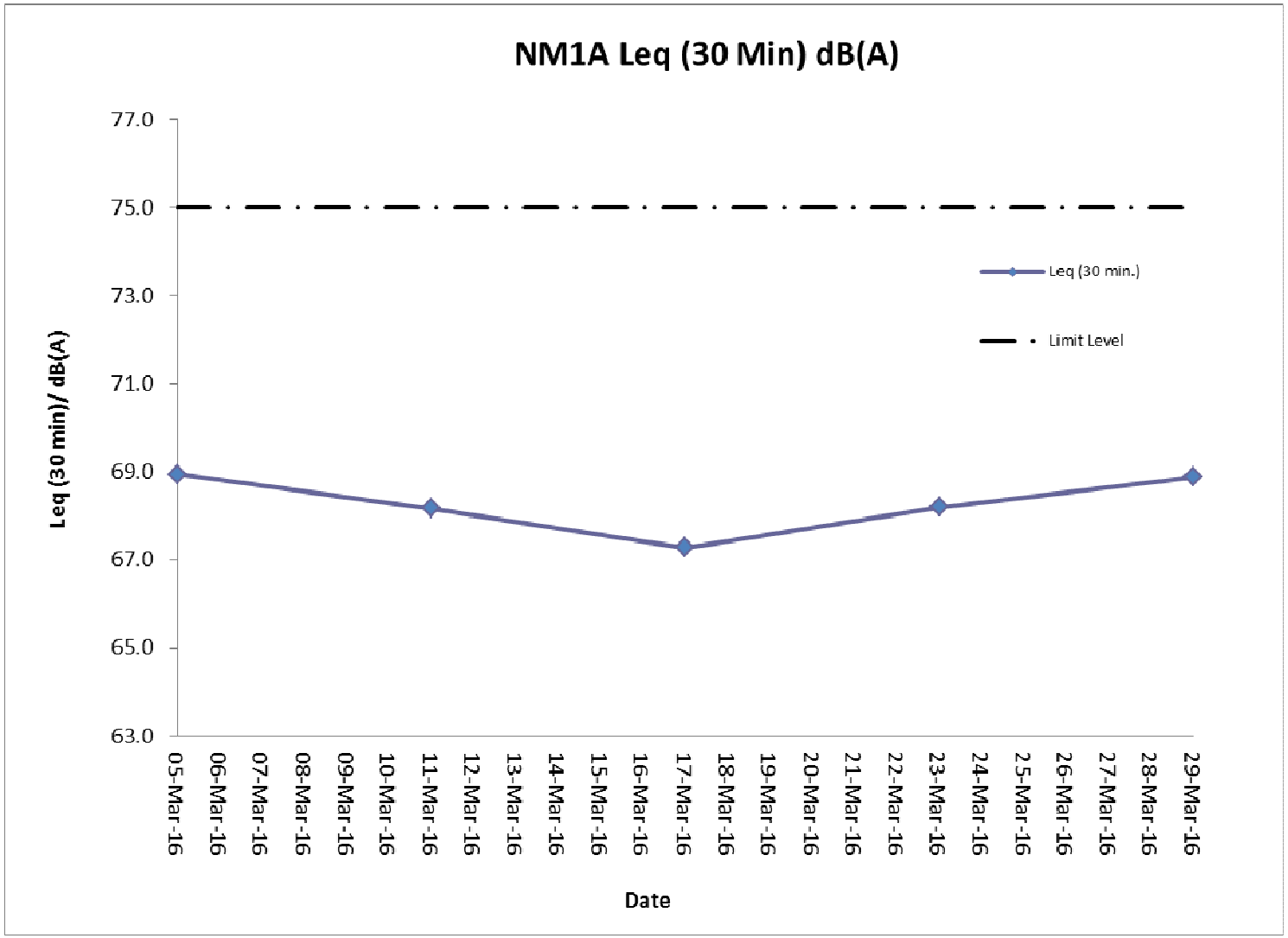
Noise Monitoring Result at Station NM1A

Date	Time	Measured L_{10} dB(A)	Measured L_{90} dB(A)	L_{eq} (30 min.) dB(A)
05-Mar-16	09:17	68.2	62.3	69.0
05-Mar-16	09:22	68.5	62.3	
05-Mar-16	09:27	67.6	62.2	
05-Mar-16	09:32	68.6	63.6	
05-Mar-16	09:37	68.8	62.7	
05-Mar-16	09:42	68.7	63.5	
11-Mar-16	15:50	68.0	63.4	68.2
11-Mar-16	15:55	67.9	62.4	
11-Mar-16	16:00	67.5	62.0	
11-Mar-16	16:05	67.9	62.7	
11-Mar-16	16:10	67.7	63.5	
11-Mar-16	16:15	67.4	62.9	
17-Mar-16	13:00	64.9	60.9	67.3
17-Mar-16	13:05	66.2	61.1	
17-Mar-16	13:10	66.8	62.4	
17-Mar-16	13:15	66.7	61.9	
17-Mar-16	13:20	66.9	62.4	
17-Mar-16	13:25	67.2	63.9	
23-Mar-16	15:50	66.9	62.5	68.2
23-Mar-16	15:55	67.7	63.3	
23-Mar-16	16:00	65.8	61.9	
23-Mar-16	16:05	66.9	62.9	
23-Mar-16	16:10	67.9	63.4	
23-Mar-16	16:15	67.9	63.8	
29-Mar-16	14:45	66.0	62.7	68.9
29-Mar-16	14:50	67.9	63.4	
29-Mar-16	14:55	67.9	63.4	
29-Mar-16	15:00	68.0	63.9	
29-Mar-16	15:05	69.2	64.0	
29-Mar-16	15:10	68.0	63.8	

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

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

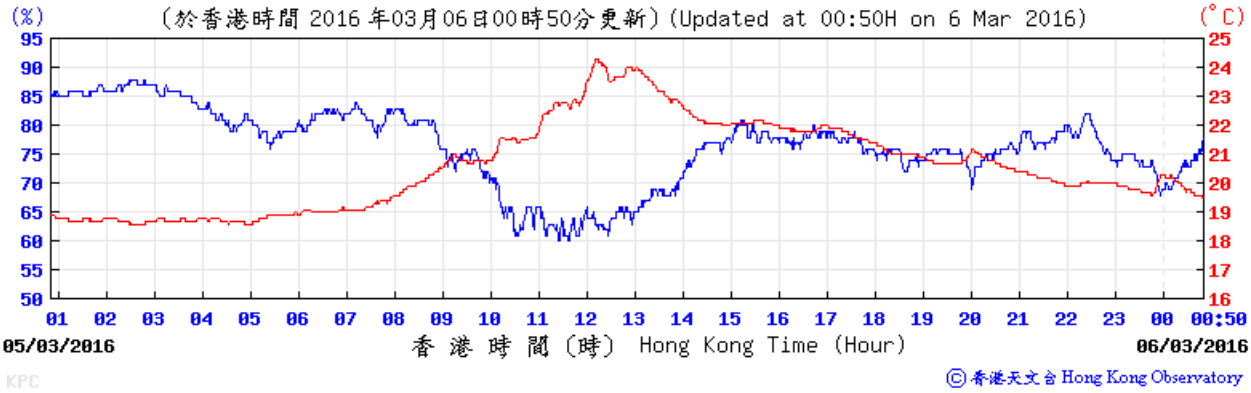
Graphical Presentation Noise Monitoring Result at Station NM1A



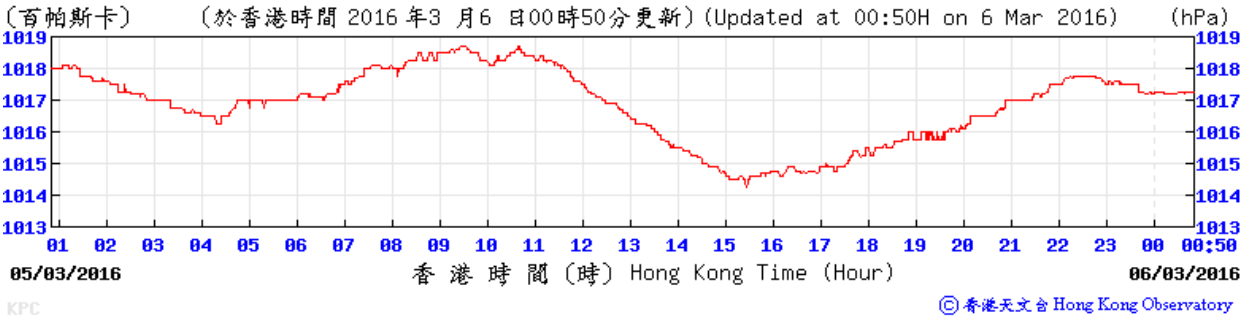
Appendix H. Meteorological Data Extracted from Hong Kong Observatory

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

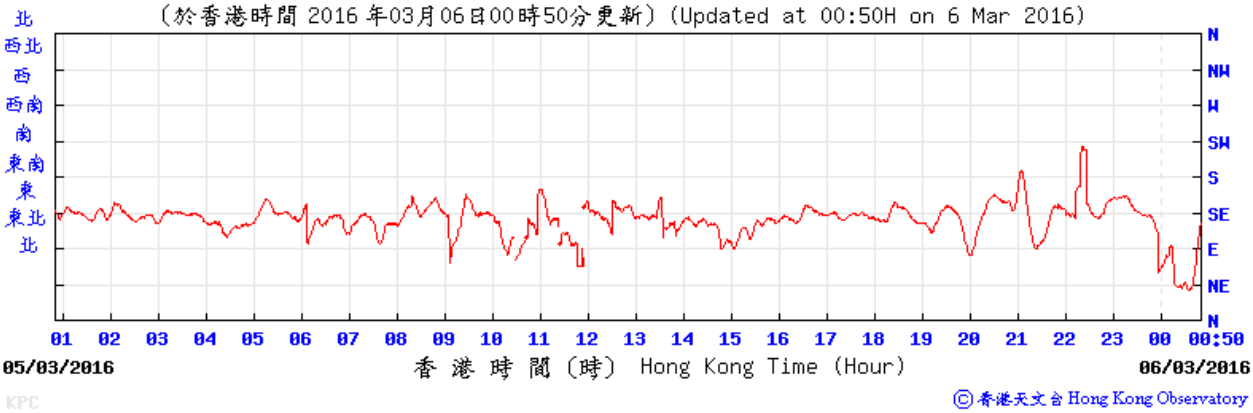
Temperature/Humidity:



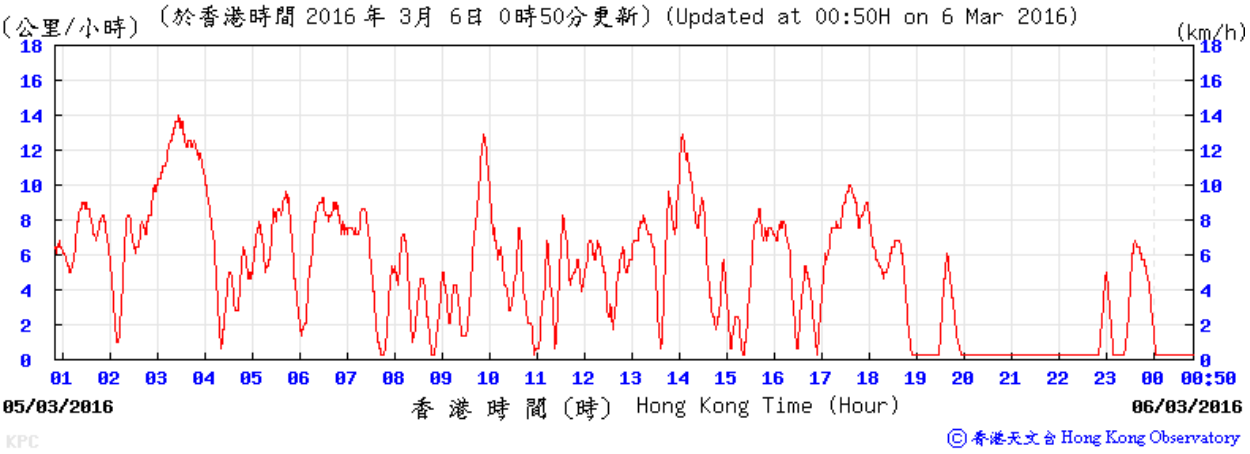
Pressure:



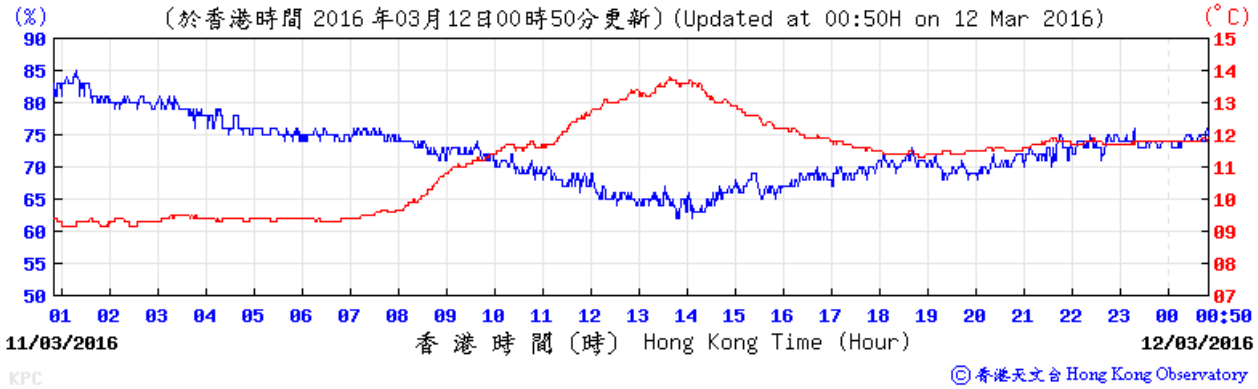
Wind Direction:



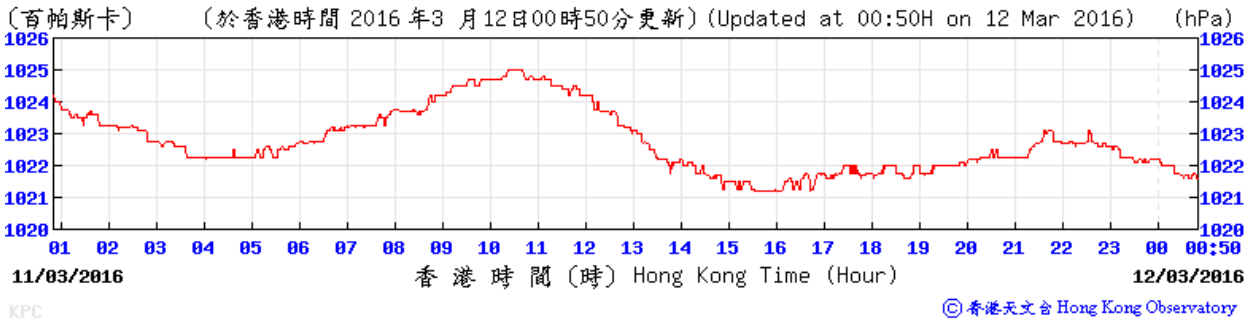
Wind Speed:



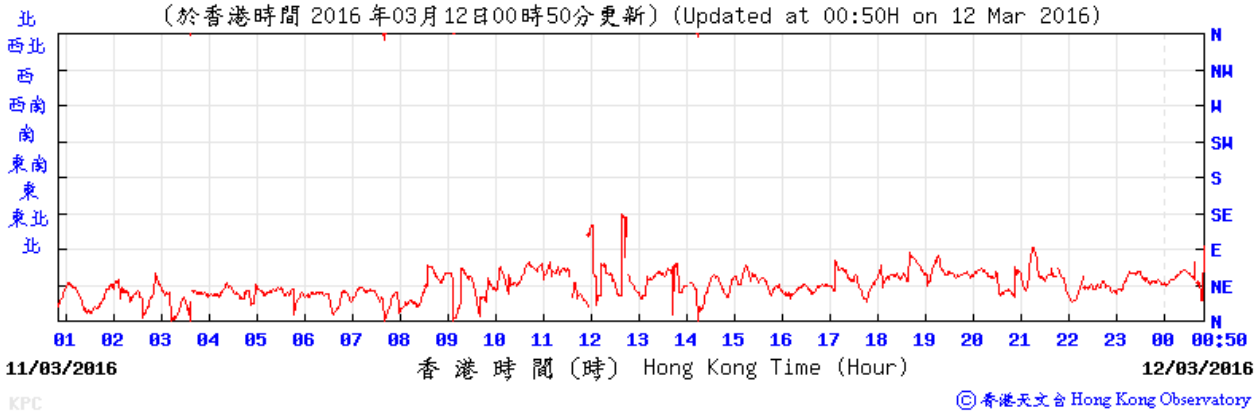
Temperature/Humidity:



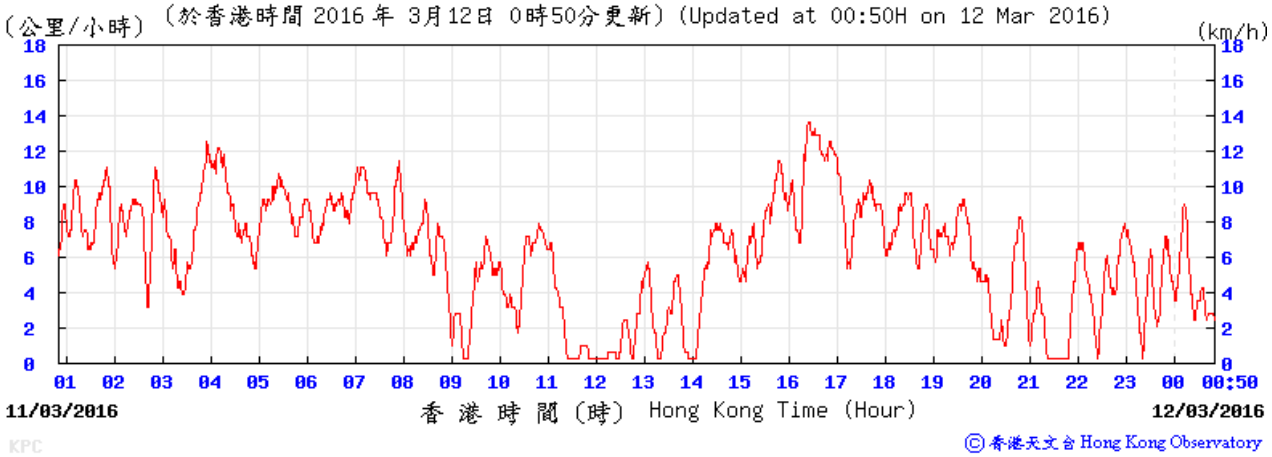
Pressure:



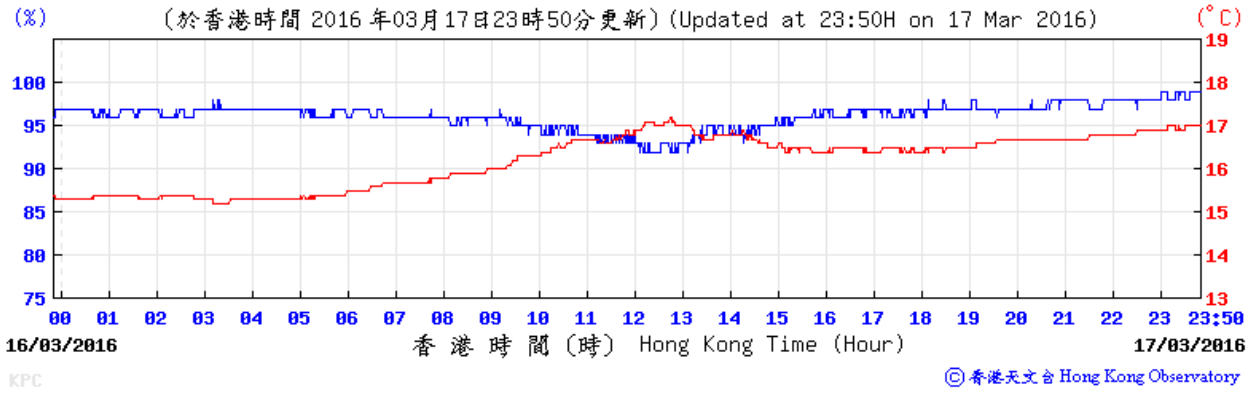
Wind Direction:



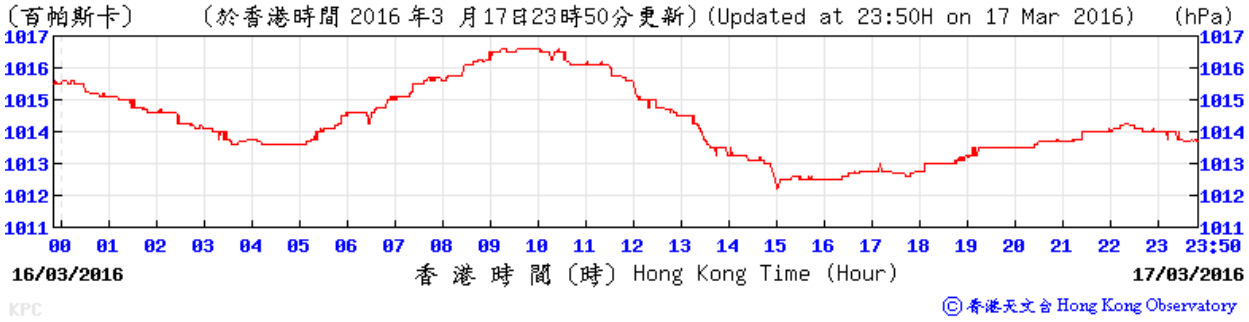
Wind Speed:



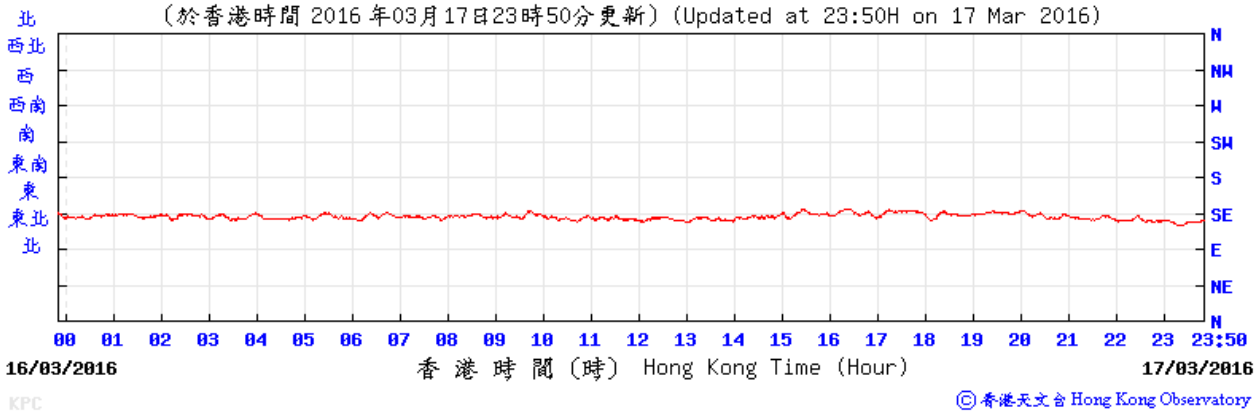
Temperature/Humidity:



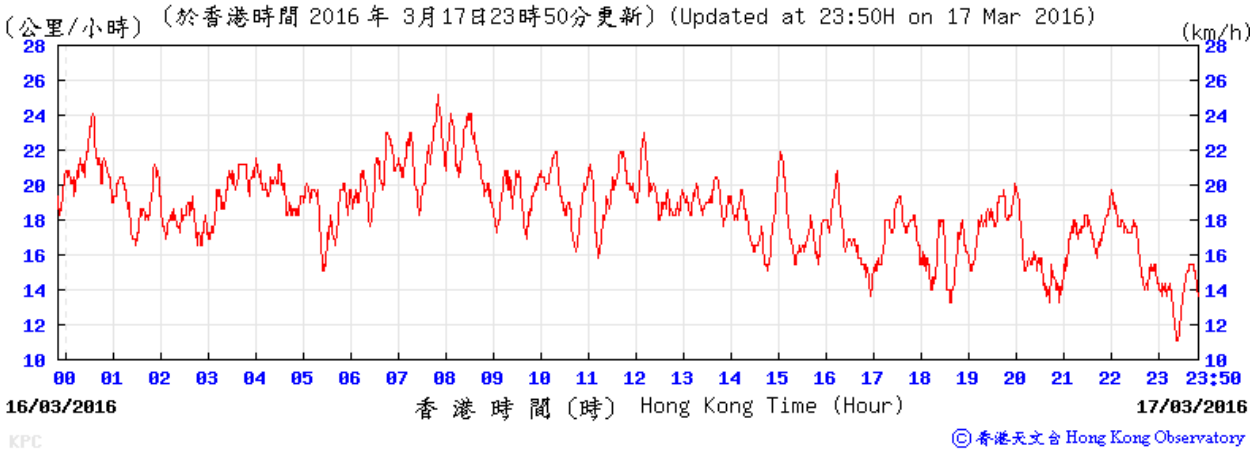
Pressure:



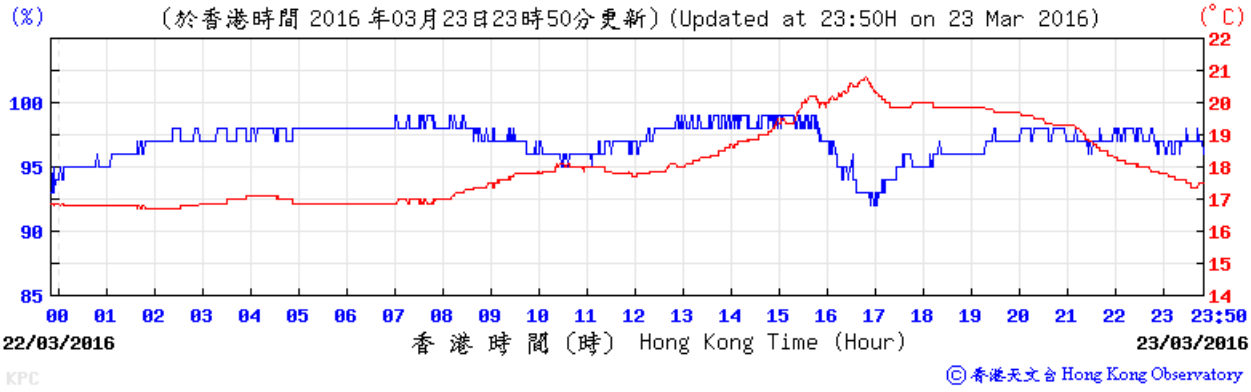
Wind Direction:



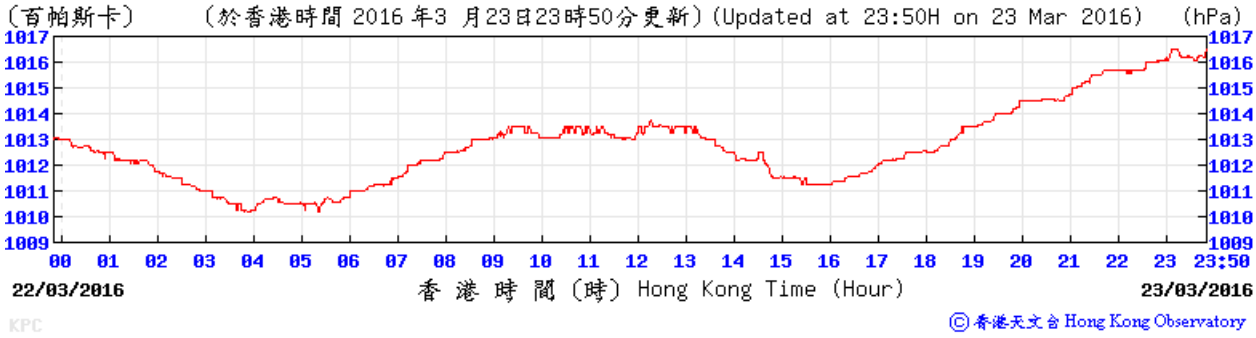
Wind Speed:



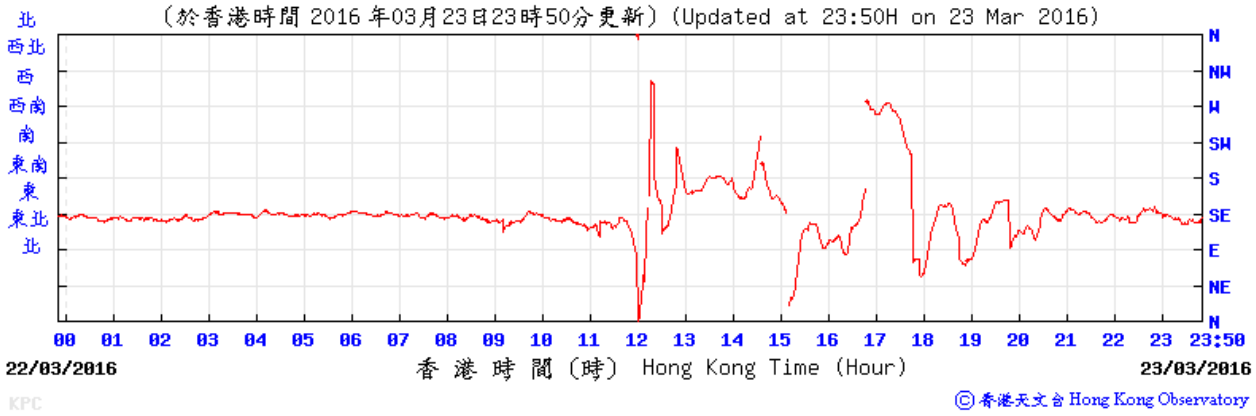
Temperature/Humidity:



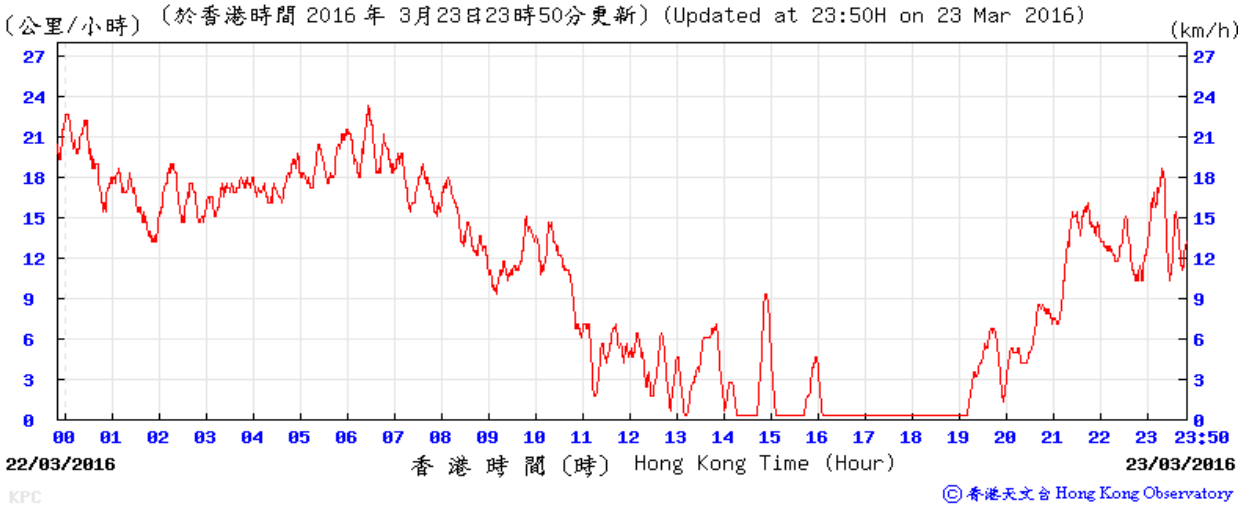
Pressure:



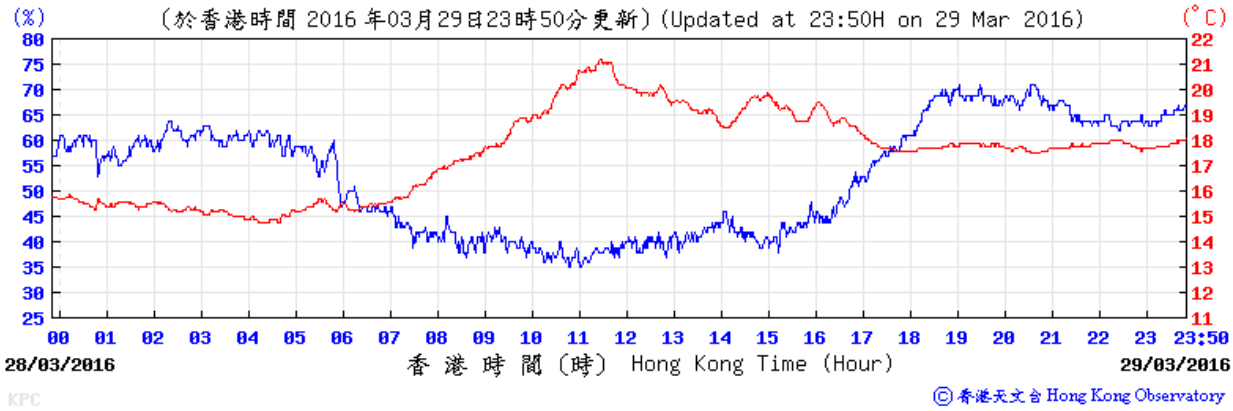
Wind Direction:



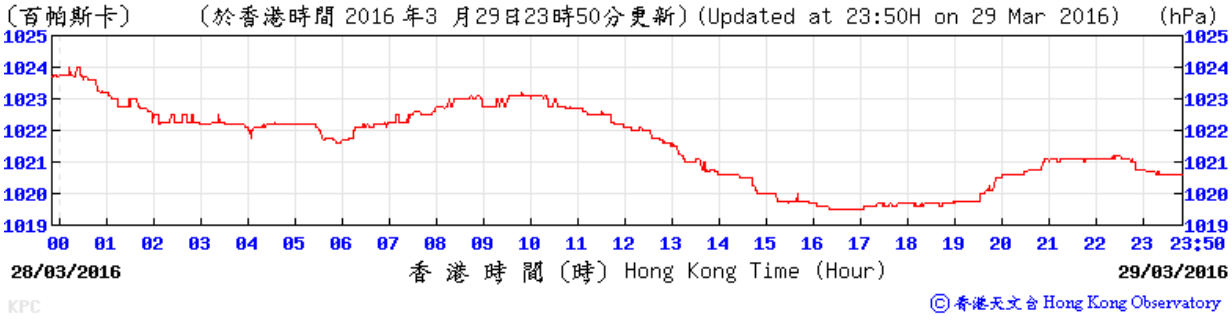
Wind Speed:



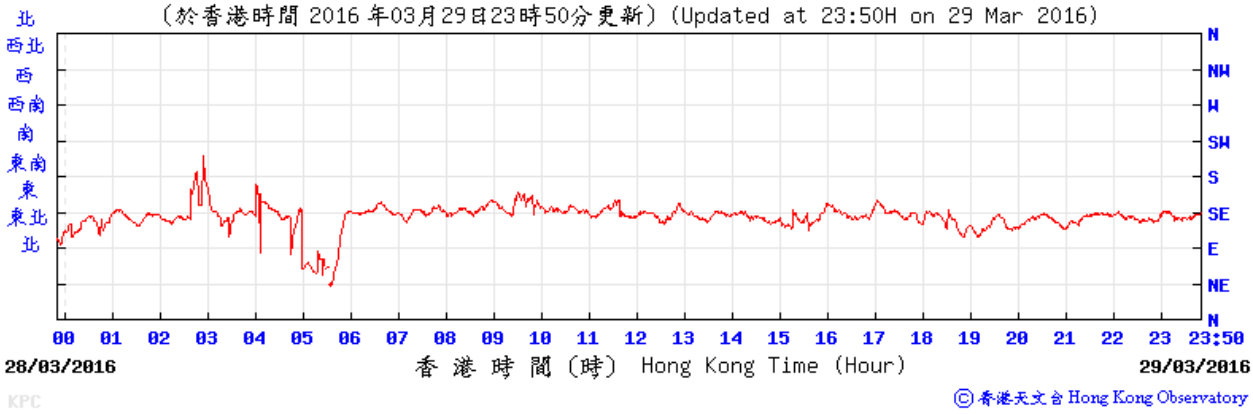
Temperature/Humidity:



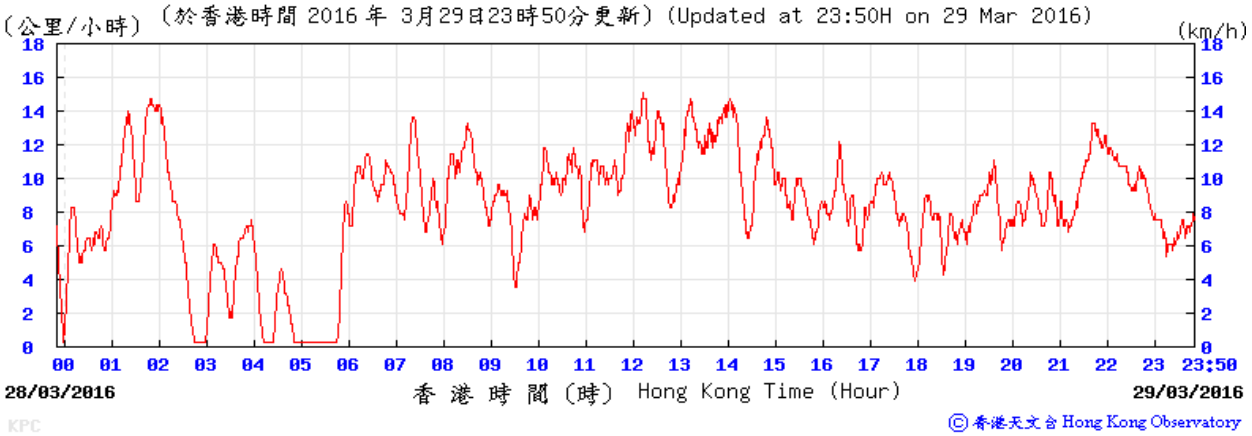
Pressure:



Wind Direction:



Wind Speed:



Appendix 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 Facilty	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													
May													
Jun													
Jul													
Aug													
Sep													
Oct													
Nov													
Dec													
Sub-total (2016)	39146.1	0.0	11376.0	26512.0	1258.1	0.0	0.0	108.3	0.0	0.0	0.0	0.0	90.0
Total	115406.4	0.0	11376.0	64373.4	39657.0	0.0	0.0	210.8	0.0	0.0	0.0	1.0	223.6

Note:

-233.0 ton, 704.6 ton and 16.9 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38, Tseung Kwan O Area 137 and Chai Wan Public Fill Barging Point 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.

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 Facilty	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	0.0												
May	0.0												
Jun	0.0												
Jul	0.0												
Aug	0.0												
Sep	0.0												
Oct	0.0												
Nov	0.0												
Dec	0.0												
Sub-total (2016)	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
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	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

Note:
-123.17 ton and 2578.95 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.

Appendix 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	**General Dust Control Measures** 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)	Rem	✓
2.1 & 10.3.1	**Best Practice For Dust Control** 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:		
	Good Site Management		
	▪ 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.	✓	Obs
	Disturbed Parts of the Roads		
	▪ 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.	✓	Rem
	Exposed Earth		
	▪ 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.	N/A	N/A
	Loading, Unloading or Transfer of Dusty Materials		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.	✓	✓
	Debris Handling		
	▪ Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides.	✓	✓
	▪ Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped.	✓	✓
	Transport of Dusty Materials		
	▪ 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.	✓	✓
	Wheel washing		
	▪ 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.	✓	✓
	Use of vehicles		
	▪ 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.	✓	✓
	▪ Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.	✓	✓
	▪ 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.	✓	✓
	Site hoarding		
	▪ 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	**Best Practicable Means for Cement Works (Concrete Batching Plant)** 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: Exhaust from Dust Arrestment Plant		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ Wherever possible the final discharge point from particulate matter arrestment plant, where is not 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		
	▪ All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist or smoke	✓	✓
	Engineering Design/Technical Requirements		
	▪ 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	✓	✓
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:	✓	✓
	▪ only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works;	✓	✓
	▪ machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum;	✓	✓
	▪ plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs;	✓	✓
	▪ mobile plant should be sited as far away from NSRs as possible; and	✓	✓
	▪ material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities.		
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 should be noted that the silenced PME selected for assessment can be found in Hong Kong.	N/A	N/A
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	✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	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:		
	▪ 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 WKCDA's Contractor prior to the commencement of construction;	Obs	✓
	▪ 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 WKCDA's Contractor prior to the commencement of construction.	✓	✓
	▪ 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.	✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ 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.	✓	✓
	▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Obs	Rem
	▪ 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.	✓	Obs
	▪ 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.	✓	✓
	▪ 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.	✓	✓
	▪ 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
	Barging facilities and activities		
	Recommendations for good site practices during operation of the proposed barging point include:		
	▪ 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 movement or propeller wash;	N/A	N/A
	▪ 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;	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and	N/A	N/A
	▪ 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
4.1 & 10.5.1	**Sewage effluent from construction workforce** 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.	✓	✓
4.1 & 10.5.1	**General construction activities**		
	▪ 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.	✓	Obs
	▪ 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
Waste Management Implications (Construction)			
6.1 & 10.7.1	**Good Site Practices** Recommendations for good site practices during the construction activities include:		
	▪ 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 introduction to public roads	✓	✓
	▪ 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	✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	**Waste Reduction Measures**		
	Recommendations to achieve waste reduction include:		
	▪ 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.	✓	✓
	▪ 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 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.	✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	**Chemical Waste**		
	▪ If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the "Code of Practice on the Packaging Labelling and Storage of Chemical Wastes". Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	✓	✓
	▪ Potential environmental impacts arising from the handling activities (including storage, collection, transportation and disposal of chemical waste) are expected to be minimal with the implementation of appropriate mitigation measures as recommended.	Obs	Obs
6.1 & 10.7.1	**General Refuse**		
	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.	✓	✓
Land Contamination (Construction)			
7.1 & 10.8.1	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.		
	The following measures are proposed for excavation and transportation of contaminated material:		
	▪ To minimize the chance for construction workers to come into contact with any contaminated materials, bulk earth-moving excavation equipment should be employed;	N/A	N/A
	▪ 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	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	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;	N/A	N/A
	▪ The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out;	N/A	N/A
	▪ Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater;	N/A	N/A
	▪ Truck bodies and tailgates should be sealed to stop any discharge;	N/A	N/A
	▪ 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;	N/A	N/A
	▪ Speed control for trucks carrying contaminated materials should be exercised;	N/A	N/A
	▪ 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	N/A	N/A
	▪ 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.	N/A	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 & 10.8 (CM4)	Softscape treatments such as vertical green wall panel /planting of climbing and/or weeping plants, etc, to maximize the green coverage and soften the hard architectural and engineering structures and facilities.	N/A	N/A
Table 9.1 &	Roof greening by means of intensive and extensive green roof to maximize the green coverage and	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
10.8 (CM5)	improve aesthetic appeal and visual quality of the building/structure.		
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

Appendix 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	1	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	0	0	0