



Development at West Kowloon Cultural District

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

January 2017

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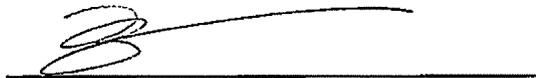
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This Monthly EM&A Report has been reviewed and certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:



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Date

13 Jan 2017

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13 Jan 2017

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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/B (EP) was issued with respect to the “Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District” which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO.

This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 December to 31 December 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 2, 9, 16, 23 and 30 December 2016 for M+ Museum and 7, 14, 21 and 28 December 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 complaints was recorded in the reporting month.

Record of Notification of Summons and Successful Prosecutions

One notification of summons regarding M+ Museum construction site made a discharge with exceeded limits of suspended solids on 2 July 2016 was received on 13 December 2016.

No 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:

- Construction of G/F, LGF, B1 and B2 slab;

- Construction of column from B2 to B1, B1 to LGF and LGF to GF;
- Installation of megastruss;
- Construction of DCS structure from B1 to LGF;
- Pile cap and sump pit construction at B2 and ICP;
- Construction of B1 slab at ICP

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

- Predrilling
- Pre-grouting adjacent to Seawall
- Pipe Pile Construction
- Socket-H Pile Construction
- Bored 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/B (EP) was issued with respect to the “Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District” which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO. The captioned projects include part of the abovementioned underpass road located within the site boundary also falls under this same category.

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

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

The Monthly EM&A Report is prepared in accordance with the Condition 3.4 of the Environmental Permit No. EP-453/2013/B. This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 December to 31 December 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:

- Construction of G/F, LGF, B1 and B2 slab;

- Construction of column from B2 to B1, B1 to LGF and LGF to GF;
- Pile cap and sump pit construction at B2 and ICP
- Installation of megastruss
- Construction of B1 slab at ICP

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

- Predrilling
- Pre-grouting adjacent to Seawall
- Pipe Pile Construction
- Socket-H Pile Construction
- Bored 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	AM2A – Austin Road West opposite to The Harbourside Tower 1	At least once every 6 days
	1-Hour TSP	AM2A – Austin Road West opposite to The Harbourside Tower 1	At least 3 times every 6 days
Noise	Leq, 30 minutes	NM1A- Podium level of The Harbourside Tower 1	Weekly
Landscape & Visual	Monitor implementation of proposed mitigation measures during the construction stage	As described in Table 9.1 and 9.2 of the EM&A Manual	Bi-weekly

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

The Harbourside management office formally rejected our proposal of setting up air quality and noise monitoring equipment on its premises at the podium level of Tower 1 (AM2/NM1) on 10 November 2015. Alternative noise monitoring location was identified at The Arch (NM2), however The Arch management office formally rejected our proposal of setting up noise monitoring equipment on its premises on 23 November 2015. Nevertheless, suitable air quality monitoring location at AM2 was identified on the ground floor in front of The Harbourside Tower 1, which is at the same location as that of baseline monitoring for consistency. No management approval is required at the ground floor for conducting the air monitoring. However, the electricity supply at AM2 was suspended from 31 August 2016 and was no longer available. In order to have a more secure electricity supply, an

alternative air monitoring location (AM2A) was identified at Austin Road West opposite to The Harbourside Tower 1, which is close to Lyric Theatre Complex site entrance. This alternative air monitoring location was approved by EPD on 28 September 2016. Noise monitoring at G/F of Harbourside will not be representative. Approval from the management office of the International Commerce Centre has been granted on 29 February 2016 for conducting noise monitoring at the alternative noise monitoring location identified at the podium floor (NM1A) which is free from screening to the construction activities. Therefore, 2 air quality monitoring stations and 1 noise impact monitoring station were confirmed for the impact monitoring.

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

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

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

2 Impact Monitoring Methodology

2.1 Introduction

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

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

2.2 Air Quality

2.2.1 Monitoring Parameters, Frequency and Duration

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

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

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

2.2.2 Monitoring Locations

Currently, the works under the captioned project are confined in the western part of the WKCD site. Therefore, only the monitoring stations AM1 and AM2A were set up at the proposed locations in accordance with updated EM&A Manual. Location of the monitoring station is given in **Table 2.2** and shown in **Figure 1**.

Table 2.2: Air Quality Monitoring Station

Monitoring Station	Location
AM1	International Commerce Centre (ICC)
AM2A	Austin Road West opposite to The Harbourside Tower 1

2.2.3 Monitoring Equipment

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

Table 2.3: TSP Monitoring Equipment

Equipment	Model
24-hour TSP monitoring	
High Volume Sampler	TE-5170 (Serial No.: 0767 and 8919)
Calibrator	TE-5025A (Orifice I.D.: 2454)
1-hour TSP monitoring	
Portable direct reading dust meter	Sibata LD-5R (Serial No.: 620402)

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

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

2.2.4 Monitoring Methodology

24-hour TSP Monitoring

Installation

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

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

Preparation of Filter Papers

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

Field Monitoring Procedures

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

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

Maintenance and Calibration

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

1-hour TSP Monitoring

Field Monitoring

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

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

Maintenance and Calibration

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

Weather Condition

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

2.3 Noise

2.3.1 Monitoring Parameters, Frequency and Duration

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

Table 2.4: Noise Monitoring Parameters, Period and Frequency

Time Period	Parameters	Frequency
Daytime on normal weekdays (0700-1900 hours)	L_{eq} (30 min), L_{90} (30 min) & L_{10} (30 min)	Once every week

2.3.2 Monitoring Location

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

Table 2.5: Noise Monitoring Station

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

2.3.3 Monitoring Equipment

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

Table 2.6: Noise Monitoring Equipments

Monitoring Station	Equipment Model	
	Integrating Sound Level Meter	Calibrator
NM1A	Rion NL-18 (Serial No.00360030)	Rion NC-73 (Serial No.10997142)

2.3.4 Monitoring Methodology

Field Monitoring

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

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.

- The sound level meter and calibrator are sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- Calibration records are shown in **Appendix F**.

Weather Condition

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

2.4 Landscape and Visual

2.4.1 Monitoring Program

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

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

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

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

3 Monitoring Results

3.1 Impact Monitoring

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

3.2 Air Quality Monitoring

3.2.1 1-hour TSP

Results of 1-hour TSP at the monitoring location AM1 and AM2A are summarised in **Table 3.1**. Graphical plots of the monitoring results are shown in **Appendix G**.

Table 3.1: Summary of 1-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	1-hour TSP ($\mu\text{g}/\text{m}^3$)			Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1st Result	2nd Result	3rd Result			
AM1	06-Dec-16	10:48	64	61	65	50-97	273.7	500
	12-Dec-16	10:52	81	89	97			
	16-Dec-16	8:02	53	51	50			
	22-Dec-16	10:50	64	70	75			
	28-Dec-16	10:48	62	66	70			
AM2A	06-Dec-16	11:02	94	87	90	56-101	274.2	500
	12-Dec-16	11:04	82	91	101			
	16-Dec-16	8:14	69	71	80			
	22-Dec-16	11:02	74	79	80			
	28-Dec-16	11:02	56	61	59			

3.2.2 24-hour TSP

Results of 24-hour TSP at the monitoring location AM1 and AM2A are summarised in **Table 3.2**. Graphical plots of the monitoring results are shown in **Appendix G**.

Table 3.2: Summary of 24-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	Monitoring Results ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1	06-Dec-16	10:50	47	40-47	143.6	260
	12-Dec-16	10:50	44			
	16-Dec-16	08:00	40			
	22-Dec-16	10:48	41			
	28-Dec-16	10:50	47			
AM2A	06-Dec-16	11:00	71	56-92	151.1	260
	12-Dec-16	11:02	92			
	16-Dec-16	08:12	66			
	22-Dec-16	11:00	76			
	28-Dec-16	11:00	56			

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

3.3 Noise Monitoring

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

Table 3.3: Summary of noise monitoring results during normal weekdays

Monitoring Date	Start Time	End Time	Leq (30 mins), dB(A)	Limit Level for Leq (dB(A))
06-Dec-16	14:00	14:30	69.0	75
12-Dec-16	14:00	14:30	67.6	
22-Dec-16	15:40	16:10	69.0	
28-Dec-16	14:00	14:30	68.1	

Remarks:

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

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

Construction works were extended to holidays on 4, 11 and 18 December 2016. In accordance with the EM&A Manual, additional monitoring was carried out during the restricted hours on 4, 11 and 18 December 2016. The L_{eq} (5 mins) is in the range of 68.7-73.6 dB(A). Major noise source includes traffic. Construction Noise Permits for the works carried out during restricted hours were obtained and listed in **Table 4.3** and **Table 4.4**.

3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 9 and 23 December 2016 for M+ Museum and 7 and 21 December 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 2, 9, 16, 23 and 30 December 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 9 December 2016. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.1**.

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

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
17 Nov 2016	Waste management	The contractor was reminded to improve the access to chemical store near CSO.	The chemical store is not in use now and no chemical waste was stored inside.	2 Dec 2016
24 Nov 2016	Water quality	Effluent quality at ICP sampling point and wetseps at M+ was checked. They were all visually clear when compared to standard solution and within proper pH range. The contractor was reminded to enhance maintenance and clean up at wetseps as very fine suspended particles were found in wetsep systems.	The contractor has cleaned the wetsep systems and the wetsep systems were observed with clear treated wastewater.	2 Dec 2016
2 Dec 2016	Water quality	The contractor was reminded to improve the access to wetsep no.1 for water sampling and desludge.	The contractor has enhanced the access to the wetsep no. 1.	14 Dec 2016
2 Dec 2016	Waste management	Oil stain and suspected chemical leakage was observed on the ground at B1 and gate 1. The contractor was reminded to remove them and treat it as chemical waste.	The contractor has cleared the oil stain and suspected chemical leakage on the ground at B1 and gate 1	5 Dec 2016
2 Dec 2016	Air quality/ Waste management	Muddy trails were found in gate 1. The contractor was reminded to ensure all wheels of vehicles are washed before leaving the site.	The contractor has provided wheel-washing for all vehicles before leaving the site.	9 Dec 2016
2 Dec 2016	Waste management	Refuse was observed near the seafront. The contractor was reminded to remove the refuse off site.	The contractor has removed the refuse near the seafront.	7 Dec 2016
2 Dec 2016	Waste management	Chemical containers near gate 3, DCS and seafront were observed without drip trays. The chemical drum near seafront was observed not in good condition. The contractor was reminded to provide drip trays for all chemical containers and remove the chemical drum off site.	The contractor has provided drip tray, and covered the chemical drum and removed the chemical containers without drip tray.	9 Dec 2016
2 Dec 2016	Water quality	Effluent quality at ICP sampling points and wetseps at M+ was checked. They were all visually clear when comparing to	N/A	N/A

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
		standard solution and within proper pH range.		
2 Dec 2016	Others	The contractor was reminded to provide proper protection (provide fencing) to trees near seafront until the tree survey report is issued.	The contractor has provided tree protection for trees near seafront.	7 Dec 2016
9 Dec 2016	Air quality	The contractor was reminded to enhance water spraying in site to reduce dust impact.	The contractor has enhanced water spraying in site.	14 Dec 2016
9 Dec 2016	Air quality	Stockpile near DCS was found uncovered. The contractor was reminded to well cover the stockpile to reduce dust impact.	The contractor has covered the stockpile near DCS.	14 Dec 2016
9 Dec 2016	Waste management	Oil stain was found on the ground near ICP. The contractor was reminded to clear the oil stain and treat it as chemical waste.	The contractor has removed the oil stain on the ground near ICP.	14 Dec 2016
9 Dec 2016	Water quality	The wastewater treatment at wetsep no. 2 was found insufficient. The contractor was reminded to enhance wastewater treatment to ensure compliance with WPCO requirement.	The wastewater treatment at wetsep no. 2 was found sufficient.	14 Dec 2016
9 Dec 2016	Air quality/ Waste management	Dump truck was observed uncovered and over-filled when leaving the site. The contractor was reminded to ensure all dump trucks are well-covered and not over-filled when leaving the site.	Dump truck was covered and not over-filled when leaving the site.	14 Dec 2016
9 Dec 2016	Water quality	Effluent discharge quality at ICP and M+ was checked. They were all visually clear when comparing to standard solution and within proper pH range.	N/A	N/A
16 Dec 2016	Waste management	Chemical containers and drums were observed without drip trays in several area in the site. The contractor was reminded to remove them if not in use or provide drip tray.	The contractor has removed the chemical containers/ drums previously observed without drip trays in various area of the site.	23 Dec 2016
16 Dec 2016	Waste management	The contractor was reminded to remove the construction waste accumulated in B1 and ICP. Also, the contractor was reminded to improve the house-keeping at B2 and remove the construction waste.	The contractor has removed the construction waste at B1, ICP and B2.	22 Dec 2016
16 Dec 2016	Water quality	Algae was observed accumulated in wetseps in M+. The contractor was reminded to remove algae more frequently to ensure the treatment performance of the wetseps.	The contractor has arranged cleaning to remove algae in wetseps in M+.	22 Dec 2016
16 Dec 2016	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. It was found marginally acceptable and was within proper pH range. The contractor was reminded to review and adjust the quantity of runoff treated in wetseps of ICP to ensure sufficient treatment for all wastewater before discharging to comply with WPCO.	The contractor has rearranged the quantity of runoff treated in wetseps in ICP. The treated wastewater was observed clear.	23 Dec 2016
23 Dec 2016	Waste management	Oil was observed in the drip tray at B1. The contractor was	The contractor has cleared the drip tray at B1.	29 Dec 2016

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
		reminded to clear the drip tray more frequently.		
23 Dec 2016	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. They were all observed clear when comparing to standard solution and within proper pH range.	N/A	N/A
30 Dec 2016	Waste management	Construction waste was observed in B2. The contractor was reminded to remove the construction waste regularly.	Follow-up status will be provided in the next reporting month	On-going
30 Dec 2016	Air quality	Stockpile was observed uncovered in B2. The contractor was reminded to well cover the stockpile to reduce dust impact.	Follow-up status will be provided in the next reporting month	On-going
30 Dec 2016	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. They were visually clear when comparing to standard solution and within proper pH range.	N/A	N/A

4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 7, 14, 21 and 28 December 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 21 December 2016. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.2**.

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)
30 Nov 2016	Air quality	Haul road was observed a little bit dry at car park. The contractor was reminded to increase water spraying frequency.	Water spraying to the haul road was conducted regularly	2 Dec 2016
30 Nov 2016	Waste management	The drip tray of air-compressor was observed full of mixture of water, oil and algae. The contractor was reminded to pump out the mixture and treat as chemical waste.	Mixture in drip tray of air compressor was cleared and treated as chemical waste.	2 Dec 2016
7 Dec 2016	Water quality	Low PH value was observed at the wet sep far from site entrance. The contractor was reminded to increase the PH value to an acceptable PH value (i.e. 6-9 PH)	Wastewater at the wet sep was neutralized and pH value resumed to normal range (6.71 pH).	8 Dec 2016
7 Dec 2016	Air quality	Haul road was observed dry at car park. The contractor was reminded to increase water spraying frequency.	Water spraying at car park was conducted regularly.	8 Dec 2016
7 Dec 2016	Waste management	Area L02 was observed oil leakage on the ground. The contractor was reminded to stop the leakage, remove the oil and treated as chemical waste.	Chemical leakage was cleaned up already and all chemicals was placed inside drip tray.	8 Dec 2016
14 Dec 2016	Water quality	Low PH value was observed at the wet sep far from site entrance. The contractor was reminded to monitor the PH value	The Contractor cleaned the pH server at Wetsep. After cleaning, the pH value observed was within the acceptable range.	15 Dec 2016

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
		to an acceptable PH value (i.e. 6-9 PH).		
21 Dec 2016	Waste management	The Contractor is reminded to place all chemical waste generated in the chemical waste storage area.	The chemical waste has been placed properly in the chemical waste storage area.	24 Dec 2016
21 Dec 2016	Water quality	The Contractor is reminded to treat all site effluent with wastewater treatment systems and ensure compliance with WPCO discharge licence.	All site effluent was properly treated.	28 Dec 2016
21 Dec 2016	Waste management	Some chemical containers were not properly placed in drip tray. The Contractor should ensure that sufficient drip trays are provided.	The chemicals have been removed from ground and placed inside drip tray.	24 Dec 2016
28 Dec 2016	Air quality	The Contractor was reminded to replace the NRMM label of the generator near seafront with colour one.	Follow-up status will be provided in the next reporting month	On-going
28 Dec 2016	Water quality	Turbid treated effluent was observed at wetsep no. 1. The Contractor was reminded to check the performance of the wetsep and desludge more frequently.	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, 16.8 ton and 109.98 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively, while 89.0 ton of general refuse was disposed of at SENT landfill. 48.3 ton of metals, 0.6 ton of paper/cardboard packaging, 0 ton of plastic and 70.0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 736.0 ton of inert C&D materials were reused in other projects and 37.0 ton of inert C&D materials were disposed to sorting facility. 0 ton of chemical waste was collected by licensed contractors in the reporting period.

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

4.2.2 Lyric Theatre Complex

As advised by the Contractor, 3,573.98 ton and 8,913.61 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 9.02 ton of general refuse was disposed of at SENT landfill. 13.85 ton of metals, 0 ton of paper/cardboard packaging, 0 ton of plastic and 0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 0 ton of inert C&D materials was reused in other projects. 1.26 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-RE1058-16	4-Nov-16	3-May-17	Valid	--
Wastewater Discharge License				
WT00023633-2016	4-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
394083	7-Oct-15	--	Notified	--

4.3.2 Lyric Theatre Complex

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

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Chemical Waste Producer Registration				
5213-217-G2347-39	17-Feb-16	--	Valid	--
Billing Account Construction Waste Disposal				
7024189	25-Jan-16	--	Account Active	--
Construction Noise Permit				
GW-RE1113-16	23-Nov-16	20-May-17	Valid	
Wastewater Discharge License				
WT00023648-2016	9-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
398075	18-Jan-16	--	Notified	--

4.4 Recommended Mitigation Measures

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

4.4.1 M+ Museum

Chemical and Waste Management

- All chemical drum/ containers stored on site should be provided with drip trays.

- All chemical drum/ containers stored on site should be provided with drip trays.
- Chemical waste in drip trays should be frequently removed.
- Construction waste generated on site should be regularly removed.
- Good housekeeping of site should be maintained.
- Leakage of oil/ chemical waste on ground should be removed.

Air Quality

- Maintain high standard of housekeeping to prevent emission of fugitive dust.
- Dusty materials stored on site should be well covered to reduce dust impact.
- Enhance water spraying for haul roads to reduce dust impact.
- Conduct wheel-washing for all vehicles before leaving the site.
- All vehicles carrying dusty materials must be well covered and not over-filled before leaving the site.

Water Quality

- Wetsep units should be regularly checked to ensure proper function and adequate capacity of the system to treat wastewater or runoff before discharge.
- All wastewater or site runoff must be treated in wastewater treatment facilities before discharge.
- Frequent cleaning should be maintained to remove algae in wetsep units
- Maintain access to wetsep units for ease of maintenance and water sampling.

Others

- Provide proper protection to all trees within the site area.

4.4.2 Lyric Theatre Complex

Chemical and Waste Management

- All chemical drum/ containers stored on site should be provided with drip trays.
- Leakage of oil/ chemical waste on ground should be removed.
- Chemical waste should be properly stored in designated chemical waste storage area.

Air Quality

- Enhance water spraying for haul roads to reduce dust impact.
- Proper NRMM label should be provided to the plants.

Water Quality

- Wetsep units should be regularly checked to ensure proper function to treat wastewater or runoff before discharge.

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 November 2016	14 December 2016

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

6.1 Record on Non-compliance of Action and Limit Levels

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

6.2 Record on Environmental Complaints Received

No environmental complaint was received this month. The cumulative statistics on complaints were provided in **Appendix K**.

6.3 Record on Notifications of Summons and Successful Prosecution

One notification of summons regarding M+ Museum construction site made a discharge on 2 July 2016 of which suspended solids exceeded the limits stated in the table under Specific Condition B1 of the license numbered WT00023633-2016 granted on 4 April 2016 under the Water Pollution Control Ordinance was issued to the contractor, Hsin Chong Construction Company Limited on 13 December 2016. The Water Pollution Control Ordinance was breached at ICP, located adjacent to the M+ Museum construction site.

According to the Contractor, a Senior Environmental Protection Inspector collected legal sample at the ICP's discharge point on 2 July 2016. EPD also inspected the waste water treatment system of ICP and observed that all effluent has been screened by sedimentation tanks and treated by wetseps prior to discharging off site. A pink form was issued after the inspection. The wastewater treatment facilities had been regularly checked to ensure the performance of the system for treating all the site runoff. The Contractor has conducted daily water sampling to check the quality of the effluent since then. ET has also inspected all the effluent quality during weekly site inspection since 8 July 2016 and the details of the checking are presented in **Table 4.1**. Any observations regarding unsatisfactory performance of the wetseps have been recorded and subsequently followed up by the Contractor.

Follow-up status will be provided in the next reporting month.

No successful prosecutions 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:

- Construction of G/F, LGF, B1 and B2 slab;
- Construction of column from B2 to B1, B1 to LGF and LGF to GF;
- Installation of megastruss;
- Construction of DCS structure from B1 to LGF;
- Pile cap and sump pit construction at B2 and ICP;
- Construction of B1 slab at ICP

7.1.2 Lyric Theatre Complex

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

- Predrilling
- Pre-grouting adjacent to Seawall
- Pipe Pile Construction
- Socket-H Pile Construction
- Bored 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 Theatre Complex foundation works commenced on 1 March 2016.

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

One notification of summons regarding M+ Museum construction site made a discharge with exceeded limits of suspended solids on 2 July 2016 was received on 13 December 2016.

No environmental complaints and no successful prosecution were received during the reporting month.

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

8.2 Recommendations

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

Figure 1 Site Layout Plan and Monitoring Stations

Appendices

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A. Project Organisation

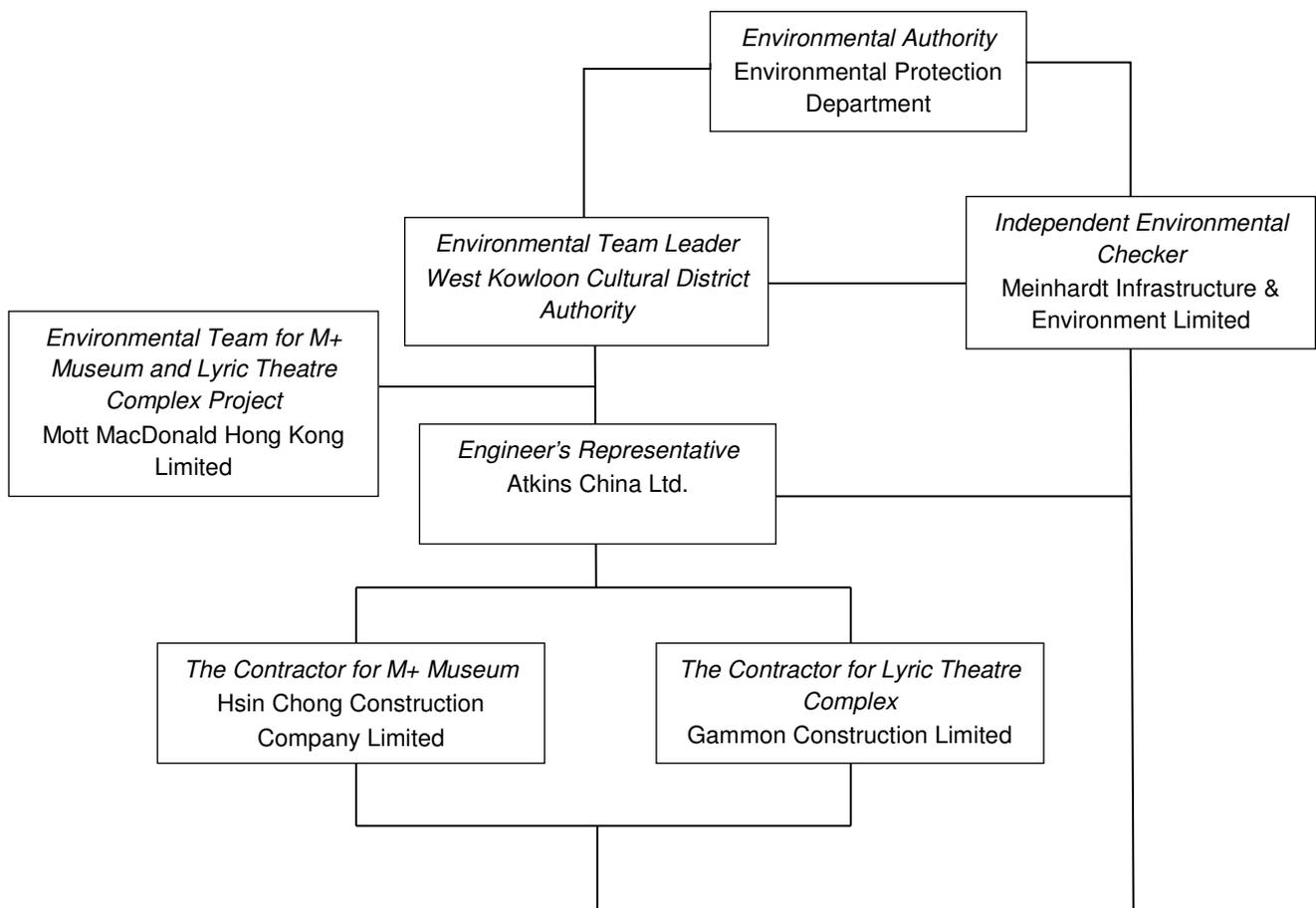


Table A-1: Contact information

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

B. Tentative Construction Programme

M+ Museum

(3MRP-14) Three Months Rolling Programme Status at 30 Nov 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016				January 2017				February 2017			March 2017			
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05	
(3MRP-14) Three Months Rolling Programme Status at 30 Nov 2016																													
Contract Key Dates & Milestones																													
Contract Dates																													
CP02	Contract Period (1218 days)	1216	26-Sep-15	25-Jan-19	26-Sep-15 A	19-May-19	36%	-113	-113																				
Schedule of Milestones																													
Cost Centre A - Preliminaries and General Requirements																													
MSA.08	Compliance Review to the CA's satisfaction on Project Time & C	0		31-Dec-16		31-Dec-16	0%	0	6																	◆ Compliance Review to the CA's satisfaction on Project			
Cost Centre B - M+																													
MSB.05	Complete all Columns, Structural Cores and other work necessa	0		30-Sep-16		16-Dec-16	0%	-65	620																	◆ Complete all Columns, Structural Cores and other work necessary			
MSB.03	Complete Excavation to 100% of Overall Volume of Bulk Excav.	0		31-Mar-17		22-Dec-16	0%	79	616																				
Cost Centre C - Public Works and Tunnel Protection Works																													
MSC.04i	Complete of all work necessary for commencement of erection	0		30-Sep-16		31-Dec-16	0%	-3	26																	◆ Complete of all work necessary for commencement of			
MSC.04ii	Complete all Columns, Structural Cores and other work necessa	0		31-Jul-16		31-Dec-16	0%	-5	26																	◆ Complete all Columns, Structural Cores and other work			
Interface Dates																													
Access Date																													
AD1530	M70 - Arts Pavilion Area on M+ side of M+ / Park Interface (t.b	0	29-Jun-16		16-Nov-16 A		100%	-140																		◆ M70 - Arts Pavilion Area on M+ side of M+ / Park Interface (t.b.a.), M70 - Arts Pavilion Area			
AD1400	M43 - At-grade Road Footpath at ICP / SPS Entrance Portal (fro	0	15-Feb-17		06-Jan-17		0%	40	720																	◆ M43 - At-grade Road			
Vacation Date																													
VD1070	M08 - Park Phase 3 Part at Waterfront (15Jun2016)	0		15-Jun-16		01-Dec-16	0%	-169	785																	◆ M08 - Park Phase 3 Part at Waterfront (15Jun2016), M08 - Park Phase 3 Part			
Interface Schedule (Refer to Interface Schedule - Appendix D1 20-Nov-2015)																													
Lyric Theatre Complex and Extended Basement (Lyric)																													
Along Interface North of AEL																													
IF1020	Complete excavation north of AEL for B2/F slab and vacate M12	0		23-Sep-16		30-Nov-16	0%	-67	-2																	◆ Complete excavation north of AEL for B2/F slab and vacate M12, Complete excavation			
IF1060	Take possession of M12 for external wall construction	0	29-Dec-16		25-Jan-17		0%	-27	-58																	◆ Take possession of M12 for external			
Along Interface South of AEL																													
Grid 6 & 12 Area																													
IF1036	Complete PC109 & Basement Road Wall between PC109 & 116	0		24-May-16		19-Dec-16	0%	-209	767																	◆ Complete PC109 & Basement Road Wall between PC109 & 116 to			
IF1039	Complete Basement Road Wall between PC96, 103 & 105 to G/	0		28-May-16		20-Jan-17	0%	-237	735																	◆ Complete Basement Road Wall between			
IF1034	Complete External Wall from B1/F to G/F Level between Grid 6	0		27-Jun-16		20-Jan-17	0%	-207	735																	◆ Complete External Wall from B1/F to G			
PIW Phase 1																													
Civil & Structural Interface with PIW At-Grade Road																													
M+ North West Boundary																													
IF2095	Submit Hoarding Design for BD Approval	30	01-Jun-16	30-Jun-16	30-Nov-16	06-Jan-17	0%	-155	431																	IF2095, Submit Hoarding Design for BD Approval			
Interface Car Park Utilities Works																													
IF2180	Construct U/G utilities connections from footway to ICP/SPS	70	24-Mar-16	05-Jul-16	06-Jun-16 A	23-Dec-16	50%	-142	-15																	IF2180, Construct U/G utilities connections from footway to			
IF2190	Complete pavement interface with At-grade road	10	08-Jul-16	22-Jul-16	24-Dec-16	06-Jan-17	0%	-138	-15																	IF2190, Complete pavement interface with At-grade			
IF2200	Remove hoarding along footway & vacate footway	5	23-Jul-16	29-Jul-16	07-Jan-17	12-Jan-17	0%	-137	-15																	IF2200, Remove hoarding along footway & vacate			
Interface Car Park Entrance Portal																													
IF2210	Remove hoarding within M26 to make way for final pavement	5	15-Feb-17	20-Feb-17	06-Jan-17	11-Jan-17	0%	31	581																	IF2210, Remove			

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

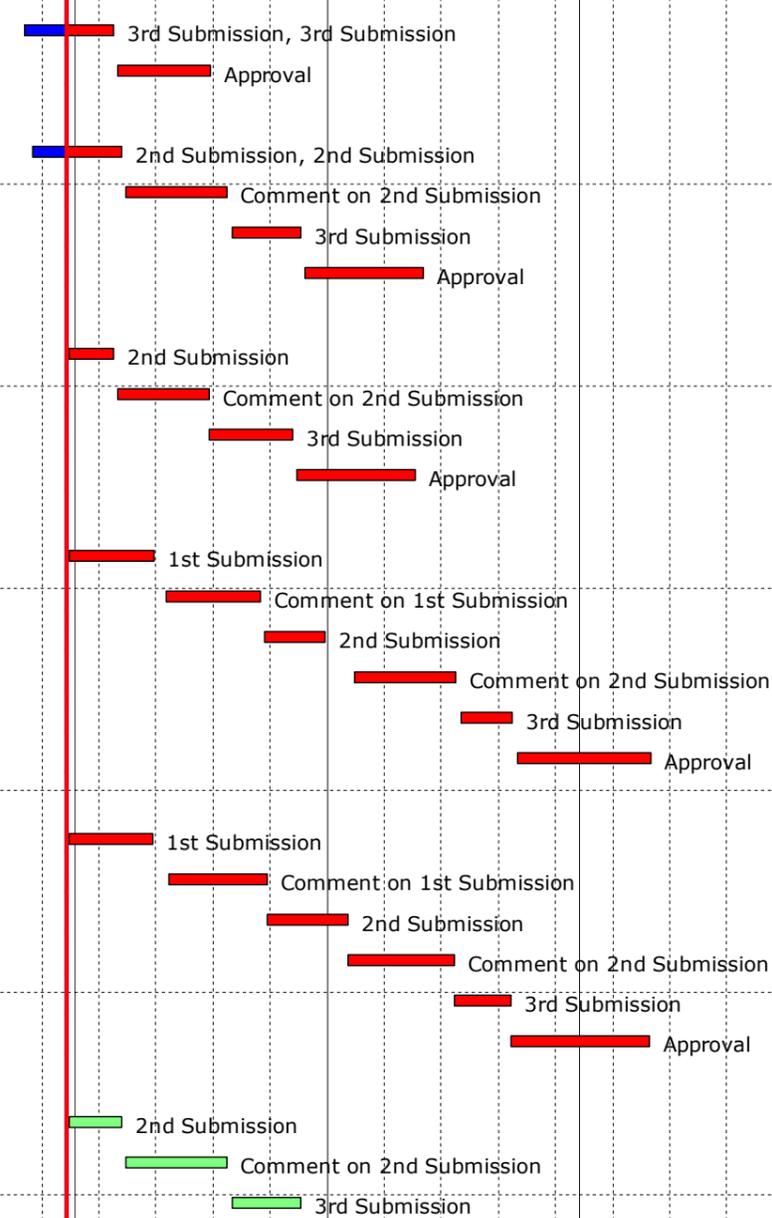
West Kowloon Cultural District Authority
**(3MRP-14) Three Months Rolling Programme
 Status at 30 Nov 2016**



CMWP-12				
Date	Revision	Checked	Approved	
08-Aug-16	(3MRP-10) 3-Months Rolling Prog Status at 31 July 2016	Jojo	Ricky Lau / Chris Chau	
08-Sep-16	(3MRP-11) 3-Months Rolling Prog Status at 31 Aug 2016	Jojo	Ricky Lau / Chris Chau	
06-Oct-16	(3MRP-12) 3-Months Rolling Prog Status at 30 Sept 2016	Chris / Jojo	Ricky Lau / Chris Chau	
08-Nov-16	(3MRP-13) 3-Months Rolling Prog Status at 31 Oct 2016	Chris / Jojo	Ricky Lau / Chris Chau	
05-Dec-16	(3MRP-14) 3-Months Rolling Prog Status at 30 Nov 2016	Chris / Jojo	Ricky Lau / Chris Chau	

(3MRP-14) Three Months Rolling Programme Status at 30 Nov 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016				January 2017				February 2017			March 2017			
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05	
SUM.0025	Facade Door - Shop Drawings	77			30-Nov-16	07-Mar-17	0%		-83																				
M+ RC Structure																													
M+ Podium																													
SUM.0100	Podium - B1/Floor Slab Structure	215			15-Mar-16 A	27-Feb-17	50%		564																				
SUM.0110	Podium - Grd/Flr Slab Structure	268			12-Oct-16 A	13-Oct-17	10%		18																				
SUM.0120	Podium - 1st/Flr Slab Structure	243			31-Dec-16	26-Oct-17	0%		367																				
SUM.0130	Podium - 1M/Flr Slab Structure	225			23-Jan-17	26-Oct-17	0%		-52																				
SUM.0140	Podium - 2nd/Flr Slab Structure	220			16-Feb-17	11-Nov-17	0%		3																				
Preliminaries																													
Pre-Construction - Design & Procurements																													
External Facade for M+ Podium (By Permasteelisa)																													
Facade Shop Drawing Submission																													
Tower Facade																													
DS.2004.10	3rd Submission	10			25-Nov-16 A	05-Dec-16	40%		-8																				
DS.2004.12	Approval	11			06-Dec-16	17-Dec-16	0%		-8																				
Podium Facade																													
DS.2004.18	2nd Submission	6			26-Nov-16 A	06-Dec-16	30%		-40																				
DS.2004.20	Comment on 2nd Submission	11			07-Dec-16	19-Dec-16	0%		-40																				
DS.2004.22	3rd Submission	6			20-Dec-16	28-Dec-16	0%		-40																				
DS.2004.24	Approval	12			29-Dec-16	12-Jan-17	0%		-40																				
Glass Wall with T Mullion (Kinked & Straight B1/F & G/F),CW-01a to 03d																													
DS.2004.30	2nd Submission	5			30-Nov-16	05-Dec-16	0%		-84																				
DS.2004.32	Comment on 2nd Submission	10			06-Dec-16	17-Dec-16	0%		-84																				
DS.2004.34	3rd Submission	7			17-Dec-16	27-Dec-16	0%		-84																				
DS.2004.36	Approval	12			28-Dec-16	11-Jan-17	0%		-84																				
Glass Wall with Precast Mullion & Ceramic Mullion,CW-04-05d and 07																													
DS.2004.38	1st Submission	10			30-Nov-16	10-Dec-16	0%		-83																				
DS.2004.40	Comment on 1st Submission	10			12-Dec-16	23-Dec-16	0%		-83																				
DS.2004.42	2nd Submission	6			24-Dec-16	31-Dec-16	0%		-83																				
DS.2004.44	Comment on 2nd Submission	11			04-Jan-17	16-Jan-17	0%		-83																				
DS.2004.46	3rd Submission	6			17-Jan-17	23-Jan-17	0%		-83																				
DS.2004.48	Approval	12			24-Jan-17	09-Feb-17	0%		-83																				
Podium Ceramic Concrete Tubes & with Perforated Cladding, FAC-CW-07																													
DS.2004.50	1st Submission	10			30-Nov-16	10-Dec-16	0%		-75																				
DS.2004.52	Comment on 1st Submission	10			12-Dec-16	24-Dec-16	0%		-75																				
DS.2004.54	2nd Submission	6			24-Dec-16	03-Jan-17	0%		-75																				
DS.2004.56	Comment on 2nd Submission	11			03-Jan-17	16-Jan-17	0%		-75																				
DS.2004.58	3rd Submission	6			16-Jan-17	23-Jan-17	0%		-75																				
DS.2004.60	Approval	12			23-Jan-17	09-Feb-17	0%		-75																				
Garden Gallery Ceramic Cladding & Ceiling,CE-03a,03b,03c																													
DS.2004.66	2nd Submission	6			30-Nov-16	06-Dec-16	0%		11																				
DS.2004.68	Comment on 2nd Submission	11			07-Dec-16	19-Dec-16	0%		11																				
DS.2004.70	3rd Submission	6			20-Dec-16	28-Dec-16	0%		11																				



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Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017				February 2017			March 2017									
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05								
DS.2004.72	Approval	12			29-Dec-16	12-Jan-17	0%		11																											
L3 Storefront, CW-08a,08b																																				
DS.2004.82	3rd Submission	6			30-Nov-16	06-Dec-16	0%		75																											
DS.2004.84	Approval	12			07-Dec-16	20-Dec-16	0%		75																											
Strip Glazing at Skylight Gallery L3 & Plaza Skylight, CW10, SK-01,02																																				
DS.2004.90	2nd Submission	5			30-Nov-16	05-Dec-16	0%		3																											
DS.2004.92	Comment on 2nd Submission	11			07-Dec-16	19-Dec-16	0%		3																											
DS.2004.94	3rd Submission	6			20-Dec-16	28-Dec-16	0%		43																											
DS.2004.96	Approval	12			29-Dec-16	12-Jan-17	0%		43																											
Shop Drawings Metal Cladding FAC-LV-01b (Additional Scope)																																				
DS.2004.106	1st Submission	11			30-Nov-16	13-Dec-16	0%		1																											
DS.2004.116	Comment on 1st Submission	12			13-Dec-16	29-Dec-16	0%		1																											
DS.2004.126	2nd Submission	5			29-Dec-16	05-Jan-17	0%		1																											
DS.2004.136	Comment on 2nd Submission	11			05-Jan-17	18-Jan-17	0%		1																											
DS.2004.146	3rd Submission	6			18-Jan-17	25-Jan-17	0%		1																											
DS.2004.156	Approval	11			25-Jan-17	10-Feb-17	0%		1																											
Facade Doors - Shop Drawings Submission (Additional Works)																																				
Facade Door Package # 1: Glazed Doors Bet Ceramic Concrete Mullion (Total = 53 nos)																																				
DS.2004.166	Facade Door Package # 1 - 1st Submission	12			30-Nov-16	14-Dec-16	0%		-81																											
DS.2004.176	Facade Door Package # 1 - Comment on 1st Submission	12			14-Dec-16	30-Dec-16	0%		-81																											
DS.2004.186	Facade Door Package # 1 - 2nd Submission	17			30-Dec-16	20-Jan-17	0%		-81																											
DS.2004.196	Facade Door Package # 1 - Comment on 2nd Submission	10			20-Jan-17	04-Feb-17	0%		-81																											
DS.2004.206	Facade Door Package # 1 - 3rd Submission	12			04-Feb-17	18-Feb-17	0%		-81																											
DS.2004.216	Facade Door Package # 1 - Approval	12			18-Feb-17	04-Mar-17	0%		-81																											
Facade Door Package # 2: Sliding Door in L3 Storefront (Total = 4 nos automatic)																																				
DS.2004.226	Facade Door Package # 2 - 1st Submission	12			30-Nov-16*	13-Dec-16	0%		-81																											
DS.2004.236	Facade Door Package # 2 - Comment on 1st Submission	12			14-Dec-16	29-Dec-16	0%		-81																											
DS.2004.246	Facade Door Package # 2 - 2nd Submission	18			30-Dec-16	21-Jan-17	0%		-81																											
DS.2004.256	Facade Door Package # 2 - Comment on 2nd Submission	11			21-Jan-17	07-Feb-17	0%		-81																											
DS.2004.266	Facade Door Package # 2 - 3rd Submission	11			07-Feb-17	20-Feb-17	0%		-81																											
DS.2004.276	Facade Door Package # 2 - Approval	11			20-Feb-17	04-Mar-17	0%		-81																											
Facade Door Package # 3: Swing Door at L3 Cafe (Total = 1 no Manual)																																				
DS.2004.286	Facade Door Package # 3 - 1st Submission	12			30-Nov-16*	13-Dec-16	0%		-70																											
DS.2004.296	Facade Door Package # 3 - Comment on 1st Submission	12			14-Dec-16	29-Dec-16	0%		-70																											
DS.2004.306	Facade Door Package # 3 - 2nd Submission	12			30-Dec-16	14-Jan-17	0%		-70																											
DS.2004.316	Facade Door Package # 3 - Comment on 2nd Submission	12			14-Jan-17	01-Feb-17	0%		-70																											
DS.2004.326	Facade Door Package # 3 - 3rd Submission	5			01-Feb-17	07-Feb-17	0%		-70																											
DS.2004.336	Facade Door Package # 3 - Approval	11			07-Feb-17	20-Feb-17	0%		-70																											
Facade Door Package # 4: Swing Door Mounted in GW with T-Mullion (Total = 29 nos)																																				
DS.2004.346	Facade Door Package # 4 - 1st Submission	14			30-Nov-16*	16-Dec-16	0%		-81																											
DS.2004.356	Facade Door Package # 4 - Comment on 1st Submission	12			16-Dec-16	03-Jan-17	0%		-81																											
DS.2004.366	Facade Door Package # 4 - 2nd Submission	14			03-Jan-17	19-Jan-17	0%		-81																											
DS.2004.376	Facade Door Package # 4 - Comment on 2nd Submission	13			19-Jan-17	07-Feb-17	0%		-81																											
DS.2004.386	Facade Door Package # 4 - 3rd Submission	10			07-Feb-17	18-Feb-17	0%		-81																											

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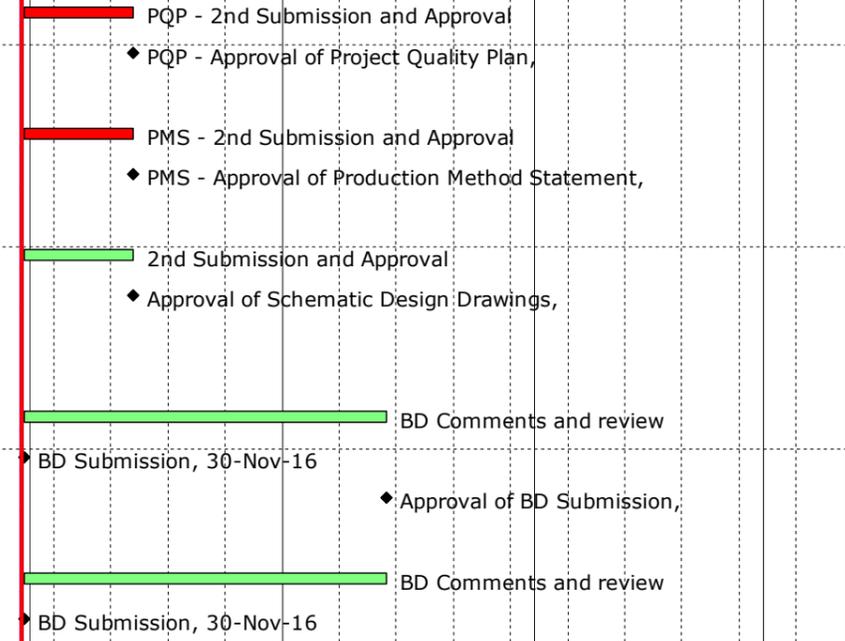
Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017				February 2017			March 2017				
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05			
DS.2004.396	Facade Door Package # 4 - Approval	12			18-Feb-17	04-Mar-17	0%		-81																						
Facade Door Package # 5: Large Double Door at B1/F Transformaer Room (Total = 1 no manual)																															
DS.2004.406	Facade Door Package # 5 - 1st Submission	14			30-Nov-16*	15-Dec-16	0%		-71																						
DS.2004.416	Facade Door Package # 5 - Comment on 1st Submission	12			16-Dec-16	31-Dec-16	0%		-71																						
DS.2004.426	Facade Door Package # 5 - 2nd Submission	11			03-Jan-17	16-Jan-17	0%		-71																						
DS.2004.436	Facade Door Package # 5 - Comment on 2nd Submission	10			16-Jan-17	27-Jan-17	0%		-71																						
DS.2004.446	Facade Door Package # 5 - 3rd Submission	6			27-Jan-17	07-Feb-17	0%		-71																						
DS.2004.456	Facade Door Package # 5 - Approval	12			07-Feb-17	21-Feb-17	0%		-71																						
Facade Door Package # 6: B1/F Exit Doors (Total = 7 nos manual)																															
DS.2004.466	Facade Door Package # 6 - 1st Submission	13			30-Nov-16*	15-Dec-16	0%		-71																						
DS.2004.476	Facade Door Package # 6 - Comment on 1st Submission	10			15-Dec-16	29-Dec-16	0%		-71																						
DS.2004.486	Facade Door Package # 6 - 2nd Submission	12			29-Dec-16	13-Jan-17	0%		-71																						
DS.2004.496	Facade Door Package # 6 - Comment on 2nd Submission	12			13-Jan-17	27-Jan-17	0%		-71																						
DS.2004.506	Facade Door Package # 6 - 3rd Submission	6			27-Jan-17	07-Feb-17	0%		-71																						
DS.2004.516	Facade Door Package # 6 - Approval	12			07-Feb-17	21-Feb-17	0%		-71																						
Facade Door Package # 7: Garden Gallery Door (Total = 2 nos manual)																															
DS.2004.526	Facade Door Package # 7 - 1st Submission	12			30-Nov-16*	13-Dec-16	0%		-69																						
DS.2004.536	Facade Door Package # 7 - Comment on 1st Submission	12			14-Dec-16	29-Dec-16	0%		-69																						
DS.2004.546	Facade Door Package # 7 - 2nd Submission	12			30-Dec-16	14-Jan-17	0%		-69																						
DS.2004.556	Facade Door Package # 7 - Comment on 2nd Submission	11			14-Jan-17	27-Jan-17	0%		-69																						
DS.2004.566	Facade Door Package # 7 - 3rd Submission	6			27-Jan-17	07-Feb-17	0%		-69																						
DS.2004.576	Facade Door Package # 7 - Approval	10			07-Feb-17	18-Feb-17	0%		-69																						
Facade Door Package # 8: Door Loacted at Metal Claddings (Total = 20 nos manual)																															
DS.2004.586	Facade Door Package # 8 - 1st Submission	11			30-Nov-16*	13-Dec-16	0%		-63																						
DS.2004.596	Facade Door Package # 8 - Comment on 1st Submission	12			13-Dec-16	29-Dec-16	0%		-63																						
DS.2004.606	Facade Door Package # 8 - 2nd Submission	6			29-Dec-16	06-Jan-17	0%		-63																						
DS.2004.616	Facade Door Package # 8 - Comment on 2nd Submission	11			06-Jan-17	19-Jan-17	0%		-63																						
DS.2004.626	Facade Door Package # 8 - 3rd Submission	6			19-Jan-17	26-Jan-17	0%		-63																						
DS.2004.636	Facade Door Package # 8 - Approval	11			26-Jan-17	11-Feb-17	0%		-63																						
Facade Door Package # 9: G/F Access Door in Ceramic Tube (Total = 8 nos)																															
DS.2004.646	Facade Door Package # 9 - 1st Submission	12			30-Nov-16*	13-Dec-16	0%		-70																						
DS.2004.656	Facade Door Package # 9 - Comment on 1st Submission	12			14-Dec-16	30-Dec-16	0%		-70																						
DS.2004.666	Facade Door Package # 9 - 2nd Submission	12			30-Dec-16	14-Jan-17	0%		-70																						
DS.2004.676	Facade Door Package # 9 - Comment on 2nd Submission	11			14-Jan-17	27-Jan-17	0%		-70																						
DS.2004.686	Facade Door Package # 9 - 3rd Submission	6			27-Jan-17	07-Feb-17	0%		-70																						
DS.2004.696	Facade Door Package # 9 - Approval	11			07-Feb-17	20-Feb-17	0%		-70																						
Facade Door Package # 10: B1/F Carriageway Access Panel / Doors (Total = 24 nos)																															
DS.2004.706	Facade Door Package # 10 - 1st Submission	12			30-Nov-16*	13-Dec-16	0%		-83																						
DS.2004.716	Facade Door Package # 10 - Comment on 1st Submission	11			14-Dec-16	29-Dec-16	0%		-83																						
DS.2004.726	Facade Door Package # 10 - 2nd Submission	18			29-Dec-16	20-Jan-17	0%		-83																						
DS.2004.736	Facade Door Package # 10 - Comment on 2nd Submission	12			20-Jan-17	07-Feb-17	0%		-83																						
DS.2004.746	Facade Door Package # 10 - 3rd Submission	12			07-Feb-17	21-Feb-17	0%		-83																						
DS.2004.756	Facade Door Package # 10 - Approval	12			21-Feb-17	07-Mar-17	0%		-83																						
Facade Door Package # 11: CSF Bldg (Total = 2 nos)																															

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Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017				February 2017			March 2017		
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05	
Podium Facade - Glass Production & Fabrication																													
DS.2026.76	Coated Glass Production	48			30-Nov-16	27-Jan-17	0%		80	Coated Glass Production																			
DS.2026.78	Fabrication of Insulated Glass Panel	12			16-Feb-17	02-Mar-17	0%		66	Fabrication of Insulated Glass Panel																			
Podium Facade - Curtain Wall glazed panel production and Fabrication																													
DS.2026.80	Die Making	48			30-Nov-16	27-Jan-17	0%		38	Die Making																			
DS.2026.82	Aluminium Extrusion Production	12			03-Feb-17	17-Feb-17	0%		36	Aluminium Extrusion Production																			
Podium Facade - Terracotta																													
DS.2026.90	Ordering of Terracotta	11			03-Feb-17	16-Feb-17	0%		-12	Ordering of Terracotta																			
DS.2026.92	Die Making of Terracotta	36			16-Feb-17	30-Mar-17	0%		-12	Die Making of Terracotta																			
Podium Facade - Precast Concrete Facade																													
Podium Facade - Precast Facade Die Making																													
DS.2026.100	Precast Concrete Mould Making	96			30-Nov-16	28-Mar-17	0%		2	Precast Concrete Mould Making																			
Kinked Glass Wall with T Mullion and Reflective Glass at B1,CW-02b																													
Kinked Glass Wall - Drawing Submission																													
DS.2026.122	1st Shop Drawing Submission	11			17-Dec-16	03-Jan-17	0%		83	1st Shop Drawing Submission																			
DS.2026.124	1st Shop Drawing Comment	11			03-Jan-17	16-Jan-17	0%		83	1st Shop Drawing Comment																			
DS.2026.126	2nd Shop Drawing Submission	11			16-Jan-17	01-Feb-17	0%		83	2nd Shop Drawing Submission																			
DS.2026.128	Approval of Performance Mock Up Drawing	11			02-Feb-17	15-Feb-17	0%		83	Approval of Performance Mock Up Drawing																			
Kinked Glass Wall - Submission of Testing Proposal																													
DS.2026.130	1st Submission of Testing Proposal	11			15-Feb-17	28-Feb-17	0%		83	1st Submission of Testing Proposal																			
Kinked Glass Wall - Ordering & Production of Material																													
DS.2026.138	Sealant Ordering (Typical two weeks time, tailor made need th	12			15-Feb-17	01-Mar-17	0%		105	Sealant Ordering																			
Kinked Glass Wall - Glass Production & Fabrication																													
DS.2026.140	Coated Glass Production	48			30-Nov-16	27-Jan-17	0%		117	Coated Glass Production																			
DS.2026.142	Fabrication of Insulated Glass Panel	12			01-Feb-17	14-Feb-17	0%		117	Fabrication of Insulated Glass Panel																			
Kinked Glass Wall - Curtain Wall glazed panel production and Fabrication																													
DS.2026.146	Die Making	48			30-Nov-16	27-Jan-17	0%		112	Die Making																			
DS.2026.144	PVF2 Paint Ordering	49			30-Nov-16	01-Feb-17	0%		123	PVF2 Paint Ordering																			
DS.2026.148	Aluminium Extrusion Production	12			15-Feb-17	01-Mar-17	0%		99	Aluminium Extrusion Production																			
Kinked Glass Wall - T Steel Mullion Production																													
DS.2026.154	Order of Paint	24			30-Nov-16	29-Dec-16	0%		173	Order of Paint																			
DS.2026.156	Painting of Steel Mullion	4			30-Dec-16	04-Jan-17	0%		173	Painting of Steel Mullion																			
Kinked Glass Wall - Installation																													
DS.2026.160	Installation on Mock Up	11			05-Jan-17	18-Jan-17	0%		173	Installation on Mock Up																			
Glass Wall with Ceramic Precast Mullions at ground Flr Main Entrance,CW-04																													
Glass Wall with PC Mullions - Drawing Submission																													
DS.2026.168	1st Shop Drawing Submission	11			30-Dec-16	13-Jan-17	0%		80	1st Shop Drawing Submission																			
DS.2026.170	1st Shop Drawing Comment	11			13-Jan-17	26-Jan-17	0%		80	1st Shop Drawing Comment																			
DS.2026.172	2nd Shop Drawing Submission	11			26-Jan-17	11-Feb-17	0%		80	2nd Shop Drawing Submission																			
DS.2026.174	Approval of Performance Mock Up Drawing	11			11-Feb-17	24-Feb-17	0%		80	Approval of Performance Mock Up Drawing																			
Glass Wall with PC Mullions - Glass Production & Fabrication																													
DS.2026.176	Coated Glass Production	72			30-Nov-16	28-Feb-17	0%		77	Coated Glass Production																			
Glass Wall with PC Mullions - Glazed Panel production and Fabrication																													
DS.2026.180	Die Making	36			10-Feb-17	23-Mar-17	0%		27	Die Making																			

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Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017				February 2017			March 2017							
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05						
DS.2260.40	BD Drawing submission 1st Comments	11			13-Dec-16	28-Dec-16	0%		51																									
DS.2260.42	BD Drawing Preparation & 2nd BD Submission to Consultants	11			28-Dec-16	11-Jan-17	0%		51																									
DS.2260.44	BD Drawing submission 2nd Comments	11			11-Jan-17	24-Jan-17	0%		51																									
DS.2260.46	BD Drawing Preparation & 3rd BD Submission to Consultants	11			24-Jan-17	09-Feb-17	0%		51																									
DS.2260.48	RSE Submission to BD	3			10-Feb-17	14-Feb-17	0%		51																									
DS.2260.50	BD Submission & Approval	48			14-Feb-17	12-Apr-17	0%		51																									
CSF Glass Wall Performance Testing																																		
Drawing Submission																																		
DS.2260.58	1st Shop Drawing Submission	11			24-Jan-17	09-Feb-17	0%		68																									
DS.2260.60	1st Shop Drawing Comment	11			10-Feb-17	23-Feb-17	0%		68																									
DS.2260.62	2nd Shop Drawing Submission	11			23-Feb-17	08-Mar-17	0%		68																									
Ordering & Production of Material																																		
Glass Production & Fabrication																																		
DS.2260.66	Coated Glass Production	48			18-Jan-17	18-Mar-17	0%		71																									
Curtain Wall glazed panel production and Fabrication																																		
DS.2260.70	Die Making	48			13-Dec-16	13-Feb-17	0%		93																									
DS.2260.72	PVF2 Paint Ordering	49			13-Dec-16	14-Feb-17	0%		109																									
DS.2260.74	Aluminium Extrusion Production	17			14-Feb-17	04-Mar-17	0%		93																									
Bulk Ordering & Production of Material																																		
Curtain Wall glazed panel production and Fabrication																																		
DS.2260.92	Die Making	48			13-Dec-16	13-Feb-17	0%		136																									
DS.2260.94	PVF2 Paint Ordering	49			13-Dec-16	14-Feb-17	0%		152																									
DS.2260.96	Aluminium Extrusion Production	17			14-Feb-17	04-Mar-17	0%		136																									
Glass Production & Fabrication																																		
DS.2260.102	Coated Glass Production	48			18-Jan-17	18-Mar-17	0%		114																									
(Redland) Precast Facade for M+ Podium & CSF Bldg																																		
(Redland) General Submission																																		
(Redland) Project Quality Plan																																		
DS.3240	PQP - 2nd Submission and Approval	12			30-Nov-16	13-Dec-16	0%		-20																									
DS.3250	PQP - Approval of Project Quality Plan	0				13-Dec-16	0%		-23																									
(Redland) Production Method Statement																																		
DS.3290	PMS - 2nd Submission and Approval	12			30-Nov-16	13-Dec-16	0%		-20																									
DS.3300	PMS - Approval of Production Method Statement	0				13-Dec-16	0%		-23																									
(Redland) Drawing Submission and Approval																																		
DS.3340	2nd Submission and Approval	12			30-Nov-16	13-Dec-16	0%		623																									
DS.3350	Approval of Schematic Design Drawings	0				13-Dec-16	0%		773																									
(Redland) BD Submission and Approval																																		
(Redland) BD Submission																																		
DS.3420	BD Comments and review	36			30-Nov-16	13-Jan-17	0%		599																									
DS.3410	BD Submission	0			30-Nov-16		0%		741																									
DS.3430	Approval of BD Submission	0				13-Jan-17	0%		742																									
(Redland) Fixing Layout for ARUP's Onward Submission to BD																																		
DS.3450	BD Comments and review	36			30-Nov-16	13-Jan-17	0%		599																									
DS.3440	BD Submission	0			30-Nov-16		0%		741																									



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Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017					February 2017					March 2017				
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05						
DS.3460	Approval of BD Submission	0				13-Jan-17	0%		742																									
(Redland) Shop Drawings																																		
DS.3500	2nd Submission and Approval	12			14-Dec-16	29-Dec-16	0%		-20																									
DS.3510	Approval of Shop Drawings	0				29-Dec-16	0%		-25																									
(Redland) Bulk Production, Fabrication and Delivery																																		
DS.3520	Procurements of Materials	90			30-Dec-16	22-Apr-17	0%		-20																									
DS.3530	Fabrication of Precast Panels	120			25-Feb-17	24-Jul-17	0%		-20																									
Structural Steel Trusses																																		
DS.1130	Steel Tuss - Procurement, Fabrication & Delivery	150			29-Jan-16 A	15-Dec-16	90%		-77																									
Materials Procurements																																		
DS.1040	Steel Tuss - Procurement, Fabrication & Delivery	150	14-Feb-16	12-Jul-16	01-Oct-15 A	15-Dec-16	85%	-130	-77																									
Fabrication & Delivery To Site																																		
Temporary Support System for Trusses - Proprietary & Non Proprietary System																																		
DS.1040.68	Fabrication & Delivery of non-proprietary system	50			11-Jun-16 A	07-Dec-16	95%		-91																									
Hanger Column																																		
DS.1040.85	Fabrication of Hanger Column Suspended from RC	43			28-Nov-16 A	17-Dec-16	30%		-33																									
DS.1040.80	Fabrication of Hanger Column Suspended from mega Truss	43			28-Nov-16 A	17-Dec-16	30%		-17																									
DS.1040.86	Delivery of hanger column	0			18-Dec-16		0%		-38																									
Composite Column																																		
DS.1040.91	Composite Column Fabrication	34			02-Jan-16 A	02-Dec-16	98%		-69																									
Steel Truss Support Fabrication																																		
DS.1090	Steel Truss Support Fabrication for Truss 4 (*C94 & *C96)	21			19-Aug-16 A	09-Dec-16	99%		-20																									
Steel Truss Support Delivery to Site																																		
DS.1090.10	Steel Truss Support for Truss # 3 (*C85 & C86)	0			18-Nov-16 A		100%																											
DS.1110.10	Steel Truss Support for Truss # 4 (*C94 & *C96)	0			10-Dec-16		0%		-23																									
Steel Truss Members Fabrication																																		
DS.1080	Steel Truss Fabrication for Truss # 3	69			23-Apr-16 A	14-Dec-16	97%		-66																									
DS.1100	Steel Truss Fabrication for Truss # 4	69			09-May-16 A	14-Dec-16	95%		-15																									
Steel Truss Members Delivery to Site																																		
DS.1140.10	Steel Truss Members for Truss # 5 (1st Delivery)	0			25-Nov-16 A		100%																											
DS.1070.10	Steel Truss Members for Truss # 1	0			30-Nov-16		0%		-92																									
DS.1080.10	Steel Truss Members for Truss # 2	0			30-Nov-16		0%		-79																									
DS.1100.10	Steel Truss Members for Truss # 3	0			15-Dec-16		0%		-29																									
DS.1120.10	Steel Truss Members for Truss # 4	0			15-Dec-16		0%		-17																									
Building Services																																		
MVAC																																		
DS.3070	MVAC - Shop Drawings, Materials & Method Statements Submi	120	01-Dec-15	29-Mar-16	01-Dec-15 A	17-Feb-17	44%	-264	-37																									
DS.3080	MVAC - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-Apr-16 A	06-Mar-17	33%	-253	-37																									
DS.3090	MVAC - Incorporate Comments & Resubmit	30	29-Apr-16	28-May-16	15-Apr-16 A	22-Mar-17	13%	-243	-37																									
DS.3100	MVAC - CA Review & Approval	30	29-May-16	27-Jun-16	02-May-16 A	08-Apr-17	26%	-233	-37																									
DS.3110	MVAC - Procurement and Delivery	180	28-Jun-16	24-Dec-16	01-Sep-16 A	19-May-17	8%	-146	-50																									
Electrical and ELV Systems																																		
DS.4120	Elect & ELV Systems - Shop Drawings and Materials Submissior	120	01-Dec-15	29-Mar-16	01-Dec-15 A	21-Jan-17	57%	-244	-32																									
DS.4130	Elect & ELV Systems - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-Apr-16 A	10-Feb-17	48%	-233	-32																									

(3MRP-14) Three Months Rolling Programme Status at 30 Nov 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017				February 2017		March 2017			
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05	
DS.4140	Elect & ELV Systems - Incorporate Comments & Resubmit	30	29-Apr-16	28-May-16	15-Apr-16 A	27-Feb-17	27%	-223	-32																				
DS.4150	Elect & ELV Systems - CA Review & Approval	30	29-May-16	27-Jun-16	16-May-16 A	15-Mar-17	21%	-213	-32																				
DS.4160	Elect & ELV Systems - Procurement and Delivery	150	28-Jun-16	24-Nov-16	15-Dec-16	13-May-17	0%	-170	-44																				
Fire Services																													
DS.4010	FS - Shop Drawings and Materials Submission and Approval	120	01-Dec-15	29-Mar-16	01-Dec-15 A	04-Feb-17	45%	-253	-41																				
DS.4020	FS - CA Review & Comments	30	30-Mar-16	28-Apr-16	15-Apr-16 A	21-Feb-17	40%	-242	-41																				
DS.4030	FS - Incorporate Comments & Resubmit	30	29-Apr-16	28-May-16	22-Apr-16 A	09-Mar-17	17%	-232	-41																				
DS.4040	FS - CA Review & Approval	30	29-May-16	27-Jun-16	16-May-16 A	25-Mar-17	23%	-222	-41																				
DS.4050	FS - Procurement and Delivery	150	28-Jun-16	13-Jan-17	26-Dec-16	24-May-17	0%	-131	-55																				
Plumbing and Drainage																													
DS.3010	Plumbing & Drainage - Shop Drawings, Materials & Method Stat	90	31-Dec-15	29-Mar-16	30-Dec-15 A	21-Jan-17	42%	-244	-25																				
DS.3020	Plumbing & Drainage - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-Apr-16 A	10-Feb-17	39%	-233	-17																				
DS.3030	Plumbing & Drainage - Incorporate Comments & Resubmit	30	29-Apr-16	28-May-16	14-Apr-16 A	27-Feb-17	14%	-223	-17																				
DS.3040	Plumbing & Drainage - CA Review & Approval	30	29-May-16	27-Jun-16	02-May-16 A	15-Mar-17	25%	-213	-17																				
DS.3050	Plumbing & Drainage - Procurement and Delivery	150	28-Jun-16	24-Nov-16	31-Oct-16 A	28-Apr-17	2%	-155	-29																				
Mechanical and Lifting Platform																													
DS.5210	Lifting Platform - Shop Drawings, Materials & Method Statemen	90	01-Dec-15	28-Feb-16	01-Dec-15 A	27-Dec-16	70%	-246	571																				
DS.5220	Lifting Platform - CA Review & Comments	30	29-Feb-16	29-Mar-16	15-Apr-16 A	13-Jan-17	30%	-237	571																				
DS.5230	Lifting Platform - Incorporate Comments & Resubmit	30	30-Mar-16	28-Apr-16	30-Apr-16 A	02-Feb-17	30%	-226	571																				
DS.5240	Lifting Platform - CA Review & Approval	30	29-Apr-16	28-May-16	16-May-16 A	18-Feb-17	3%	-216	571																				
Lifts and Escalator																													
DS.5110	Lift & Escalator - Shop Drawings, Materials & Method Statemen	90	01-Dec-15	28-Feb-16	01-Dec-15 A	12-Jan-17	54%	-259	-8																				
DS.5120	Lift & Escalator - CA Review & Comments	30	29-Feb-16	29-Mar-16	15-Apr-16 A	01-Feb-17	51%	-250	17																				
DS.5130	Lift & Escalator - Incorporate Comments & Resubmit	30	30-Mar-16	28-Apr-16	30-Apr-16 A	17-Feb-17	31%	-239	17																				
DS.5140	Lift & Escalator- CA Review & Approval	30	29-Apr-16	28-May-16	16-May-16 A	06-Mar-17	20%	-229	17																				
Art Lift (LT-11 & LT-13)																													
DS.5020	Art Lift - Shop Drawings, Materials & Method Statements Subm	90	01-Dec-15	28-Feb-16	01-Dec-15 A	20-Dec-16	75%	-242	-18																				
DS.5025	Art Lift - CA Review & Comments	30	29-Feb-16	29-Mar-16	15-Apr-16 A	29-Dec-16	75%	-225	-18																				
DS.5030	Art Lift - Incorporate Comments & Resubmit	54	30-Mar-16	28-Apr-16	03-Oct-16 A	16-Jan-17	75%	-214	-18																				
DS.5040	Art Lift - CA Review & Approval	30	29-Apr-16	28-May-16	17-Jan-17	23-Feb-17	0%	-220	-18																				
DS.5050	Art Lift - Procurement and Delivery	300	29-May-16	24-Mar-17	24-Feb-17	20-Dec-17	0%	-271	-21																				
ABWF and Fitout																													
Ceramic Tile																													
DS.6010	Ceramic Tile - Shop Drawings, Materials Sample Submission	90	30-Nov-15	27-Feb-16	30-Nov-15 A	09-Dec-16	90%	-233	-10																				
DS.6020	Ceramic Tile - CA Review & Comments	30	28-Feb-16	28-Mar-16	10-Dec-16	17-Jan-17	0%	-241	-10																				
DS.6030	Ceramic Tile - Incorporate Comments & Resubmit	30	29-Mar-16	27-Apr-16	18-Jan-17	24-Feb-17	0%	-246	-10																				
DS.6040	Ceramic Tile - CA Review & Approval	30	28-Apr-16	27-May-16	25-Feb-17	31-Mar-17	0%	-252	-10																				
Soft and Hard Landscaping																													
DS.7000	Landscaping - Award Specialist Subcontractor	0	18-Apr-16		30-Nov-16		0%	-226	9																				
DS.7010	Landscaping - Shop Drawings, Materials & Method Statements	90	18-Apr-16	16-Jul-16	30-Nov-16	21-Mar-17	0%	-203	8																				
Design Detailing / Buildability Co-ordination																													
Spatial Coordination for BIM / CSD / CBWD																													
Basement																													
B00.0010	Preparation and submission for BIM / CSD / CBWD at B1/F (Tea	60	01-Oct-15	29-Nov-15	01-Oct-15 A	16-Dec-16	95%	-310	-51																				

(3MRP-14) Three Months Rolling Programme Status at 30 Nov 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017					February 2017					March 2017									
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05											
B00.0030	Review, resubmission and approval for BIM / CSD / CBWD at B1	30	30-Nov-15	29-Dec-15	30-Nov-15 A	16-Dec-16	90%	-287	-39	B00.0030, Review, resubmission and approval for BIM / CSD / CBWD at B1																													
M+ Podium																																							
B00.0040	Preparation and submission for BIM / CSD / CBWD at G/F (Tear	60	30-Nov-15	28-Jan-16	30-Nov-15 A	17-Dec-16	80%	-263	-74	B00.0040, Preparation and submission for BIM / CSD / CBWD at G/F (Tear																													
B00.0080	Preparation and submission for BIM / CSD / CBWD at 1M/F (Te	60	29-Jan-16	28-Mar-16	30-Jul-16 A	17-Dec-16	90%	-218	-74	B00.0080, Preparation and submission for BIM / CSD / CBWD at 1M/F (Te																													
B00.0050	Preparation and submission for BIM / CSD / CBWD at 1/F (Tear	60	30-Nov-15	28-Jan-16	15-Aug-16 A	17-Dec-16	80%	-263	-51	B00.0050, Preparation and submission for BIM / CSD / CBWD at 1/F (Tear																													
B00.0100	Review, resubmission and approval for BIM / CSD / CBWD at 1F	30	29-Mar-16	27-Apr-16	15-Aug-16 A	17-Dec-16	20%	-193	-16	B00.0100, Review, resubmission and approval for BIM / CSD / CBWD at 1F																													
B00.0090	Preparation and submission for BIM / CSD / CBWD at 2/F (Tear	60	29-Jan-16	28-Mar-16	01-Nov-16 A	30-Dec-16	50%	-227	-51	B00.0090, Preparation and submission for BIM / CSD / CBWD at 2/F (Tear																													
B00.0070	Review, resubmission and approval for BIM / CSD / CBWD at 1/	30	29-Jan-16	27-Feb-16	14-Nov-16 A	24-Dec-16	20%	-245	-39	B00.0070, Review, resubmission and approval for BIM / CSD / CBWD at 1/																													
B00.0060	Review, resubmission and approval for BIM / CSD / CBWD at G,	30	29-Jan-16	27-Feb-16	30-Nov-16	06-Jan-17	0%	-254	-14	B00.0060, Review, resubmission and approval for BIM / CSD / CBWD at G,																													
B00.0110	Review, resubmission and approval for BIM / CSD / CBWD at 2/	30	29-Mar-16	27-Apr-16	30-Nov-16	06-Jan-17	0%	-207	-26	B00.0110, Review, resubmission and approval for BIM / CSD / CBWD at 2/																													
B00.0120	Preparation and submission for BIM / CSD / CBWD at 3/F (Tear	60	29-Mar-16	27-May-16	30-Nov-16	14-Feb-17	0%	-213	-74	B00.0120, Preparation and submission for BIM / CSD / CBWD at 3/F (Tear																													
B00.0130	Review, resubmission and approval for BIM / CSD / CBWD at 3/	30	28-May-16	26-Jun-16	15-Feb-17	21-Mar-17	0%	-219	-68	B00.0130, Review, resubmission and approval for BIM / CSD / CBWD at 3/																													
M+ Tower																																							
B6B.0000	Preparation and submission for BIM / CSD / CBWD at 4/F (Tear	45	29-Mar-16	12-May-16	30-Nov-16	24-Jan-17	0%	-210	-51	B6B.0000, Preparation and submission for BIM / CSD / CBWD at 4/F (Tear																													
B6B.0030	Preparation and submission for BIM / CSD / CBWD at 5/F (Tear	45	28-May-16	11-Jul-16	30-Nov-16	24-Jan-17	0%	-162	-74	B6B.0030, Preparation and submission for BIM / CSD / CBWD at 5/F (Tear																													
B6B.0070	Preparation and submission for BIM / CSD / CBWD at 6/F (Tear	45	12-Jul-16	25-Aug-16	09-Jan-17	04-Mar-17	0%	-155	-74	B6B.0070, Preparation and submission for BIM / CSD / CBWD at 6/F (Tear																													
B6B.0020	Preparation and submission for BIM / CSD / CBWD at 10/F (Te	45	13-May-16	26-Jun-16	09-Jan-17	04-Mar-17	0%	-205	-51	B6B.0020, Preparation and submission for BIM / CSD / CBWD at 10/F (Te																													
B6B.0010	Review, resubmission and approval for BIM / CSD / CBWD at 4/	20	13-May-16	01-Jun-16	25-Jan-17	20-Feb-17	0%	-214	-10	B6B.0010, Review, resubmission and approval for BIM / CSD / CBWD at 4/																													
B6B.0060	Review, resubmission and approval for BIM / CSD / CBWD at 5/	20	12-Jul-16	31-Jul-16	25-Jan-17	20-Feb-17	0%	-166	2	B6B.0060, Review, resubmission and approval for BIM / CSD / CBWD at 5/																													
B6B.0110	Preparation and submission for BIM / CSD / CBWD at 7/F (Tear	45	26-Aug-16	09-Oct-16	17-Feb-17	11-Apr-17	0%	-150	-74	B6B.0110, Preparation and submission for BIM / CSD / CBWD at 7/F (Tear																													
B6B.0050	Preparation and submission for BIM / CSD / CBWD at 11/F (Te	45	27-Jun-16	10-Aug-16	17-Feb-17	11-Apr-17	0%	-199	-51	B6B.0050, Preparation and submission for BIM / CSD / CBWD at 11/F (Te																													
CSF Block																																							
B20.0280	Preparation and submission for BIM / CSD / CBWD at G/F (Tear	45	13-Feb-16	28-Mar-16	15-Aug-16 A	16-Jan-17	10%	-240	17	B20.0280, Preparation and submission for BIM / CSD / CBWD at G/F (Tear																													
B20.0300	Preparation and submission for BIM / CSD / CBWD at 1-5/F (Te	60	29-Mar-16	27-May-16	01-Nov-16 A	17-Jan-17	20%	-192	17	B20.0300, Preparation and submission for BIM / CSD / CBWD at 1-5/F (Te																													
B20.0310	Review, resubmission and approval for BIM / CSD / CBWD at 1	30	28-May-16	26-Jun-16	01-Nov-16 A	24-Dec-16	20%	-150	113	B20.0310, Review, resubmission and approval for BIM / CSD / CBWD at 1																													
B20.0320	Preparation and submission for BIM / CSD / CBWD at 6/F (Tear	45	28-May-16	11-Jul-16	31-Dec-16	25-Feb-17	0%	-187	17	B20.0320, Preparation and submission for BIM / CSD / CBWD at 6/F (Tear																													
B20.0290	Review, resubmission and approval for BIM / CSD / CBWD at G,	20	29-Mar-16	17-Apr-16	17-Jan-17	11-Feb-17	0%	-244	76	B20.0290, Review, resubmission and approval for BIM / CSD / CBWD at G,																													
B20.0340	Preparation and submission for BIM / CSD / CBWD at 7/F (Tear	45	12-Jul-16	25-Aug-16	10-Feb-17	03-Apr-17	0%	-180	17	B20.0340, Preparation and submission for BIM / CSD / CBWD at 7/F (Tear																													
B20.0330	Review, resubmission and approval for BIM / CSD / CBWD at 6/	20	12-Jul-16	31-Jul-16	27-Feb-17	21-Mar-17	0%	-191	91	B20.0330, Review, resubmission and approval for BIM / CSD / CBWD at 6/																													
Interfacing Car Park and Sewage Pumping Station (SPS)																																							
D01.0010	(SPS) BIM / CSD / CBWD - B2-UGF Preparation, submission, re	45	13-Feb-16	27-Feb-16	26-Jul-16 A	17-Dec-16	75%	-240	-73	D01.0010, (SPS) BIM / CSD / CBWD - B2-UGF Preparation, submission, re																													
D02.0000	(SPS) BIM / CSD / CBWD - B1/F & G/F Preparation, submission	15	01-Oct-15	14-Nov-15	19-Dec-16	07-Jan-17	0%	-338	-73	D02.0000, (SPS) BIM / CSD / CBWD - B1/F & G/F Preparation, submission																													
D02.0030	(ICP) BIM / CSD / CBWD - G/F & R/F Preparation, submission, i	45	30-Dec-15	28-Jan-16	03-Jan-17	27-Feb-17	0%	-318	65	D02.0030, (ICP) BIM / CSD / CBWD - G/F & R/F Preparation, submission, i																													
Visual Mock-Up (VMU)																																							
VMU Preliminary																																							
A00.3610	VMU Works Period (Contract requirement of 200 calendar days	169	01-Oct-15	17-Apr-16	01-Oct-15 A	27-Dec-16	80%	-208	50	VMU Works Period (Contract requirement of 200 calendar days																													
VMU Statutory Submission & Inspection																																							
VMU FSD (Fire Service)																																							
A00.3500	VMU - FSD's Inspection & Fire Certificate Issuance	12	18-Mar-16	01-Apr-16	31-Oct-16 A	10-Dec-16	5%	-208	50	A00.3500, VMU - FSD's Inspection & Fire Certificate Issuance, VMU - F																													
VMU BD (OP)																																							
A00.3510	VMU - Submission of BA14	0	02-Apr-16		11-Dec-16		0%	-253	66	VMU - Submission of BA14, VMU - Submission of BA14, 11-Dec-16																													
A00.3520	VMU - BD Inspection	12	02-Apr-16	17-Apr-16	12-Dec-16	27-Dec-16	0%	-208	50	A00.3520, VMU - BD Inspection																													
A00.3530	VMU - M+ OP	0		17-Apr-16		27-Dec-16	0%	-254	63	VMU - M+ OP, VMU - M+ OP,																													

Last Date for Exercising Provisional Sum & Optional Items (Refer Annex B to Preamble) (To be revised

(3MRP-14) Three Months Rolling Programme Status at 30 Nov 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017				February 2017			March 2017	
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05
AEL North - B1/F Slab for Truss T1, T2 & T5 Erection																												
C10.0120	AEL North - Construct Found Space Basement Wall and Cols to	15	02-Sep-16	23-Sep-16	30-Nov-16	16-Dec-16	0%	-64	524	C10.0120, AEL North - Construct Found Space Basement Wall and																		
AEL North - B1/F Slab for CSF & RDE (North of GL 1)																												
B10.3150	AEL North - Wall, Column & B1 Slab (Portion B1H) (Portion A10	45	11-Oct-16	05-Dec-16	14-Nov-16 A	30-Dec-16	20%	-20	-39	B10.3150, AEL North - Wall, Column & B1 Slab (Portion																		
B10.3170	AEL North - Wall, Column & B1 Slab (Portion B1K) (Portion A12	12	25-Oct-16	08-Nov-16	11-Jan-17	24-Jan-17	0%	-63	-47	B10.3170, AEL North - Wall, Colum																		
B10.3260	Complete Wall, Column & B1 Slab (exclude AEL Zone & East of	0		05-Dec-16		24-Jan-17	0%	-50	-58	◆ Complete Wall, Column & B1 Slab (
C10.0385	AEL North - External Wall & B1 Slab GL 1'-7'/J' within M12 (Del	16	29-Dec-16	17-Jan-17	25-Jan-17	15-Feb-17	0%	-22	-47	C10.0385, AEL N																		
AEL South - B1/F Slab for DCS to facilitate Truss Erection																												
B10.2115	AEL South (DCS) - Remove 2nd Layer Struts at 0.0mPD of DCS	8	29-Apr-16	12-May-16	01-Nov-16 A	26-Nov-16 A	100%	-133		B10.2115, AEL South (DCS) - Remove 2nd Layer Struts at 0.0mPD of DCS Plant R																		
B6A.2140	AEL South - Plant Room - RC Works to +2.7mPD	53	22-Feb-17	28-Apr-17	21-Feb-17	28-Apr-17	0%	1	17																			
AEL South - RC Structures Prior to Area M14 H/O																												
B10.3315	AEL South - Construct Walls, Column & Staircases to G/F Level	27	29-Apr-16	13-Jun-16	24-Oct-16 A	30-Dec-16	20%	-141	138	B10.3315, AEL South - Construct Walls, Column & Sta																		
B10.3310	AEL South - Construct Basement Road Wall between PC 109 &	17	29-Apr-16	24-May-16	30-Nov-16	19-Dec-16	0%	-145	124	B10.3310, AEL South - Construct Basement Road Wall between																		
B10.3290	AEL South - Construct Basement Road Wall between PC 96 & P	17	21-Apr-16	14-Jun-16	30-Nov-16	19-Dec-16	0%	-132	124	B10.3290, AEL South - Construct Basement Road Wall between																		
B10.3320	AEL South - Construct G/F slab between PC 105, 109 & 116	16	03-Jun-16	27-Jun-16	16-Dec-16	06-Jan-17	0%	-136	124	B10.3320, AEL South - Construct G/F slab betwe																		
B10.3300	AEL South - Construct External Wall between PC 96 & PC105 tc	25	21-Apr-16	28-May-16	20-Dec-16	20-Jan-17	0%	-167	146	B10.3300, AEL South - Construct Ext																		
LG/F Slab - Walls, Columns & LG/F Slabs																												
AEL North - CSF & RDE Zone																												
B10.3650	AEL North - Wall, Column & LG/F Slab (Portion A6, A7, A10, A1	38	03-Jan-17	18-Feb-17	16-Feb-17	31-Mar-17	0%	-35	-47																			
Podium Super-Structures																												
Trusses																												
AEL Tunnel Zone -Trusses 1																												
C10.0150	AEL Tunnel Zone - Erection of Temp Working Platform and Fals	50	25-Jun-16	24-Aug-16	12-Jul-16 A	16-Dec-16	85%	-95	-91	C10.0150, AEL Tunnel Zone - Erection of Temp Working Platform																		
C10.0155	AEL Tunnel Zone - Truss 1 Construction Summary	117	25-Aug-16	27-Jan-17	17-Dec-16	16-May-17	0%	-84	-89																			
C10.0160	AEL Tunnel Zone - Truss 1 Concreting of 1st pour of bottom ch	12	25-Aug-16	10-Sep-16	17-Dec-16	03-Jan-17	0%	-92	-91	C10.0160, AEL Tunnel Zone - Truss 1 Concreting of																		
C10.0185	AEL Tunnel Zone - Truss 1 install bottom steel plates	24	12-Sep-16	20-Oct-16	04-Jan-17	03-Feb-17	0%	-85	-89	C10.0185, AEL Tunnel Zone																		
C10.0190	AEL Tunnel Zone - Truss 1 install temp platform, top nodes & ir	24	21-Oct-16	18-Nov-16	04-Feb-17	03-Mar-17	0%	-84	-89	C10.																		
C10.0195	AEL Tunnel Zone - Truss 1 Concreting of 2nd pour of bottom ch	15	02-Nov-16	18-Nov-16	15-Feb-17	03-Mar-17	0%	-84	-89	C10.																		
AEL Tunnel Zone -Trusses 2																												
C10.0162	AEL Tunnel Zone - Erection of Temp Working Platform and Fals	50	13-Jul-16	09-Sep-16	12-Jul-16 A	16-Dec-16	85%	-81	-79	C10.0162, AEL Tunnel Zone - Erection of Temp Working Platform																		
C10.0170	AEL Tunnel Zone - Truss 2 Concreting of 1st pour of bottom ch	12	09-Sep-16	26-Sep-16	27-Dec-16	10-Jan-17	0%	-86	-91	C10.0170, AEL Tunnel Zone - Truss 2 Concret																		
C10.0165	AEL Tunnel Zone - Truss 2 Construction Summary	125	09-Sep-16	21-Feb-17	27-Dec-16	01-Jun-17	0%	-80	-91																			
C10.0198	AEL Tunnel Zone - Truss 2 install bottom steel plates	24	27-Sep-16	02-Nov-16	11-Jan-17	10-Feb-17	0%	-80	-91	C10.0198, AEL Tunne																		
C10.0200	AEL Tunnel Zone - Truss 2 install temp. platform, top nodes & i	24	03-Nov-16	30-Nov-16	11-Feb-17	10-Mar-17	0%	-80	-91																			
C10.0205	AEL Tunnel Zone - Truss 2 Concreting of 2nd pour of bottom ch	15	14-Nov-16	30-Nov-16	22-Feb-17	10-Mar-17	0%	-80	-91																			
AEL Tunnel Zone -Trusses 5																												
C10.0172	AEL Tunnel Zone - Erection of Temp Working Platform and Fals	50	13-Jul-16	09-Sep-16	12-Jul-16 A	08-Dec-16	95%	-74	-76	C10.0172, AEL Tunnel Zone - Erection of Temp Working Platform and Fa																		
C10.0180	AEL Tunnel Zone - Truss 5 Concreting of 1st pour of bottom ch	12	19-Sep-16	07-Oct-16	30-Nov-16 A	17-Dec-16	5%	-60	-71	C10.0180, AEL Tunnel Zone - Truss 5 Concreting of 1st pour of b																		
C10.0175	AEL Tunnel Zone - Truss 5 Construction Summary	109	19-Sep-16	04-Feb-17	30-Nov-16	13-Apr-17	0%	-57	-71																			
C10.0215	AEL Tunnel Zone - Truss 5 install bottom steel plates	24	08-Oct-16	09-Nov-16	19-Dec-16	18-Jan-17	0%	-57	-71	C10.0215, AEL Tunnel Zone - Truss 5 in																		
C10.0220	AEL Tunnel Zone - Truss 5 install temp. platform, top nodes & i	24	10-Nov-16	07-Dec-16	19-Jan-17	18-Feb-17	0%	-57	-71	C10.0220, AEL																		
C10.0225	AEL Tunnel Zone - Truss 5 Concreting of 2nd pour of bottom ch	15	21-Nov-16	07-Dec-16	02-Feb-17	18-Feb-17	0%	-57	-71	C10.0225, AEL																		
C10.0250	AEL Tunnel Zone - Truss 5 install top beam steel plates	18	08-Dec-16	30-Dec-16	20-Feb-17	11-Mar-17	0%	-57	-71																			
C10.0280	AEL Tunnel Zone - Truss 5 Concreting of inclined member	17	08-Dec-16	29-Dec-16	20-Feb-17	10-Mar-17	0%	-57	-71																			

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										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05	
AEL South - Trusses 3																													
B6A.1999	AEL Tunnel Zone - Construct Composite/RC Columns for Truss	20			08-Aug-16 A	12-Dec-16	90%		-40	AEL Tunnel Zone - Construct Composite/RC Columns for Truss T3, AE																			
B6A.2000	AEL South - Erection of Temp Working Platform and Falsework	46	20-Jul-16	15-Sep-16	31-Oct-16 A	24-Dec-16	50%	-82	-40	B6A.2000, AEL South - Erection of Temp Working Platform																			
B6A.2030	AEL South - Truss 3 Concreting of 1st pour of bottom chord (75	12	17-Sep-16	04-Oct-16	27-Dec-16	10-Jan-17	0%	-80	-38	B6A.2030, AEL South - Truss 3 Concreting of																			
B6A.2020	AEL South - Truss 3 Construction Summary	144	17-Sep-16	21-Mar-17	27-Dec-16	23-Jun-17	0%	-75	-47																				
B6A.2045	AEL South - Truss 3 install bottom steel plates	24	07-Oct-16	08-Nov-16	11-Jan-17	10-Feb-17	0%	-75	-38	B6A.2045, AEL South																			
B6A.2050	AEL South - Truss 3 install temp. platform, top nodes & inclin	24	09-Nov-16	06-Dec-16	11-Feb-17	10-Mar-17	0%	-75	-38																				
B6A.2055	AEL South - Truss 3 Concreting of 2nd pour of bottom chord	15	19-Nov-16	06-Dec-16	22-Feb-17	10-Mar-17	0%	-75	-38																				
AEL South - Trusses 4																													
B6A.2024	AEL Tunnel Zone - Construct Composite Columns for Truss T4	21			08-Aug-16 A	16-Dec-16	85%		-40	AEL Tunnel Zone - Construct Composite Columns for Truss T4, AE																			
B6A.2025	AEL South - Erection of Temp Working Platform and Falsework	46	02-Aug-16	29-Sep-16	31-Oct-16 A	28-Dec-16	50%	-73	-40	B6A.2025, AEL South - Erection of Temp Working Platfor																			
B6A.2040	AEL South - Truss 4 Concreting of 1st pour of bottom chord (75	12	30-Sep-16	20-Oct-16	07-Jan-17	20-Jan-17	0%	-76	-47	B6A.2040, AEL South - Truss 4 Concre																			
B6A.2035	AEL South - Truss 4 Construction Summary	105	30-Sep-16	14-Feb-17	07-Jan-17	19-May-17	0%	-75	-47																				
B6A.2058	AEL South - Truss 4 install bottom steel plates	24	21-Oct-16	18-Nov-16	21-Jan-17	21-Feb-17	0%	-75	-47	B6A.2058, A																			
B6A.2060	AEL South - Truss 4 install temp. platform, top nodes & inclin	24	19-Nov-16	16-Dec-16	22-Feb-17	21-Mar-17	0%	-75	-47																				
G/F Slabs - Walls, Columns & G/F Slab																													
AEL North																													
B20.0050	Podium G/F Portion GF2 - Wall, Column & G/F slab (GL 1-4/A-I	23	25-Oct-16	21-Nov-16	12-Oct-16 A	07-Jan-17	30%	-38	-33	B20.0050, Podium G/F Portion GF2 - Wall, Colur																			
B20.0005	Podium G/F Portion GF1 Tower Footprint - Wall, Column & Stru	14	12-Sep-16	03-Oct-16	14-Oct-16 A	30-Dec-16	30%	-73	-57	B20.0005, Podium G/F Portion GF1 Tower Footprint - V																			
B20.0015	Podium G/F Portion GF1 - Wall, Column & G/F slab (GL 4-7/A-I	23	19-Sep-16	24-Oct-16	17-Oct-16 A	15-Dec-16	50%	-45	-16	B20.0015, Podium G/F Portion GF1 - Wall, Column & G/F slab (GL																			
B20.0000	Podium G/F Portion GF1A - Wall, Column & G/F slab (GL 8-10/.	18	16-Aug-16	10-Sep-16	19-Dec-16	11-Jan-17	0%	-99	-48	B20.0000, Podium G/F Portion GF1A - Wall, C																			
B20.0052	Podium G/F Portion GF5 - Wall, Column & G/F slab (GL 1-4 / D	18	03-Jan-17	23-Jan-17	25-Jan-17	17-Feb-17	0%	-19	18	B20.0052, Podi																			
1/F Slabs - Walls, Columns & 1/F Slab																													
AEL North																													
B20.0425	Podium 1/F Tower Footprint (Block A) - Core Wall, Column & 1/	18	04-Oct-16	31-Oct-16	31-Dec-16	21-Jan-17	0%	-68	-57	B20.0425, Podium 1/F Tower Footpri																			
B20.0435	Podium 1/F Portion 1F1 - Wall, Column & 1/F Slab (GL1-5/A-D')	12	22-Nov-16	05-Dec-16	09-Jan-17	21-Jan-17	0%	-38	-33	B20.0435, Podium 1/F Portion 1F1 -																			
B20.0660	Podium 1/F Portion 1F2 - Wall, Column & 1/F Slab (GL1-5/E'-H')	11	24-Jan-17	08-Feb-17	18-Feb-17	02-Mar-17	0%	-19	56	B20.0																			
1M/F Slabs - Walls, Columns & 1M/F Structure																													
M+ Tower FootPrint																													
B20.0010	Podium 1M/F Tower Footprint (Block A) - Core Walls, Column &	18	01-Nov-16	21-Nov-16	23-Jan-17	15-Feb-17	0%	-68	-57	B20.0010, Podium																			
AEL North																													
B20.0100	Podium 1M/F Portion 1MFA - Wall, Column & 1MF Slab (1-4 / A	25	06-Dec-16	06-Jan-17	23-Jan-17	23-Feb-17	0%	-38	-33	B20.0100,																			
B20.0110	Podium 1M/F Portion 1MFB - Wall, Column & 1MF Slab (4-7 / A	18	07-Jan-17	27-Jan-17	24-Feb-17	16-Mar-17	0%	-38	-23																				
2/F Slabs - Walls, Columns & 2/F Slab																													
M+ Tower Footprint																													
B20.0020	Podium 2/F Tower Footprint (Block A) - Core Wall, Column & 2/	18	22-Nov-16	12-Dec-16	16-Feb-17	08-Mar-17	0%	-68	-57																				
AEL North Zone																													
B20.0120	Podium 2/F Portion 2FA - Wall, Column & 2/F Slab (GL 1-4 / A-	23	07-Jan-17	06-Feb-17	24-Feb-17	22-Mar-17	0%	-38	-33																				
SPS Structures (include Excavation)																													
D01.3010	SPS - Construct Basement Structure	100	27-Apr-16	26-Aug-16	25-Jul-16 A	19-Jan-17	13%	-119	-83	D01.3010, SPS - Construct Basement																			
ICP Structures (include Excavation)																													
A3980	ICP - ELS works (Provisional)	110	22-Feb-16	26-Jul-16	20-May-16	04-Feb-17	45%	-140	-65	A3980, ICP - ELS works (P																			
A4490	ICP - Structure works	244	28-Jul-16	24-Jun-17	25-Jul-16 A	03-Oct-17	17%	-65	-65																				

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										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05		
Building Services																														
M+ Basement Building Service																														
B2/F MEP																														
First Fix																														
B40.9060	B2/F - Building Services - Zone D - 1st Fix	40	11-Jan-17	01-Mar-17	18-Jan-17	08-Mar-17	0%	-6	-39																					
B40.8995	B2/F - Building Services - 1st Fix - Summary	146	05-Oct-16	24-Jul-17	21-Jan-17	22-Jul-17	0%	1	21																					
B40.8985	Early Access for Building Services (1st Fix)	0	05-Oct-16		21-Jan-17		0%	-108	123																					
B40.8990	B2/F - Building Services - Zone A - 1st Fix	60	05-Oct-16	14-Dec-16	21-Jan-17	04-Apr-17	0%	-89	96																					
B40.9030	B2/F - Building Services - Zone C - 1st Fix	40	06-Dec-16	24-Jan-17	06-Feb-17	23-Mar-17	0%	-47	92																					
B40.9025	B2/F - Building Services - Zone B - 1st Fix	60	19-Jan-17	01-Apr-17	23-Feb-17	10-May-17	0%	-27	57																					
B1/F MEP																														
First Fix																														
B40.9330	Early Access for Building Services (1st Fix)	0	27-Dec-16		25-Jan-17		0%	-29	175																					
B40.9335	B1/F - Building Services - Zone A - 1st Fix	60	27-Dec-16	10-Mar-17	25-Jan-17	08-Apr-17	0%	-24	139																					
SPS MEP																														
D01.3020	SPS - Installation of Sewage/Drainage Pipes and Manholes	70	27-Aug-16	19-Nov-16	20-Jan-17	19-Apr-17	0%	-119	-83																					
ABWF																														
M+ Basement ABWF																														
B2/F ABWF																														
B30.0006	B2/F Zone A - Builder's Work	42	15-Aug-16	04-Oct-16	30-Nov-16	20-Jan-17	0%	-89	63																					
B30.0004	Early Access date for Builders Works at B2/F M+ Basement	0	15-Aug-16		30-Nov-16		0%	-107	80																					
B30.0020	B2/F Zone C - Builder's Work	42	11-Oct-16	28-Nov-16	12-Dec-16	04-Feb-17	0%	-53	37																					
B30.0010	B2/F Zone B - Builder's Work	42	28-Nov-16	18-Jan-17	31-Dec-16	22-Feb-17	0%	-27	57																					
B30.0040	B2/F Zone E - Builder's Work	42	27-Sep-16	16-Nov-16	07-Jan-17	28-Feb-17	0%	-83	52																					
B30.0050	B2/F Zone F - Builder's Work	42	09-Nov-16	29-Dec-16	25-Jan-17	17-Mar-17	0%	-63	25																					
B30.0030	B2/F Zone D - Builder's Work	42	11-Jan-17	03-Mar-17	07-Feb-17	27-Mar-17	0%	-20	13																					
B1/F ABWF																														
B30.1002	Early Access date for Builders Works at B1/F M+ Basement	0	28-Nov-16		05-Jan-17		0%	-38	159																					
B30.1004	B1/F Zone A - Builder's Work	42	28-Nov-16	18-Jan-17	05-Jan-17	25-Feb-17	0%	-30	127																					
SPS ABWF																														
D01.3030	SPS - ABWF	70	21-Nov-16	16-Feb-17	20-Jan-17	19-Apr-17	0%	-49	-83																					
External Works																														
M+ External Works																														
Utilities																														
Drainage																														
EW1040	Construct the DN150 storm drain within At-grade Road (M26)	72	12-Nov-16	10-Feb-17	30-Nov-16	28-Feb-17	0%	-15	427																					
Storm Drain DN600 at Portion M45																														
Storm Drain along Gridline D'-E'/1'-2'																														
EW1710	Excavate trench for DN600 and install shoring	10			07-Nov-16 A	17-Nov-16 A	100%																							
EW1730	Lay down DN600 pipe between WHC6_1c & MHS3.4	7			16-Nov-16 A	24-Nov-16 A	100%																							
EW1740	Backfill and reinstate pavement	2			25-Nov-16 A	28-Nov-16 A	100%																							
Storm Drain along Gridline E'-G' / 1'-2'																														
EW1755	Excavate Trial trench for existng Underground Utilities	14			30-Nov-16	15-Dec-16	0%		239																					

█ Excavate trench for DN600 and install shoring, Excavate trench for DN600 and install shoring
█ Lay down DN600 pipe between WHC6_1c & MHS3.4, Lay down DN600 pipe between WHC6_1c & MHS3.4
█ Backfill and reinstate pavement, Backfill and reinstate pavement
█ Excavate Trial trench for existng Underground Utilities

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										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05						
EW1150	PIW Contractor Handover Portion M45 to HCC (IS Appendix D1,	0			30-Nov-16*		0%		-122																									
EW1160	Remove existing hoarding fixed to Sheet pile	14			30-Nov-16	15-Dec-16	0%		-11																									
EW1170	Install a new hoarding with 500mm clearance from roadside	7			16-Dec-16	24-Dec-16	0%		-11																									
EW1180	Excavate Trench to expose watermains by PIW & install shoring	7			27-Dec-16	04-Jan-17	0%		-11																									
EW1190	Cut down sheet piles for water pipe connections	7			05-Jan-17	12-Jan-17	0%		-11																									
EW1510	Construct Incoming Water Mains (1- DN100 salt water)	21			13-Jan-17	09-Feb-17*	0%		-11																									
EW1500	Construct Incoming Water Mains (2- DN150 Fresh Water)	21			13-Jan-17	09-Feb-17*	0%		-11																									
Water Main Works at Portion M01																																		
EW6090	Construct the incoming water mains (two DN150 fresh water, ε	90			10-Feb-17	10-Jun-17	0%		-11																									
Telecom																																		
EW1080	Lay Telecom FTNS duct and complete pits connection	72	27-Jun-16	18-Oct-16	20-Dec-16	20-Mar-17	0%		-123	199																								
Telecom																																		
EW1590	Construct ICT & ELV drawpits @ Gridline M/14	15			07-Jan-17*	25-Jan-17	0%		469																									
EW1600	Construct 28 DN100 FTNS drawpit @ gridline M/14	14			25-Jan-17	14-Feb-17	0%		469																									
EW1610	Construct 4# 28 DN100 FTNS drawpit @ gridline A-M/14	14			14-Feb-17	02-Mar-17	0%		469																									
CLP																																		
EW1090	Excavate trench in footway for the 11kV direct buried cables	12	02-Jun-16	18-Jun-16	30-Nov-16	13-Dec-16	0%		-124	432																								
EW1100	Lay 11kV power cable by CLP (by others)	25	20-Jun-16	28-Jul-16	14-Dec-16	14-Jan-17	0%		-124	432																								
EW1110	Backfilling footway to adjacent ground level	6	29-Jul-16	06-Aug-16	16-Jan-17	21-Jan-17	0%		-124	432																								
EW1120	Allow Access for PIW Contractor to carry out works for 132kV ca	0	07-Aug-16		22-Jan-17		0%		-168	608																								
EW1130	Lay 132kV cable by CLP (by others)	25	08-Aug-16	12-Sep-16	23-Jan-17	23-Feb-17	0%		-124	432																								
EW1140	Backfilling footway to adjacent ground level	6	13-Sep-16	22-Sep-16	24-Feb-17	02-Mar-17	0%		-124	432																								
Entrance Portal Area																																		
EW2000	Entrance Portal Area - Dewatering Complete	0		08-Nov-16		11-Jan-17	0%		-63	-25																								
EW2010	Entrance Portal Area - Excavation	20	09-Nov-16	01-Dec-16	11-Jan-17	06-Feb-17	0%		-51	-18																								
EW2020	Entrance Portal Area - Construct Entrance Portal Area to B1 Str	30	17-Nov-16	22-Dec-16	19-Jan-17	25-Feb-17	0%		-51	-18																								
EW2030	Entrance Portal Area - Backfill to Soffit of Basement B1 Structur	24	23-Dec-16	21-Jan-17	27-Feb-17	25-Mar-17	0%		-51	194																								
Sea Water Drainage Pipe																																		
EW3000	Take Possession of M15,M16, M38 & M39	0	02-Sep-16		15-Nov-16 A		100%		-74																									
EW3030	Take Possession of Site Portion M41 & M42	0	03-Oct-16		30-Nov-16		0%		-58	532																								
EW3010	Install Seawater Discharge Pipes in Portions M15, M16, M38 &	120	02-Sep-16	09-Feb-17	30-Nov-16	29-Apr-17	0%		-64	353																								
EW3040	Install Seawater Discharge Pipes in Portions M41 & M42	130	03-Oct-16	16-Mar-17	30-Nov-16	16-May-17	0%		-44	393																								
Sea Water Drainage Pipe																																		
Seawater Intake and Outfall Pipeworks																																		
EW8980	Take Possession of Site Portion M41 & M42 (Appendix D2, 10Oct	0			30-Nov-16*		0%		-60																									
Seawater outfall pipeworks underground section Ch0 - 108 (starting from Ch108)																																		
EW3100	Driving of sheet piles	32			12-Nov-16 A	23-Dec-16	30%		171																									
EW3120	Excavation for installing 1st layer of walings and struts	10			21-Nov-16 A	10-Dec-16	20%		171																									
EW3130	Installing 1st layer of walings and struts	18			25-Nov-16 A	20-Dec-16	20%		171																									
EW3140	Hanging and supporting of existing underground KGO and othe	9			01-Dec-16	12-Dec-16	0%		174																									
Ch105 to 108, for future connections by Lyric (trench fromation -3.6mPD)																																		
EW3200	Excavation for installing 2nd layer of walings and struts	5			01-Dec-16	07-Dec-16	0%		171																									
EW3210	Installing 2nd layer of walings and struts	7			07-Dec-16	15-Dec-16	0%		171																									
EW3220	Excavation to bottom of trench	7			15-Dec-16	24-Dec-16	0%		171																									

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Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forecast / Actual Finish	% Compl.	Finish Variance	Current Float	November 2016					December 2016					January 2017					February 2017					March 2017					
										30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	05							
SM1470	SPS RC Structure	100	27-Apr-16	26-Aug-16	25-Jul-16 A	19-Jan-17	15%	-119	-83																										
SM1480	SPS Building Services Works	100	27-Aug-16	16-Feb-17	20-Jan-17	26-May-17	0%	-79	-83																										
SM1490	SPS ABWF	100	21-Nov-16	16-Feb-17	20-Jan-17	26-May-17	0%	-79	-83																										
ICP																																			
SM1415	ICP ELS and Excavation	137	22-Feb-16	26-Jul-16	20-May-16	04-Feb-17	77%	-157	-65																										
SM1420	ICP RC Structure	244	28-Jul-16	24-Jun-17	25-Jul-16 A	03-Oct-17	18%	-83	-83																										

Lyric Theatre Complex

Activity ID	Activity Name	Durn. (Days)	Programme Rev A Start	Programme Rev A Finish	Current / Actual Start	Current / Actual Finish	Physical % Complete	Finish Variance	Float (Days)	2016												2017												2018
										Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
F2 Foundation Works for Lyric Theatre Complex																																		
Summary for Major Works																																		
Pre-bored H-Pile																																		
Pre-bored H-Pile Construction																																		
LT.0087	Trial Pile and Obtain BD's Acknowledgement	18	22-Feb-16	12-Mar-16	08-Mar-16 A	09-Mar-16 A	100%	4																										
LT.0088	Predrilling, Excluding Portions L02 and L03; 56 nos.	71	20-Feb-16	20-May-16	01-Mar-16 A	13-Jul-16 A	100%	-43																										
LT.0089	Pre-bored H-Pile Construction; Rig 1, 107 nos	243	01-Apr-16	21-Jan-17	17-Mar-16 A	26-Jan-17	91%	-4	38																									
LT.2225	Pre-bored H-Pile Construction; Rig 2, 96 nos	255	01-Apr-16	08-Feb-17	30-Mar-16 A	26-Jan-17	92%	8	39																									
LT.2226	Pre-bored H-Pile Construction; Rig 3, 25 nos	25	01-Apr-16	30-Apr-16	30-Apr-16 A	05-Jul-16 A	100%	-51																										
LT.3315	Pre-bored H-Pile Construction; Rig 3, 8 nos	24			23-Sep-16 A	22-Oct-16 A	100%																											
LT.3340	Pre-bored H-Pile Construction; Rig 4, 6 nos	13			27-Sep-16 A	14-Oct-16 A	100%																											
LT.3370	Pre-bored H-Pile Construction; Rig 3, 19 nos	40			11-Nov-16 A	30-Dec-16 A	100%																											
Contract Administrator's Instruction No. 8																																		
LT.3010	Predrilling in Portions L02 and L03; 14 nos.	30	14-Oct-16	17-Nov-16	08-Aug-16 A	01-Sep-16 A	100%	64																										
LT.3015	Pre-bored H-Pile Construction; Rig 1, 21 nos	65	14-Feb-17	06-May-17	27-Jan-17	20-Mar-17	0%	35	38																									
LT.3020	Pre-bored H-Pile Construction; Rig 2, 22 nos	67	14-Feb-17	09-May-17	27-Jan-17	18-Mar-17	0%	38	39																									
LT.3390	Pre-bored H-Pile Construction; Rig 4, 16 nos	25			17-Nov-16 A	16-Dec-16 A	100%																											
LT.3750	Pre-bored H-Pile Construction; Rig 3, 4 nos	25			28-Dec-16 A	10-Jan-17	49%		94																									
BA14 and Testing																																		
LT.0094	Submission of BA14	6	06-Jun-17	12-Jun-17	18-Apr-17	23-Apr-17	0%	50	51																									
LT.0095	CA's Selection of Proof Drilling Locations	14	09-May-17	23-May-17	21-Mar-17	03-Apr-17	0%	50	51																									
LT.0096	Proof Drilling	14	23-May-17	06-Jun-17	04-Apr-17	17-Apr-17	0%	50	51																									
LT.0097	BD's Selection of Test Piles	28	12-Jun-17	10-Jul-17	24-Apr-17	21-May-17	0%	50	51																									
LT.0098	Load Testing and Submit Reports	32	10-Jul-17	11-Aug-17	21-May-17	22-Jun-17	0%	50	51																									
LT.0099	BD's Acknowledgement	45	11-Aug-17	25-Sep-17	23-Jun-17	06-Aug-17	0%	50	68																									
Bored Pile																																		
Bored Pile Construction																																		
LT.0102	Predrilling, Excluding Portions L02 and L03; 145 nos.	125	20-Feb-16	25-Jul-16	02-Mar-16 A	02-Sep-16 A	100%	-33																										
LT.0103	Bored Pile Construction; RCD Rig 1, 31 nos.	244	07-Apr-16	27-Jan-17	12-Mar-16 A	23-Mar-17	82%	-44	51																									
LT.1895	Bored Pile Construction; RCD Rig 2, 27 nos.	268	18-Mar-16	13-Feb-17	17-Mar-16 A	11-Mar-17	77%	-23	61																									
LT.1905	Bored Pile Construction; RCD Rig 3, 25 nos.	243	14-Apr-16	06-Feb-17	21-Mar-16 A	13-Mar-17	77%	-30	60																									
LT.1915	Bored Pile Construction; RCD Rig 4, 20 nos.	245	29-Mar-16	20-Jan-17	23-Mar-16 A	02-Feb-17	89%	-8	-15																									
LT.1925	Bored Pile Construction; RCD Rig 5, 15 nos.	200	28-Apr-16	24-Dec-16	26-Apr-16 A	10-Dec-16 A	100%	13																										
LT.1935	Bored Pile Construction; RCD Rig 6, 13 nos.	175	12-Jul-16	10-Feb-17	13-Jul-16 A	12-Apr-17	45%	-51	35																									
LT.1945	Bored Pile Construction; RCD Rig 7, 14 nos.	146	14-Jul-16	06-Jan-17	22-Jul-16 A	27-Feb-17	75%	-41	-36																									
LT.2215	Sonic Logging and Interface Coring Test; Excluding Portions L02 and L03	145	10-Sep-16	08-Mar-17	06-Oct-16 A	29-Apr-17	28%	-41	35																									
LT.3260	Completion of Bored Pile Construction in Area 6	0				28-Feb-17	0%		-46																									
Contract Administrator's Instruction No. 8																																		
LT.2891	Predrilling in Portions L02 and L03; 11 nos.	24	13-Sep-16	13-Oct-16	03-Aug-16 A	24-Aug-16 A	100%	41																										
LT.2895	Bored Pile Construction; RCD Rig 4, 4 nos.	51	10-Dec-16	14-Feb-17	24-Aug-16 A	24-Oct-16 A	100%	92																										
LT.2905	Bored Pile Construction; RCD Rig 1, 3 nos.	43	20-Dec-16	14-Feb-17	27-Aug-16 A	04-Oct-16 A	100%	108																										
LT.2915	Bored Pile Construction; RCD Rig 4, 2 nos.	30	06-May-17	10-Jun-17	21-Sep-16 A	12-Nov-16 A	100%	168																										
LT.2925	Bored Pile Construction; RCD Rig 1, 2 nos.	29	09-May-17	12-Jun-17	11-Oct-16 A	10-Nov-16 A	100%	171																										
LT.2935	Sonic Logging and Interface Coring Test; Portions L02 and L03	12	13-Jun-17	26-Jun-17	02-May-17	16-May-17	0%	34	35																									
BA14 and Testing																																		
LT.0108	Submission of BA14	3	27-Jun-17	29-Jun-17	17-May-17	19-May-17	0%	34	35																									
LT.0109	BD's Selection of Test Piles	28	30-Jun-17	27-Jul-17	20-May-17	16-Jun-17	0%	41	42																									
LT.0110	Concrete Coring Test and Submit Reports	13	27-Jul-17	11-Aug-17	16-Jun-17	03-Jul-17	0%	34	35																									
LT.0111	BD's Acknowledgement	45	12-Aug-17	25-Sep-17	04-Jul-17	17-Aug-17	0%	39	57																									
BA14 and Testing at Area 6 if Option is Exercised																																		
LT.0113	Submission of BA14	3	03-Feb-17	07-Feb-17	18-Mar-17	22-Mar-17	0%	-37	-12																									

Secondary Baseline
 Actual Work
 Remaining Work
 Critical Remaining Work
◆ Milestone

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



Date	Revision	Checked	Approved
30-Dec-16	For Information	R.L.	A.W.

C. Action and Limit Levels for Construction Phase

Air Quality

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

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

Monitoring Station	Action Level (mg/m ³)	Limit Level (mg/m ³)
AM1	273.7	500
AM2A	274.2	500

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

Monitoring Station	Action Level (µg/m ³)	Limit Level (µg/m ³)
AM1	143.6	260
AM2A	151.1	260

Noise

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

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

Time Period & Monitoring Locations	Action Level	Limit Level
NM1A		
0700-1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)

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

Air Quality

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

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

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

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

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

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

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

Landscape and Visual Impact

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

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

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

E. Monitoring Schedule

DECEMBER 2016

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

JANUARY 2017

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

F. Calibration Certifications

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM1(ICC)
 Calibrated by : K.T.Ho
 Date : 16/10/2016

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa) : 1013
 Ta(K) : 301

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.2	3.178	1.543	60	59.70
2 13 holes	8.4	2.884	1.403	52	51.74
3 10 holes	6.2	2.478	1.210	44	43.78
4 7 holes	4.4	2.087	1.024	34	33.83
5 5 holes	2.6	1.604	0.795	22	21.89

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

Sampler Calibration Relationship

Slope(m): 49.892 Intercept(b): -17.425 Correlation Coefficient(r): 0.9991

Checked by: 
 Magnum Fan

Date: 23/10/2016

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM1(ICC)
 Calibrated by : K.T.Ho
 Date : 16/12/2016

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 295

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.2	3.375	1.637	58	58.50
2 13 holes	8.6	2.958	1.438	48	48.41
3 10 holes	6.4	2.551	1.245	40	40.34
4 7 holes	4.4	2.116	1.038	31	31.26
5 5 holes	2.6	1.626	0.805	20	20.17

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

Sampler Calibration Relationship

Slope(m): 45.463 Intercept(b): -16.295 Correlation Coefficient(r): 0.9995

Checked by: 
 Magnum Fan

Date: 19/12/2016

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM2A (Harbourside)
 Calibrated by : K.T.Ho
 Date : 16/10/2016

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa) : 1013
 Ta(K) : 301

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.2	3.475	1.684	60	59.70
2 13 holes	9.2	3.018	1.467	51	50.75
3 10 holes	7.2	2.670	1.301	44	43.78
4 7 holes	4.6	2.134	1.046	34	33.83
5 5 holes	2.6	1.604	0.794	24	23.880

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

Sampler Calibration Relationship

Slope(m): 40.221 Intercept(b): -8.238 Correlation Coefficient(r): 0.9999

Checked by: 
 Magnum Fan

Date: 23/10/2016

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM2A (Harbourside)
 Calibrated by : K.T.Ho
 Date : 16/12/2016

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 295

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.4	3.551	1.720	62	62.53
2 13 holes	9.4	3.092	1.502	54	54.46
3 10 holes	7.2	2.706	1.319	48	48.41
4 7 holes	4.4	2.116	1.038	38	38.32
5 5 holes	2.6	1.626	0.805	28	28.24

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

Sampler Calibration Relationship

Slope(m): 36.964 Intercept(b): -0.799 Correlation Coefficient(r): 0.9990

Checked by: 
 Magnum Fan

Date: 19/12/2016



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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

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

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

CALIBRATION CERTIFICATE

Date: February 17, 2016

Equipment Name	:	Digital Dust Indicator, Model LD-5R
Code No.	:	080000-72
Quantity	:	1 unit
Serial No.	:	620402
Sensitivity	:	0.001 mg/m ³
Sensitivity Adjustment	:	783CPM
Scale Setting	:	February 8, 2016

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

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Shintaro Okamura

Shintaro Okamura

Overseas Sales Division


REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

REPORT NO. : HK1610285
 PROJECT NAME : PERFORMANCE CHECK / CALIBRATION OF DUST METER
 DATE OF ISSUE : 15/6/2016

CUSTOMER : ENVIROTECH SERVICES COMPANY
 ADDRESS : RM. 113, 1/F, MY LOFT, 9 HOI WING ROAD, TUEN MUN, N.T.

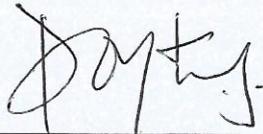
REPORT NO. : HK1610285
 PROJECT ITEM NO. : HK1610285-01
PERFORMANCE CHECK / CALIBRATED EQUIPMENT
 TYPE : LASER DUST MONITOR
 MANUFACTURER : SIBATA
 MODEL NO. : LD-5R
 SERIAL NO. : 620402
 EQUIPMENT NO. : ---
 RECEIPT DATE : 3/6/2016
 PERFORMANCE CHECK / CALIBRATION DATE : 7/6/2016

PERFORMANCE CHECK / CALIBRATION Information

CODE	Calibration Parameter	Method Procedure	Reference Method
Dust PC/CAL	Performance Check / Calibration of Dust Meter	CAL003	General Technical Requirements of Environmental Monitoring, Environmental Monitoring & Audit Guidelines for Development Projects in HK

- Notes : 1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.
 2. Performance Check / Calibration result relates to performance check / calibration item(s) as received.

Approved Signatory :



 Wong Po Yan Pauline
 (Testing Engineer)

 Issue Date: 15/6/2016


REPORT OF PERFORMANCE CHECK / CALIBRATION

PROJECT NAME : PERFORMANCE CHECK / CALIBRATION OF DUST METER
 DATE OF ISSUE : 15/6/2016
 REPORT NO. : HK1610285

PERFORMANCE CHECK / CALIBRATED EQUIPMENT

TYPE : LASER DUST MONITOR
 MANUFACTURER : SIBATA
 MODEL NO. : LD-5R
 SERIAL NO. : 620402
 EQUIPMENT NO. : ---
 SENSITIVITY ADJUSTMENT : 783 CPM
 SETTING :
 PERFORMANCE CHECK / CALIBRATION DATE : 7/6/2016

STANDARD EQUIPMENT

TYPE : HIGH VOLUME AIR SAMPLER
 MANUFACTURER : TISCH
 MODEL NO. : TE-5170
 EQUIPMENT REF NO. : PTL_HV002
 LAST CALIBRATION DATE : 30/5/2016

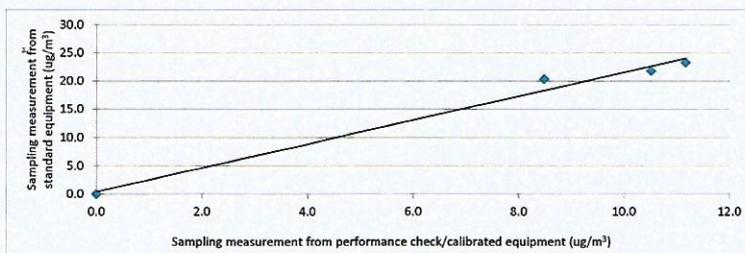
EQUIPMENT PERFORMANCE CHECK / CALIBRATION RESULTS:

Sensitivity Adjustment Scale Setting (Before Performance check / Calibration): 783 CPM
 Sensitivity Adjustment Scale Setting (After Performance check / Calibration): 783 CPM

Trial no. in 1-hr period	Time	Mean Temp (°C)	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard equipment) (Y - Axis)	Total Count ² (Performance Check / Calibrated equipment)	Concentration in Count/Minute ³ (Performance Check / Calibrated equipment) (X - Axis)
Zero Check ¹	7/6/2016, 08:00	28.1	1008	0.0	0	0.0
1	7/6/2016, 09:10 - 10:10	28.1	1008	21.8	631	10.5
2	7/6/2016, 12:59 - 13:59	28.1	1008	23.3	670	11.2
3	7/6/2016, 14:17 - 15:17	28.1	1008	20.4	509	8.5

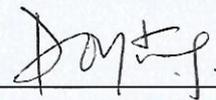
Linear Regression of Y on X

Slope (K- factor) : 2.1
 Correlation Coefficient : 0.9924
 Validity of Performance Check / Calibration Record : 7/6/2017



- Notes : 1. Zero check conducted as per CAL003 SOP and manufacturer's manual as appropriate.
 2. Total Count was measured by laser dust monitor.
 3. Count/minute was calculated by (Total Count/60).
 4. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.
 5. Performance Check / Calibration result relates to performance check / calibration item(s) as received.

Operator: Kong Wing Yan, Emily Signature:  Date: 7/6/2016

Checked by: Wong Po Yan, Pauline Signature:  Date: 15/6/2016



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C164166
證書編號

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

Description / 儀器名稱 : Precision Integrating Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-18
Serial No. / 編號 : 00360030
Supplied By / 委託者 : Envirotech Services Co.
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,
New Territories, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

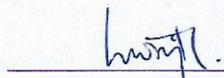
DATE OF TEST / 測試日期 : 29 July 2016

TEST RESULTS / 測試結果

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

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

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

Tested By : 
測試 : _____
H T Wong
Technical Officer

Certified By : 
核證 : _____
K C Lee
Project Engineer

Date of Issue : 1 August 2016
簽發日期

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

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

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C164166
證書編號

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

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

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

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

- 6.1.2 Linearity

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

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

- 6.2 Time Weighting

- 6.2.1 Continuous Signal

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

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

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Certificate of Calibration

校正證書

Certificate No. : C164166
證書編號

6.2.2 Tone Burst Signal (2 kHz)

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

6.3 Frequency Weighting

6.3.1 A-Weighting

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

6.3.2 C-Weighting

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

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

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Certificate of Calibration

校正證書

Certificate No. : C164166

證書編號

6.4 Time Averaging

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

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

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

- Uncertainties of Applied Value :

94 dB	31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
	Burst equivalent level	: ± 0.2 dB (Ref. 110 dB continuous sound level)

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

Note :

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



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C163248
證書編號

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

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

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

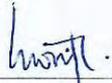
DATE OF TEST / 測試日期 : 15 June 2016

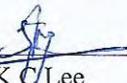
TEST RESULTS / 測試結果

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

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

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

Tested By : 
測試 : H T Wong
Technical Officer

Certified By : 
核證 : K C Lee
Project Engineer

Date of Issue : 17 June 2016
簽發日期

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

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Certificate of Calibration

校正證書

Certificate No. : C163248
證書編號

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

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

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

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

5.2 Frequency Accuracy

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

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

Note :

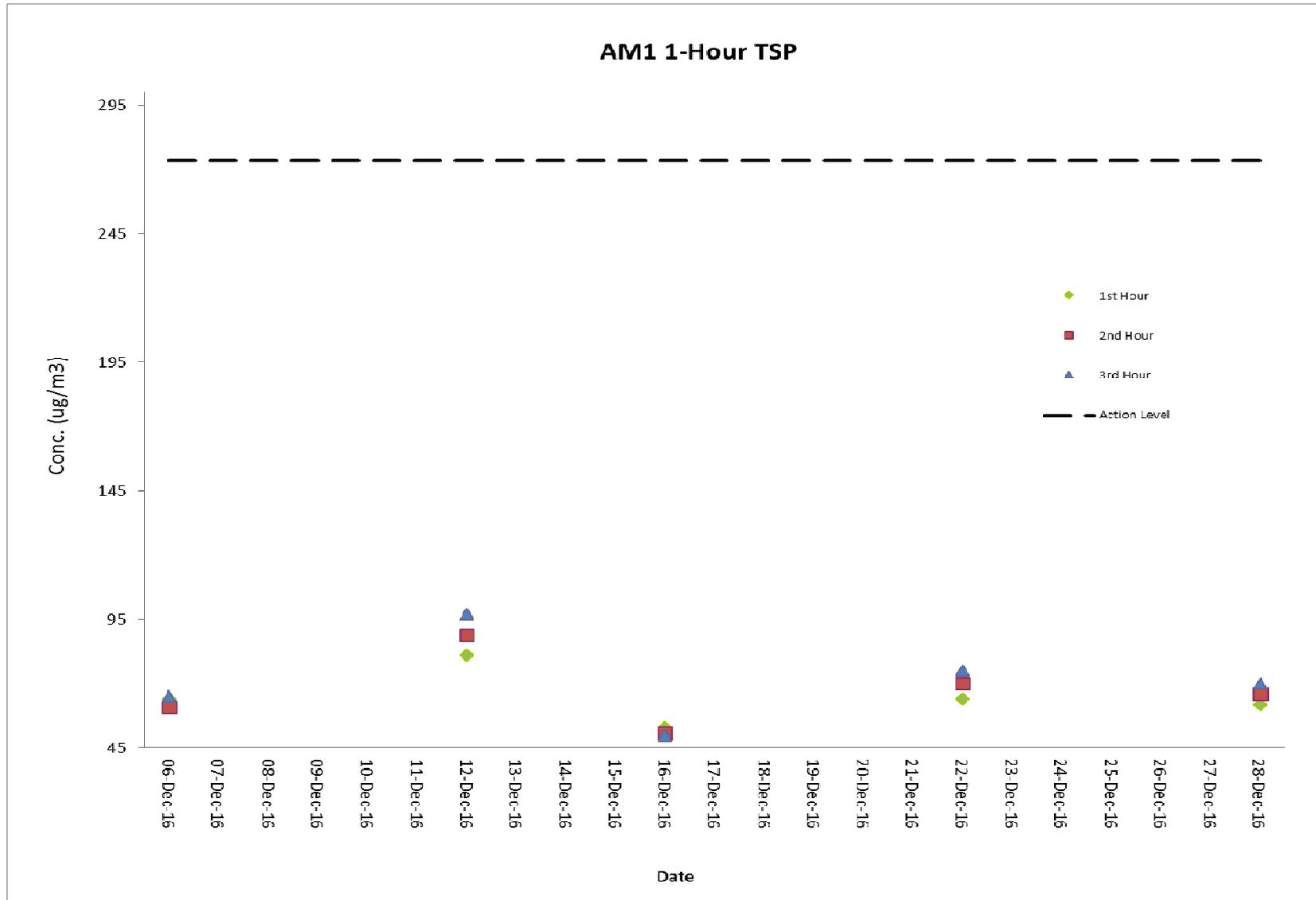
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the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

G. Graphical Plots of the Monitoring Results

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

Date	Weather Condition	Time	Conc. ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1 st Hour	2 nd Hour	3 rd Hour		
06-Dec-16	Fine	10:48 - 16:00	64	61	65	273.7	500
12-Dec-16	Cloudy	10:52 - 16:00	81	89	97	273.7	500
16-Dec-16	Sunny	8:02 - 11:02	53	51	50	273.7	500
22-Dec-16	Fine	10:50 - 16:00	64	70	75	273.7	500
28-Dec-16	Fine	10:48 - 16:00	62	66	70	273.7	500

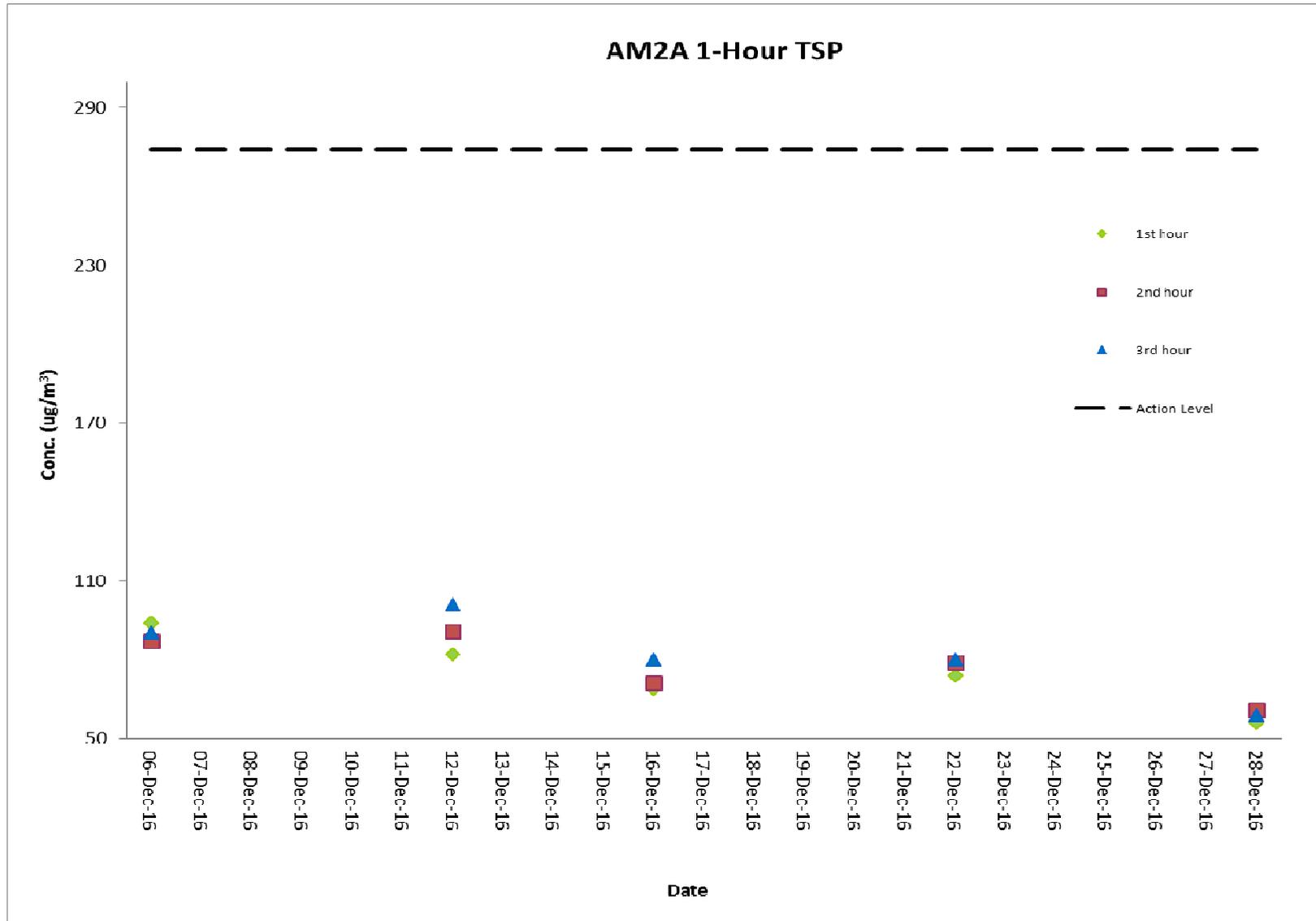
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



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

Date	Weather Condition	Time	Conc. ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1 st Hour	2 nd Hour	3 rd Hour		
06-Dec-16	Fine	11:02 - 16:10	94	87	90	274.2	500
12-Dec-16	Cloudy	11:04 - 16:10	82	91	101	274.2	500
16-Dec-16	Sunny	8:14 - 11:14	69	71	80	274.2	500
22-Dec-16	Fine	11:02 - 16:10	74	79	80	274.2	500
28-Dec-16	Fine	11:02 - 16:10	56	61	59	274.2	500

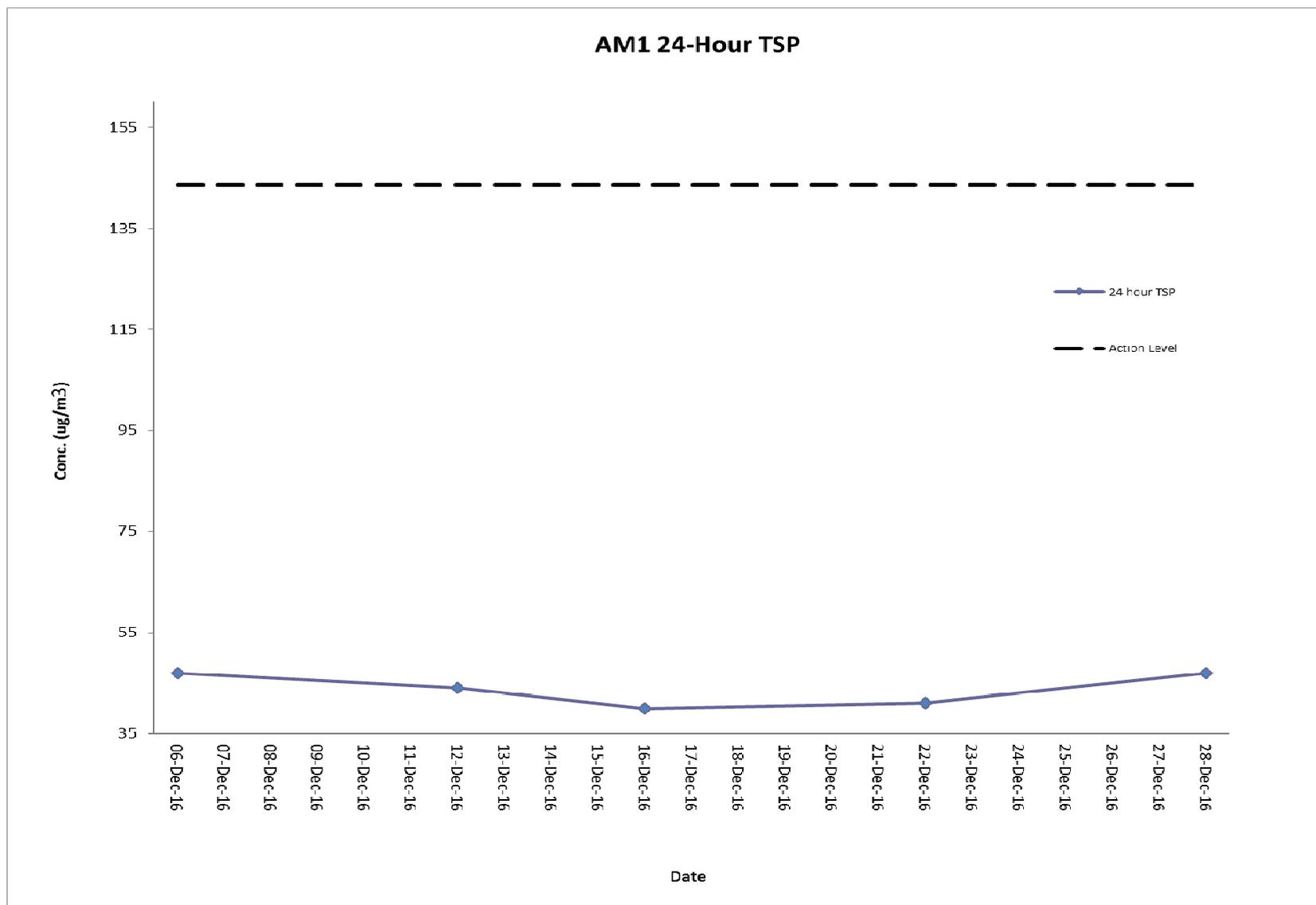
Graphical Presentation of Air Quality Monitoring Result at Station AM2A (1-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			Conc. (µg/m ³)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
06-Dec-16	10:50	07-Dec-16	10:50	2.8085	2.8911	20352.38	20376.38	24	1.23	1.23	1.23	47	Fine	143.6	260
12-Dec-16	10:50	13-Dec-16	10:50	2.8076	2.8858	20376.38	20400.38	24	1.23	1.23	1.23	44	Cloudy	143.6	260
16-Dec-16	08:00	17-Dec-16	08:00	2.8033	2.8797	20400.38	20424.38	24	1.33	1.33	1.33	40	Sunny	143.6	260
22-Dec-16	10:48	23-Dec-16	10:48	2.7883	2.8663	20424.38	20448.38	24	1.33	1.33	1.33	41	Fine	143.6	260
28-Dec-16	10:50	29-Dec-16	10:50	2.8105	2.901	20448.38	20472.38	24	1.33	1.33	1.33	47	Fine	143.6	260

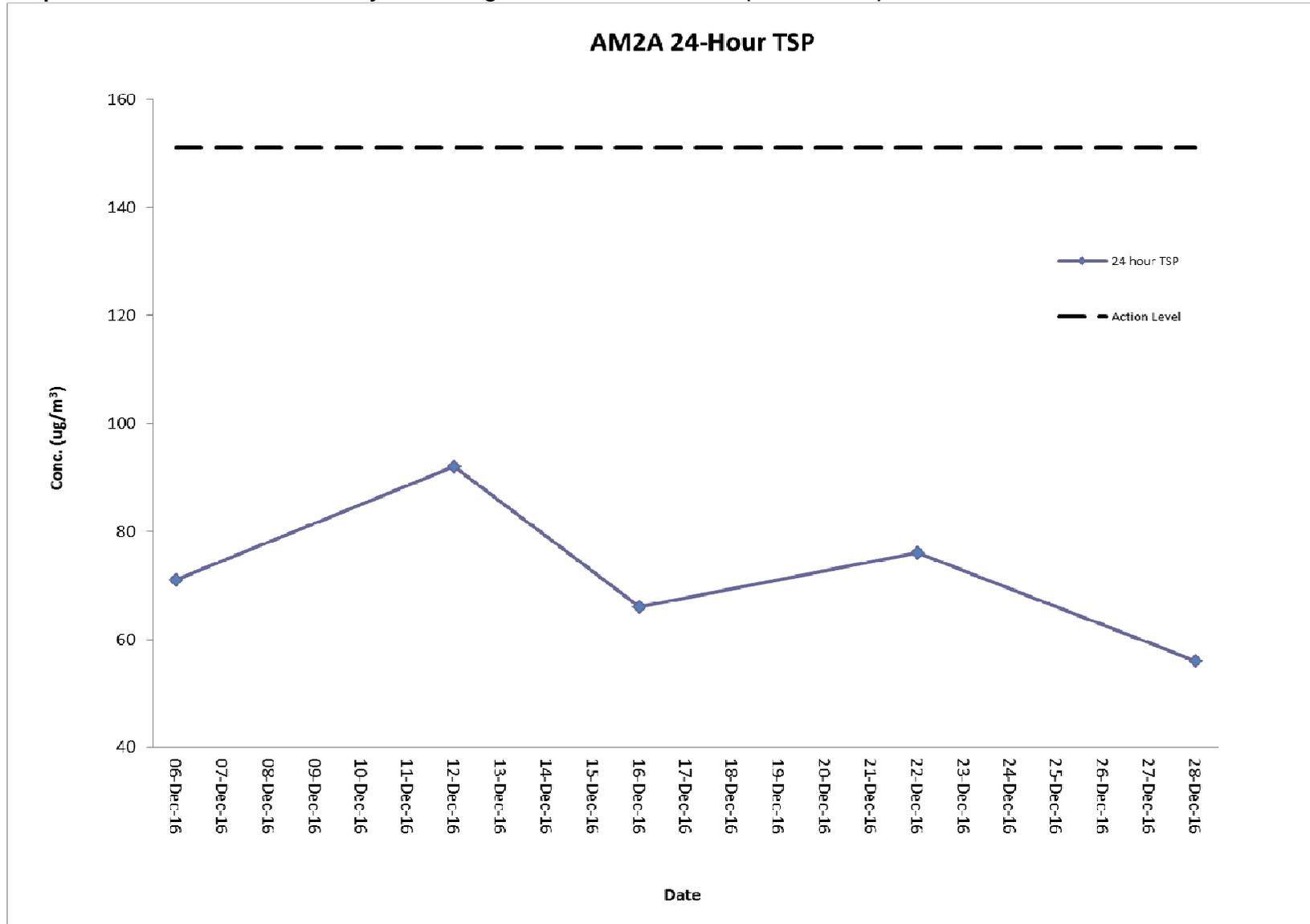
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



Air Quality Monitoring Result at Station AM2A (24-hour TSP)

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			Conc. (µg/m ³)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
06-Dec-16	11:00	07-Dec-16	11:00	2.8026	2.9305	16007.59	16031.59	24	1.25	1.25	1.25	71	Fine	151.1	260
12-Dec-16	11:02	13-Dec-16	11:02	2.8110	2.9762	16031.59	16055.59	24	1.25	1.25	1.25	92	Cloudy	151.1	260
16-Dec-16	08:12	17-Dec-16	08:12	2.7927	2.9071	16055.59	16079.59	24	1.21	1.21	1.21	66	Sunny	151.1	260
22-Dec-16	11:00	23-Dec-16	11:00	2.8071	2.9400	16079.59	16103.59	24	1.21	1.21	1.21	76	Fine	151.1	260
28-Dec-16	11:00	29-Dec-16	11:00	2.8064	2.9232	16103.59	16127.59	24	1.46	1.46	1.46	56	Fine	151.1	260

Graphical Presentation of Air Quality Monitoring Result at Station AM2A (24-hour TSP)



Noise Monitoring Result at Station NM1A

Date	Time	Measured L ₁₀ dB(A)	Measured L ₉₀ dB(A)	L _{eq} (30 min.) dB(A)
06-Dec-16	14:00	68.0	62.7	69.0
06-Dec-16	14:05	67.9	63.0	
06-Dec-16	14:10	67.9	62.9	
06-Dec-16	14:15	68.8	64.0	
06-Dec-16	14:20	68.0	63.9	
06-Dec-16	14:25	68.9	63.7	
12-Dec-16	14:00	66.0	62.0	67.6
12-Dec-16	14:05	67.4	63.1	
12-Dec-16	14:10	66.1	61.7	
12-Dec-16	14:15	66.7	62.8	
12-Dec-16	14:20	66.8	62.7	
12-Dec-16	14:25	66.9	62.6	
22-Dec-16	15:40	68.2	64.1	69.0
22-Dec-16	15:45	67.7	63.4	
22-Dec-16	15:50	68.0	64.0	
22-Dec-16	15:55	66.7	62.9	
22-Dec-16	16:00	67.2	63.8	
22-Dec-16	16:05	68.8	64.2	
28-Dec-16	14:00	66.2	62.0	68.1
28-Dec-16	14:05	67.1	63.4	
28-Dec-16	14:10	68.0	64.0	
28-Dec-16	14:15	67.9	63.8	
28-Dec-16	14:20	66.2	62.7	
28-Dec-16	14:25	66.4	62.9	

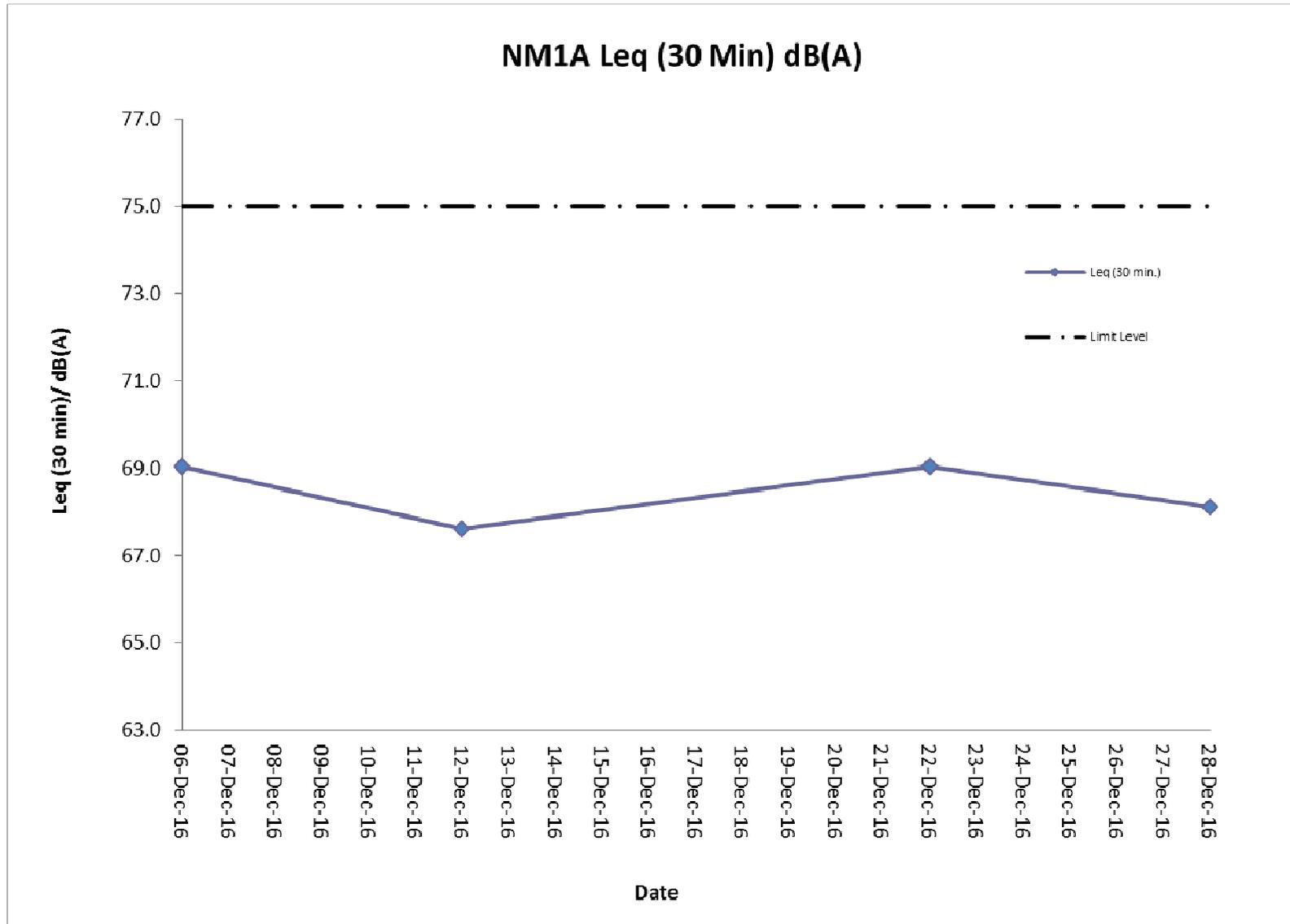
Remarks:

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



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

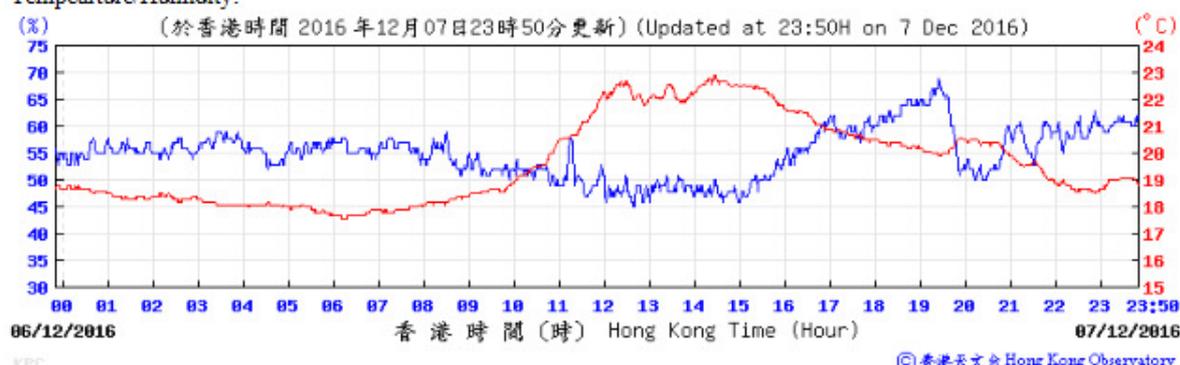
Graphical Presentation Noise Monitoring Result at Station NM1A



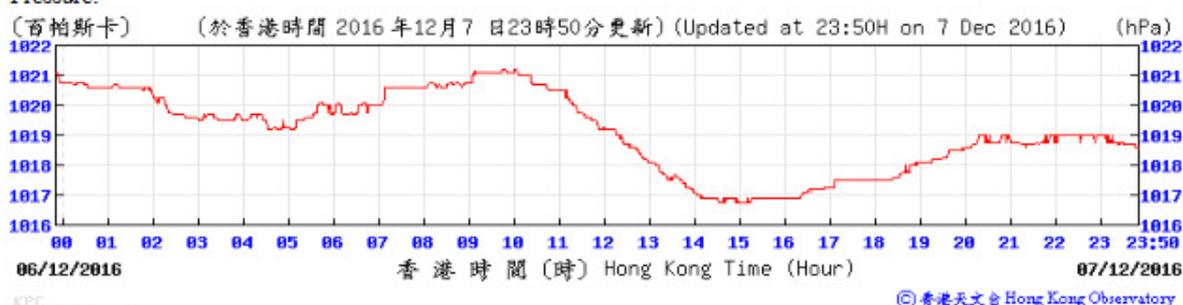
H. Meteorological Data Extracted from Hong Kong Observatory

Extract of Meteorological Observations for King's Park Automatic Weather Station, December 2016

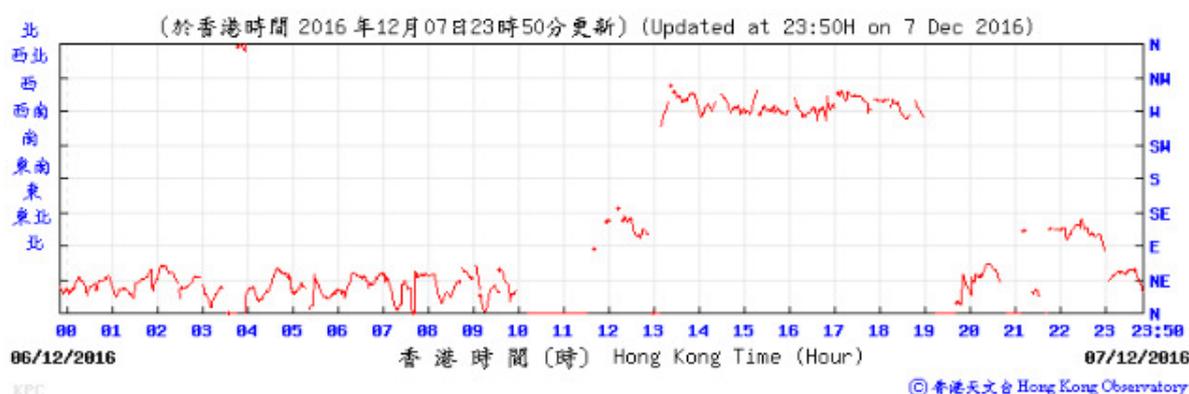
Temperature/Humidity:



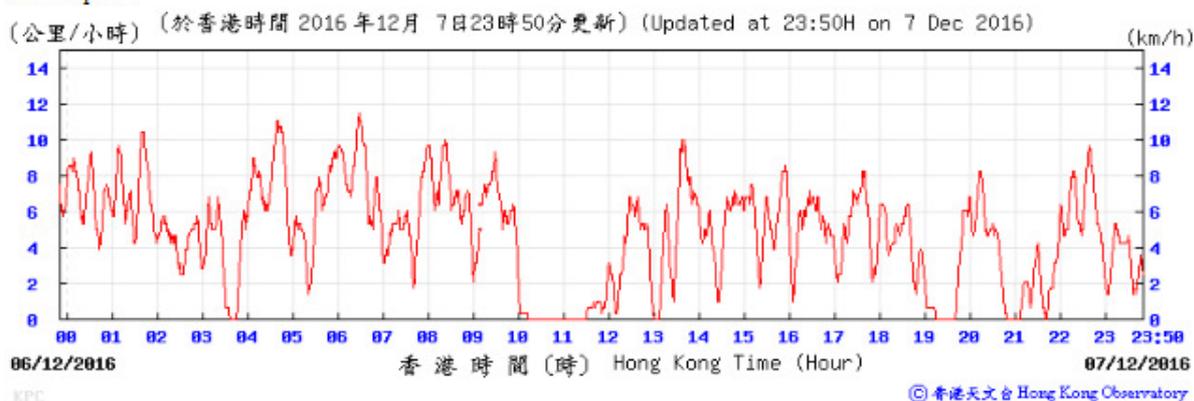
Pressure:



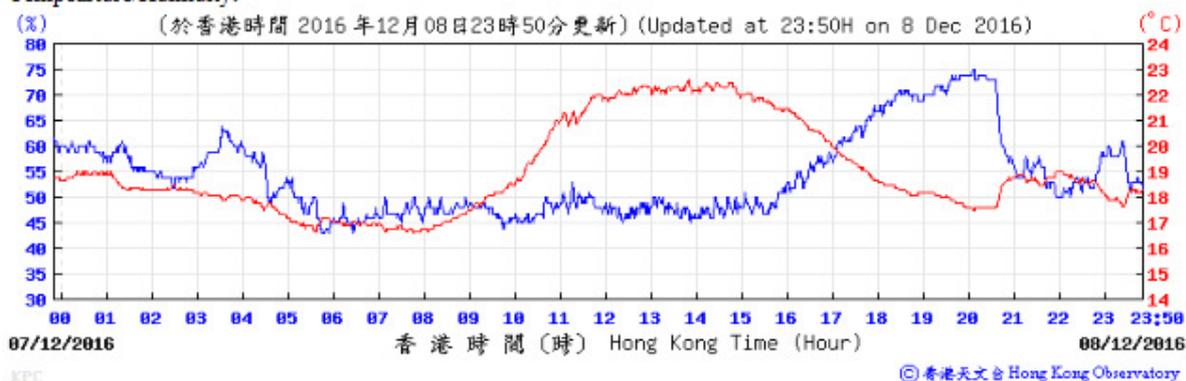
Wind Direction:



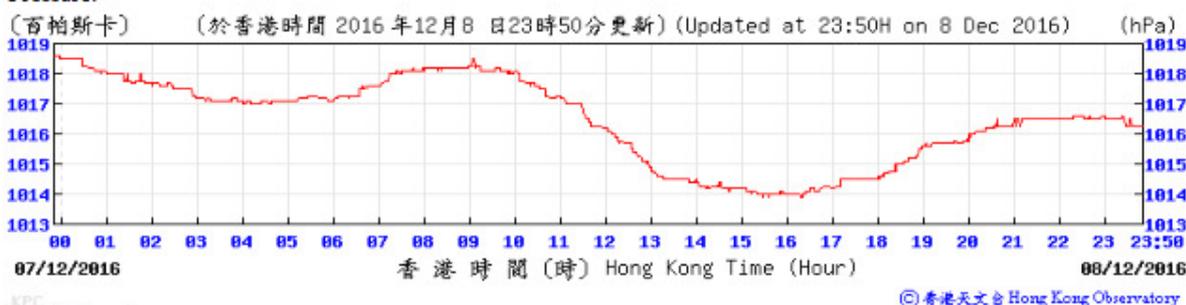
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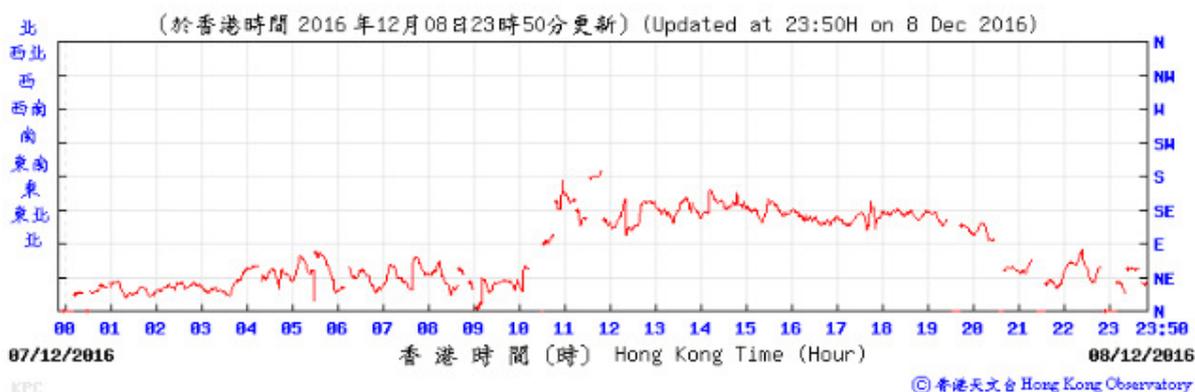
Temperature/Humidity:



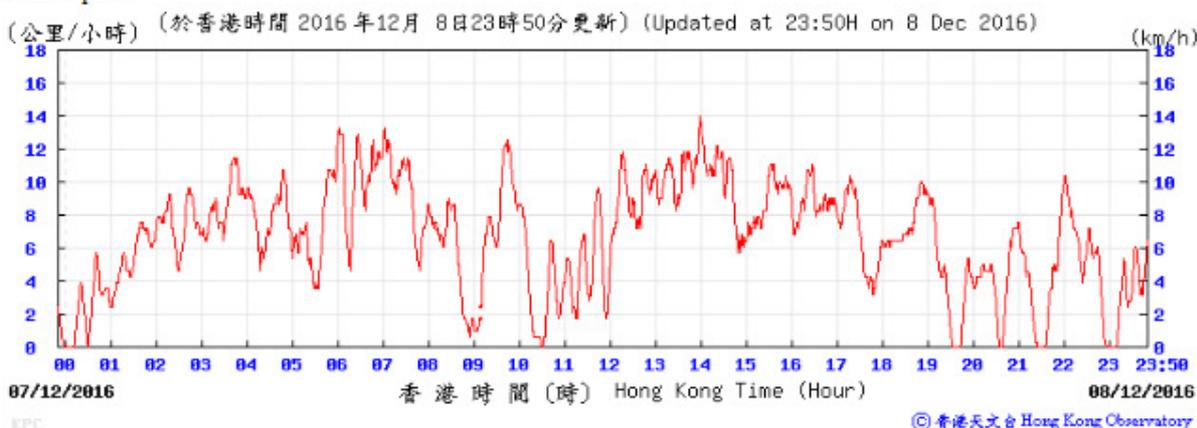
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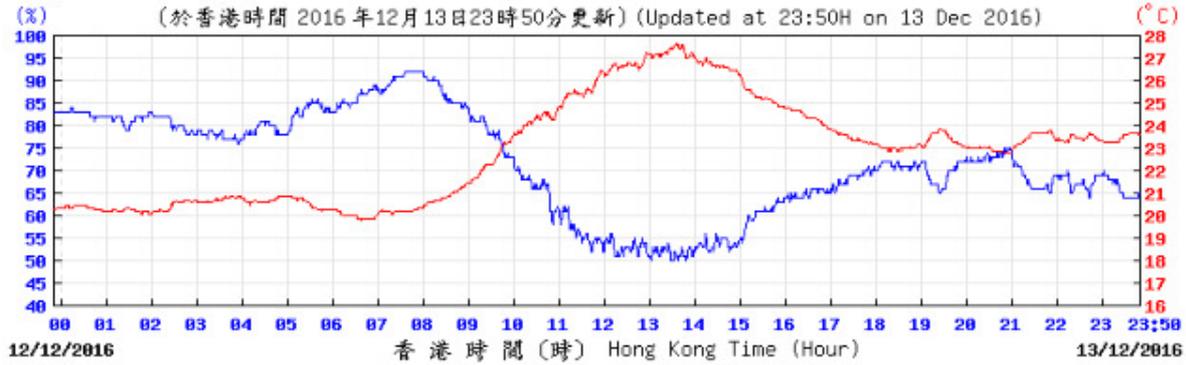
Wind Direction:



Wind Speed:

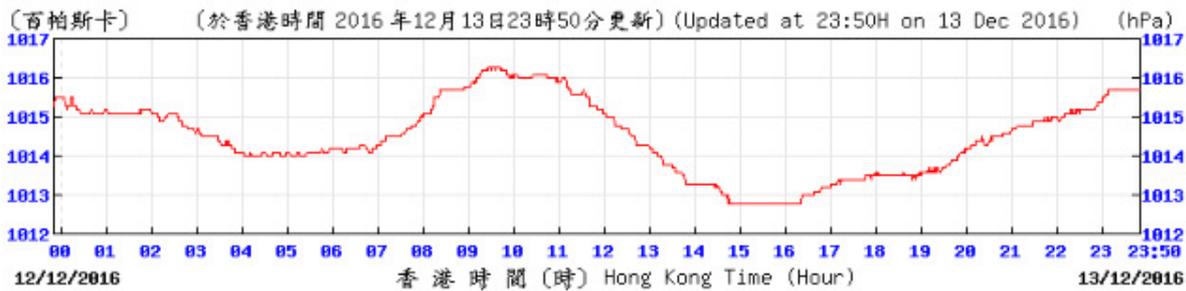


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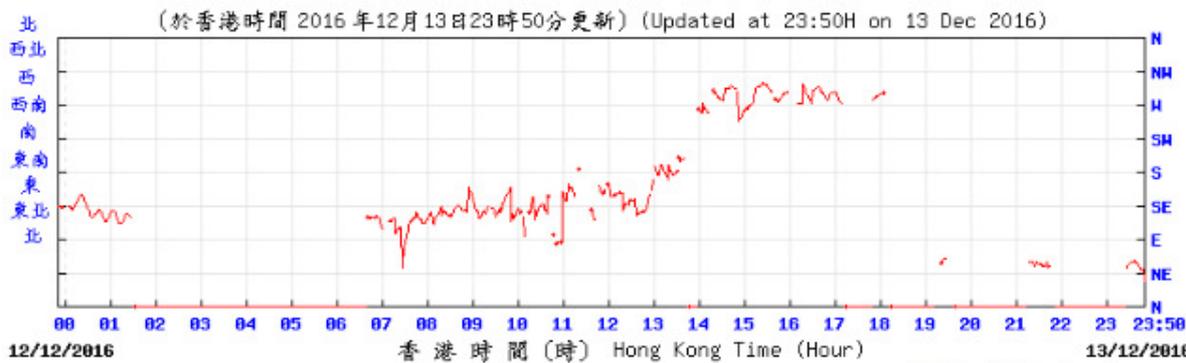
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Pressure:



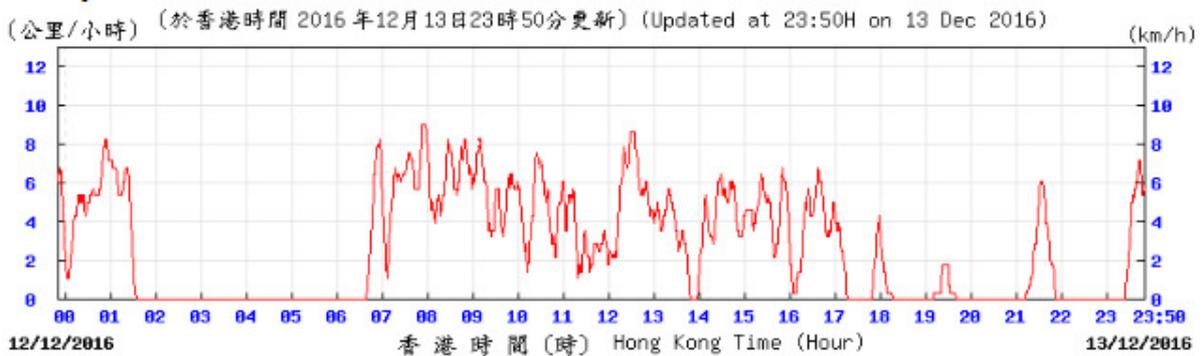
© 香港天文台 Hong Kong Observatory

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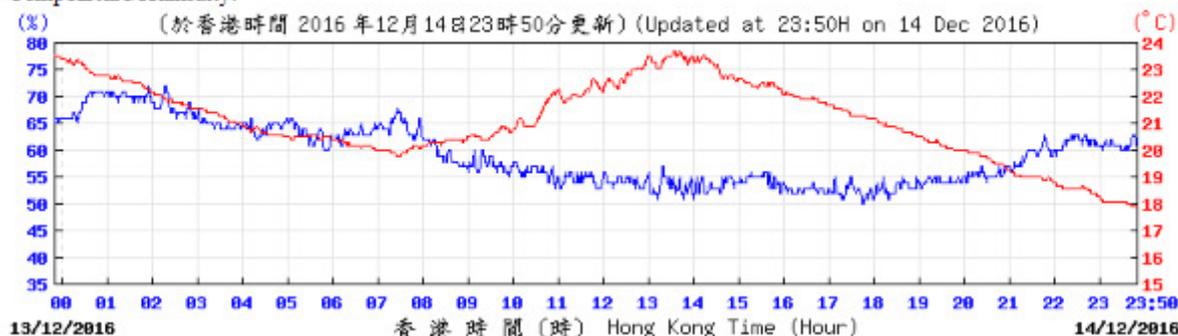
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Wind Speed:



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Temperature Humidity:



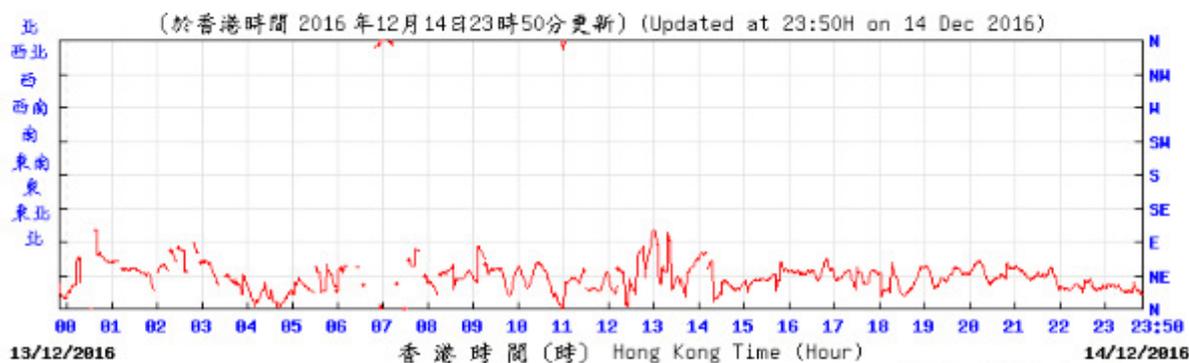
© 香港天文台 Hong Kong Observatory

Pressure:



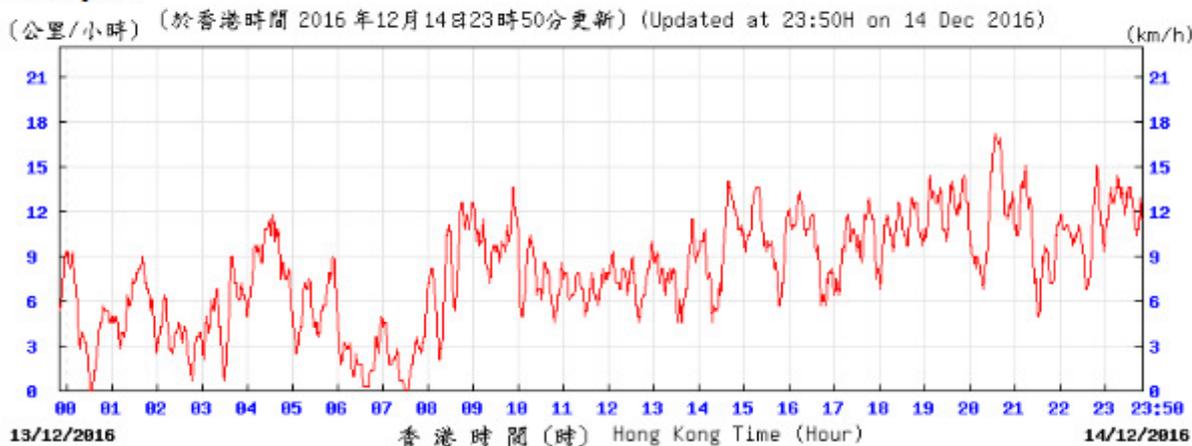
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Wind Direction:



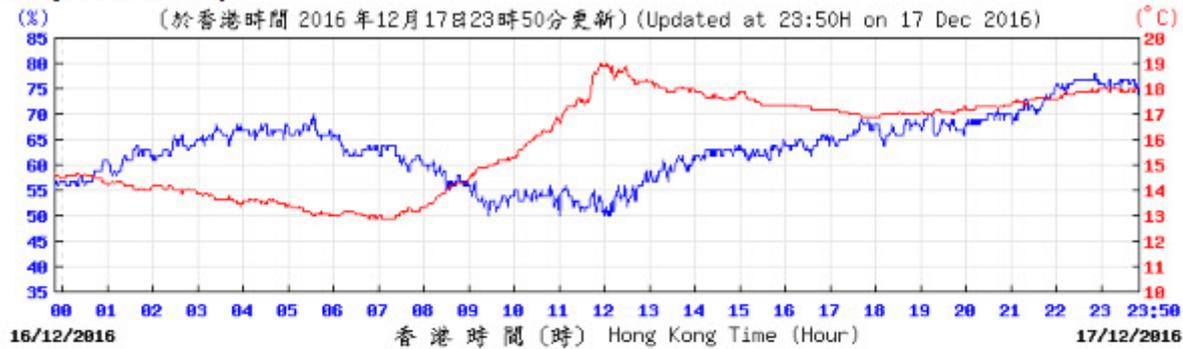
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Wind Speed:



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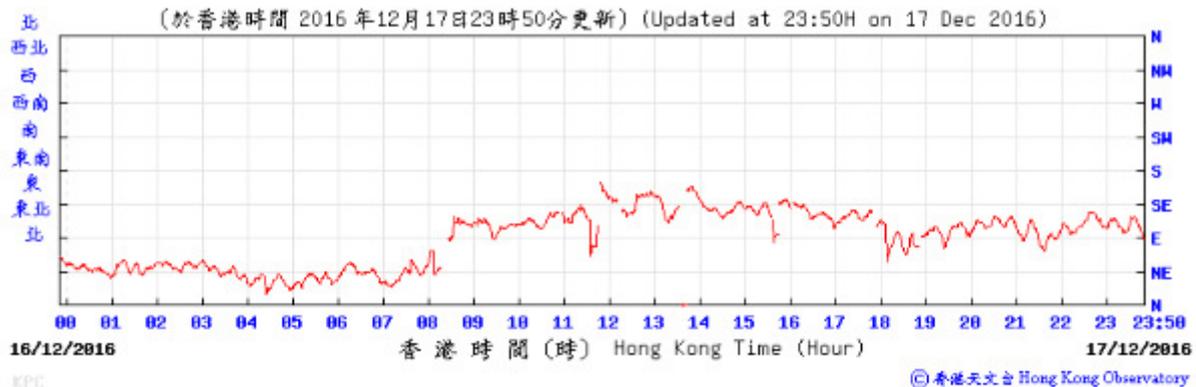
Temperature/Humidity:



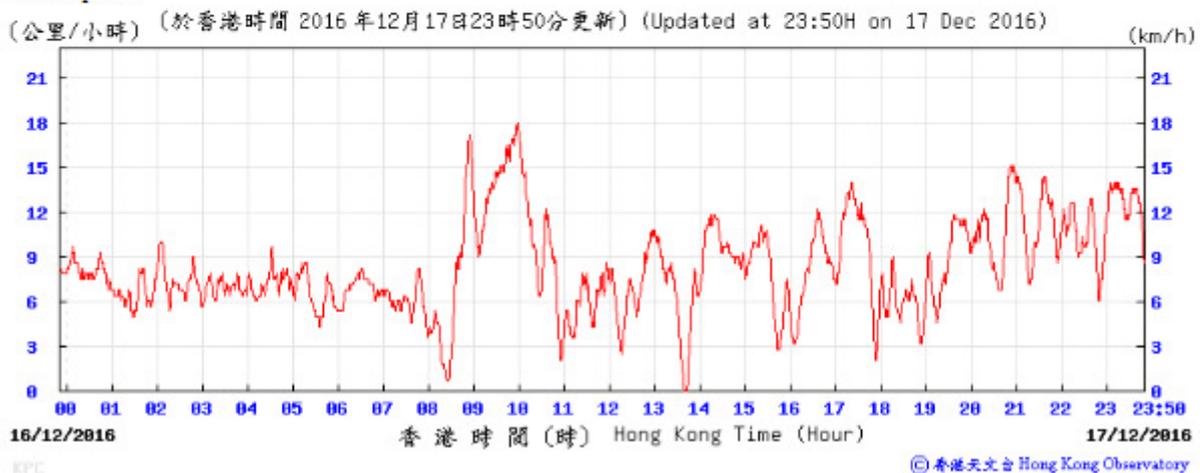
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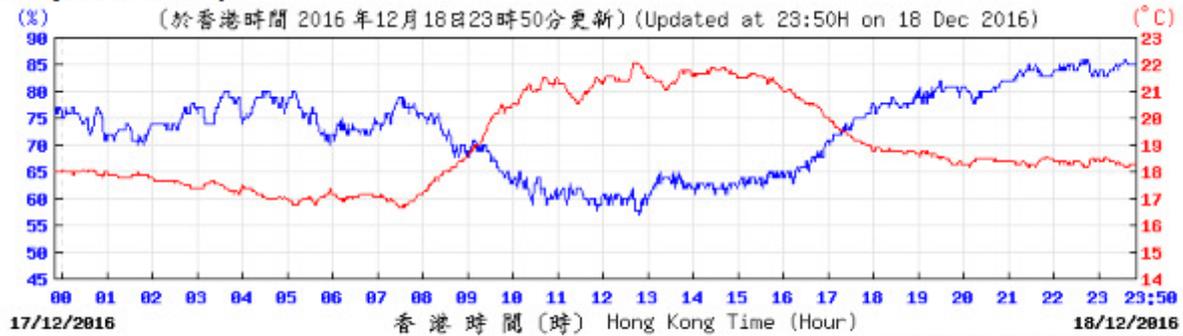
Wind Direction:



Wind Speed:

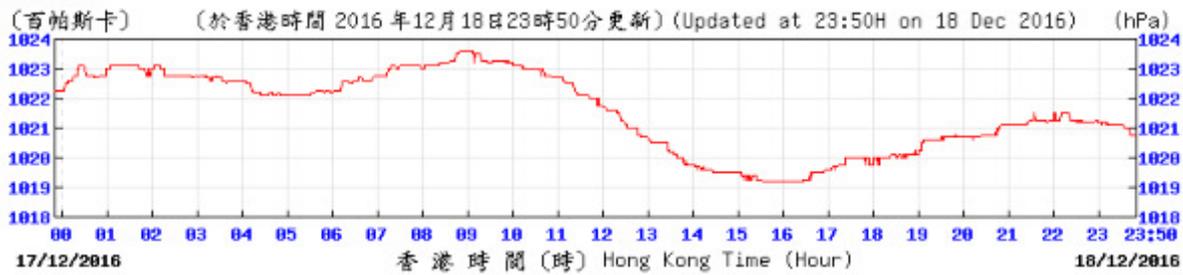


Temperature/Humidity:



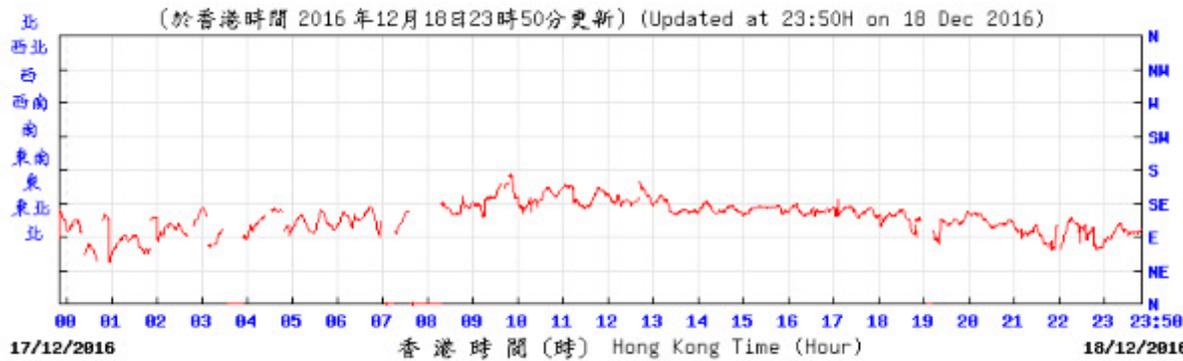
© 香港天文台 Hong Kong Observatory

Pressure:



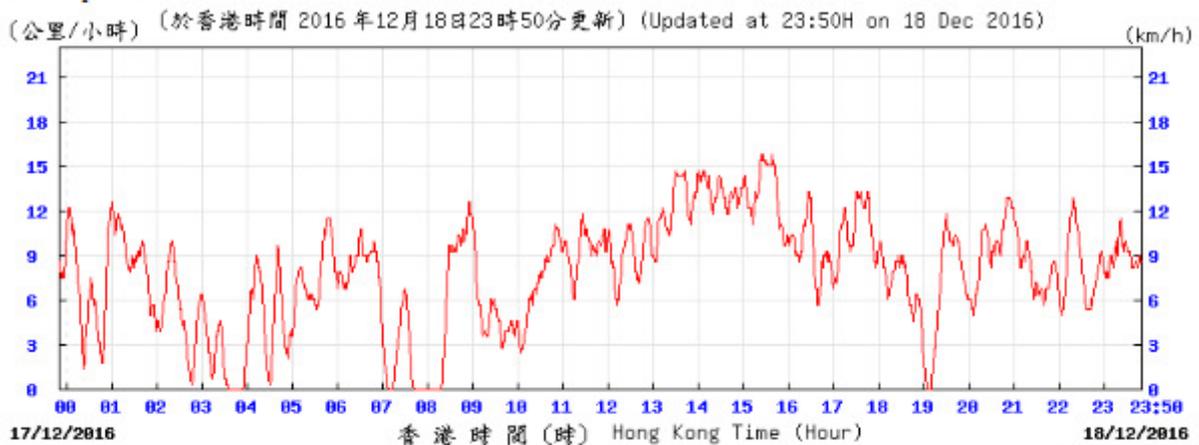
© 香港天文台 Hong Kong Observatory

Wind Direction:



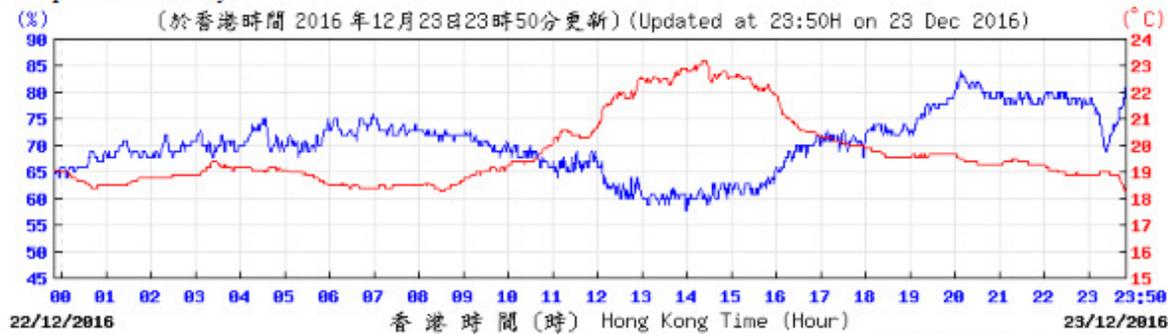
© 香港天文台 Hong Kong Observatory

Wind Speed:



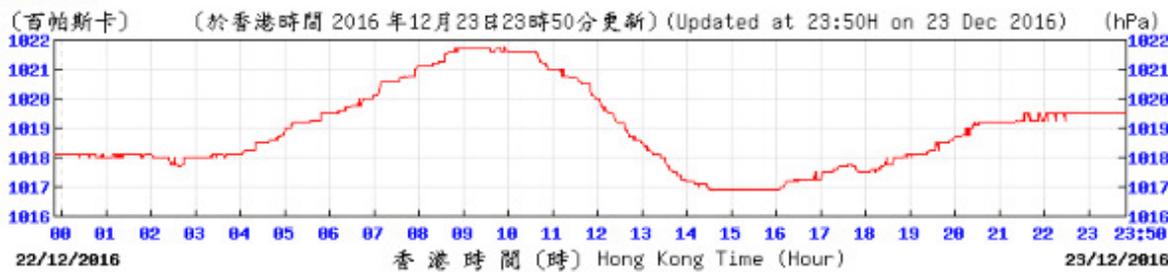
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Temperature/Humidity:



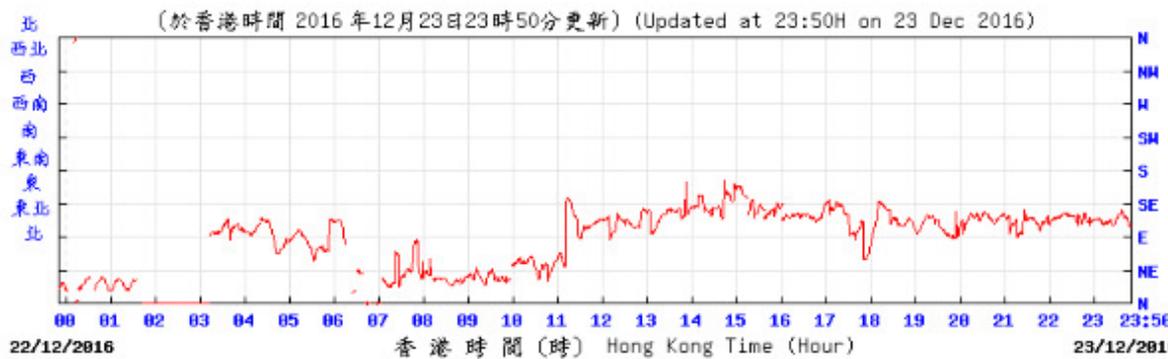
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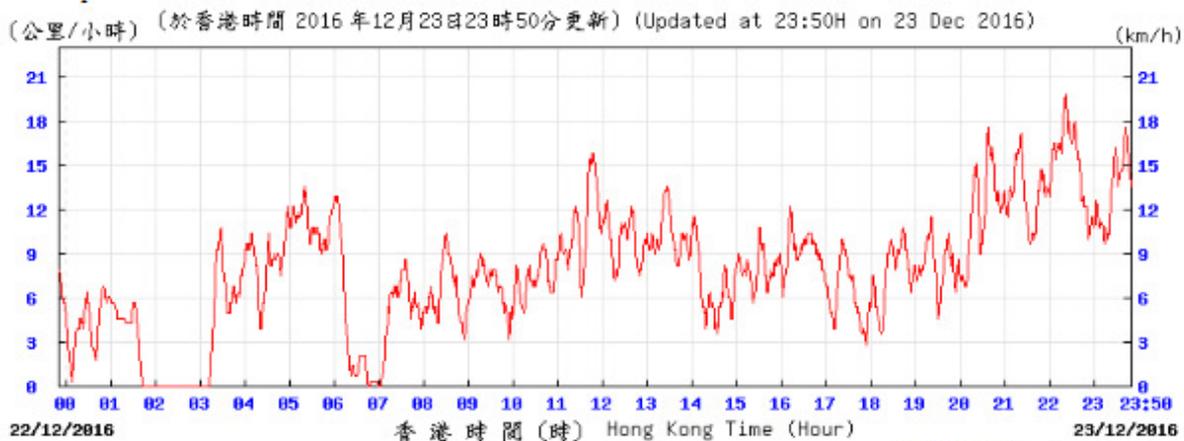
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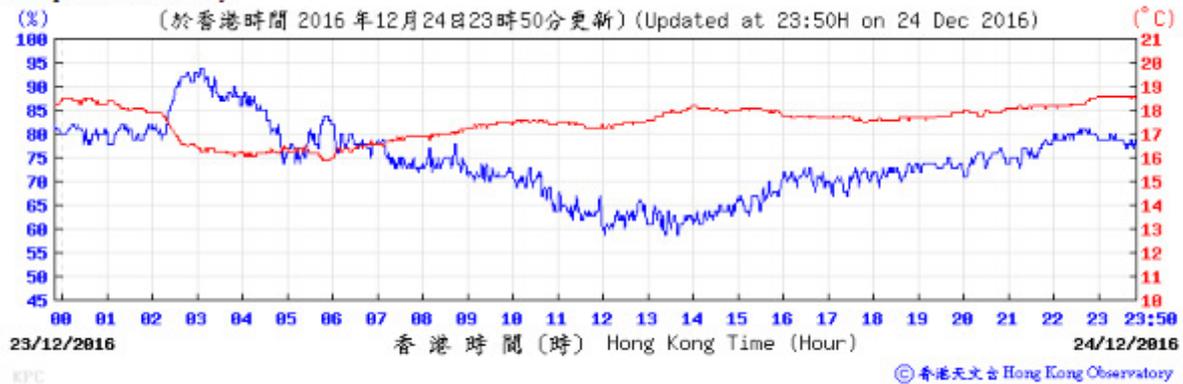
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Wind Speed:



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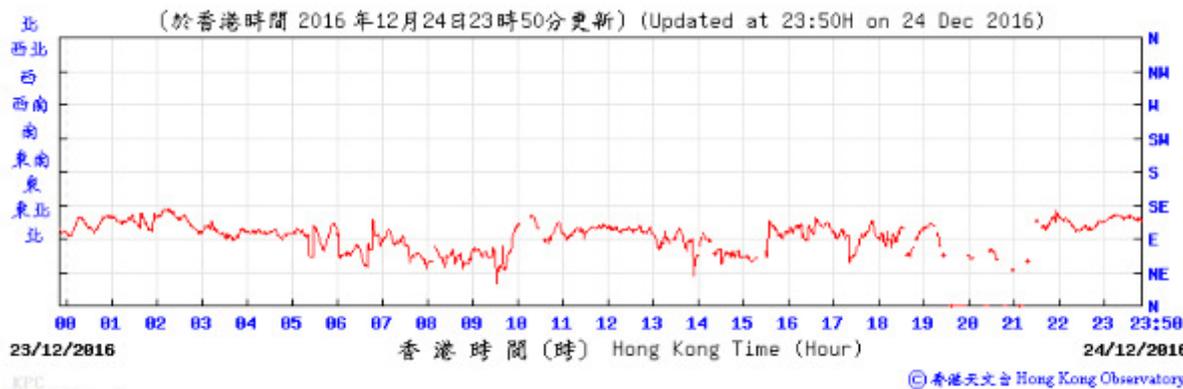
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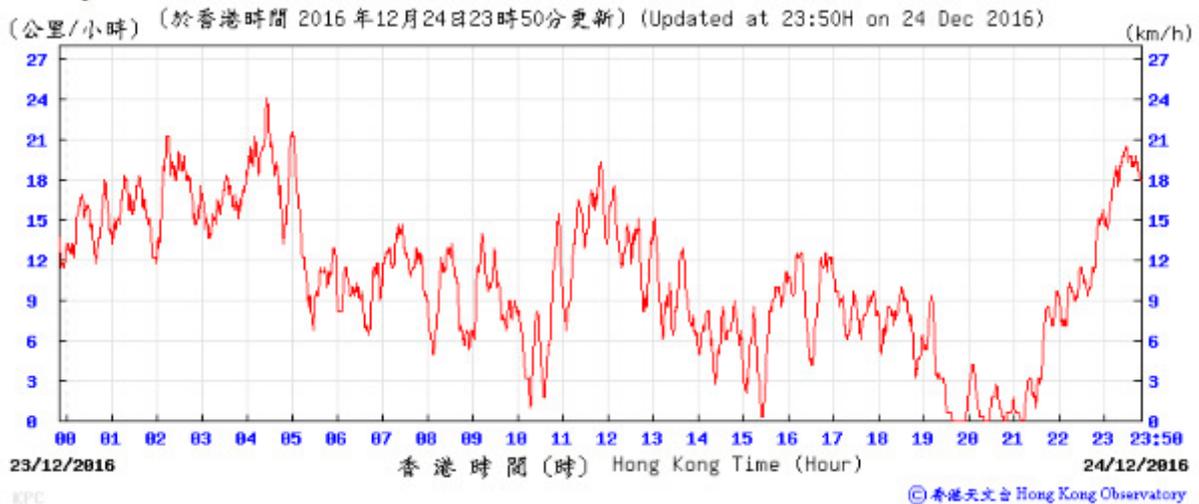
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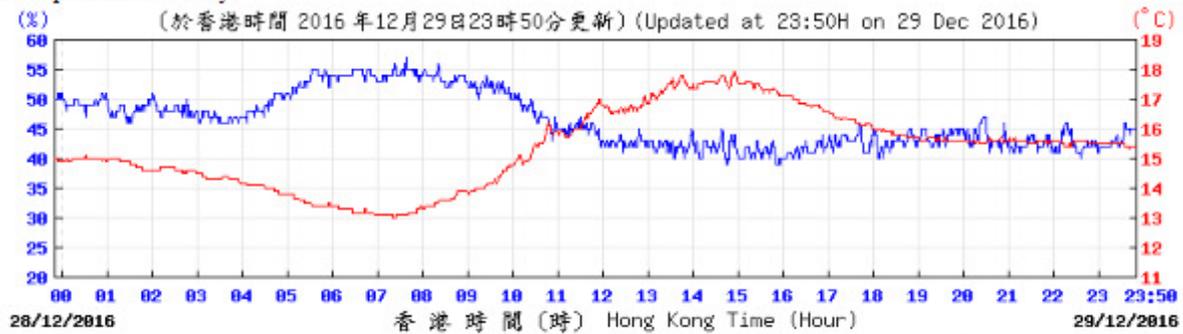
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Wind Speed:

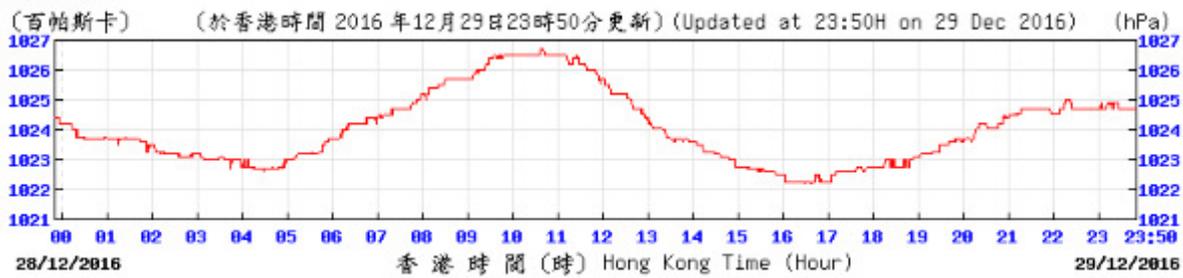


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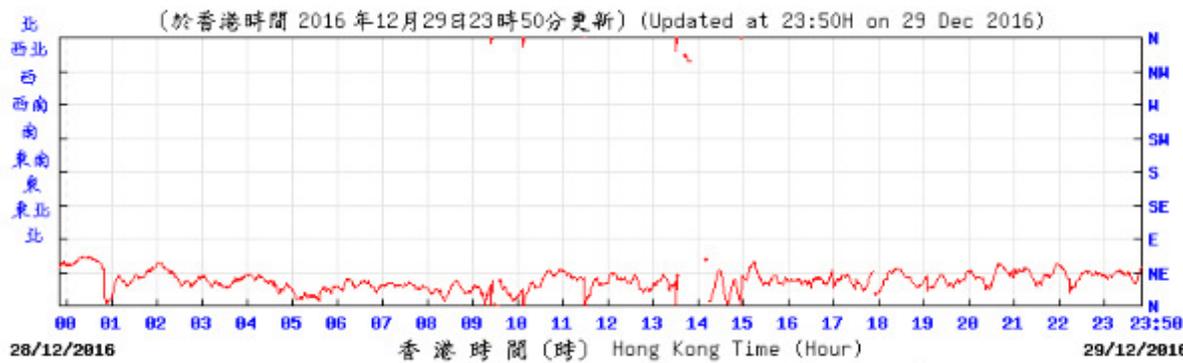
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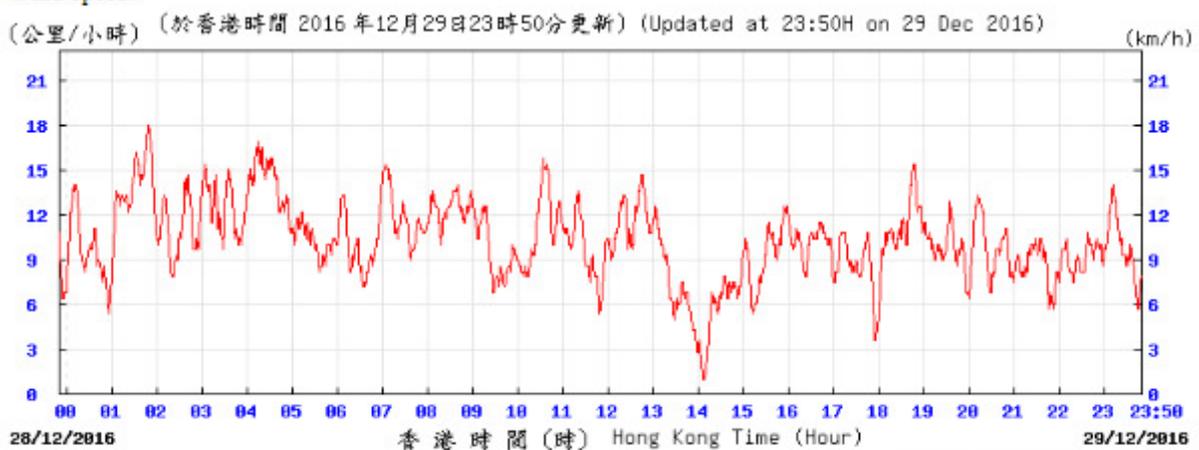
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Wind Direction:



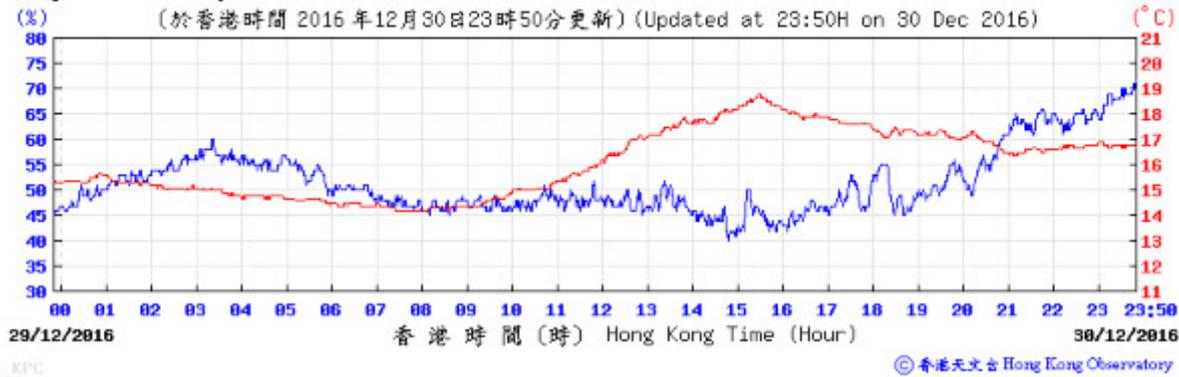
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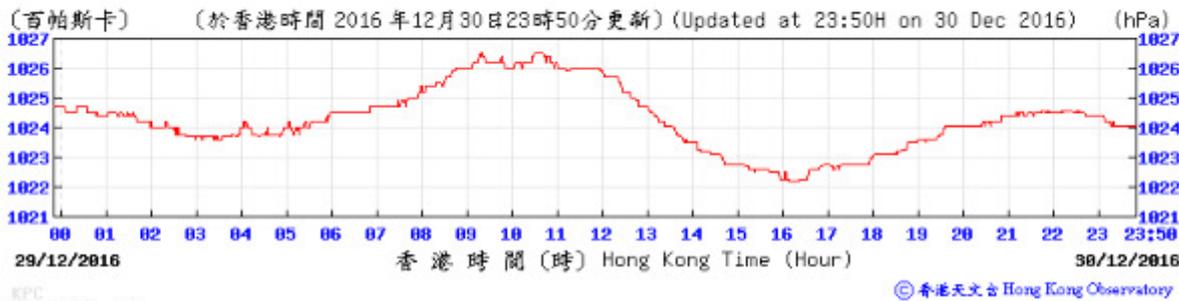


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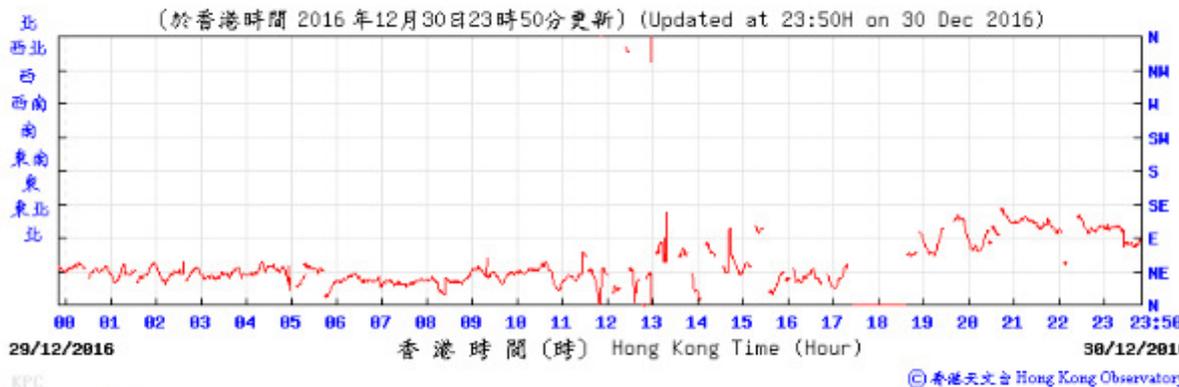
Temperature/Humidity:



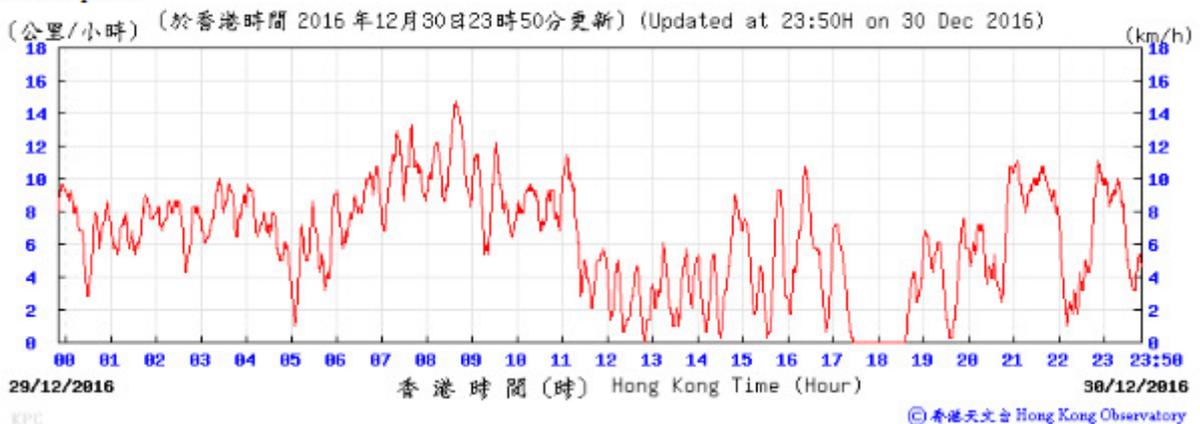
Pressure:



Wind Direction:



Wind Speed:



I. Waste Flow table

M+ Museum

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2015													
Nov	46607.4	0.0	0.0	8240.0	38367.4	0.0	0.0	76.2	0.0	0.0	0.0	0.0	67.6
Dec	29652.9	0.0	0.0	29621.4	31.5	0.0	0.0	26.3	0.0	0.0	0.0	1.0	66.0
Sub-total (2015)	76260.3	0.0	0.0	37861.4	38398.9	0.0	0.0	102.5	0.0	0.0	0.0	1.0	133.6
2016													
Jan	21077.4	0.0	6352.0	14576.0	149.4	0.0	0.0	18.8	0.0	0.0	0.0	0.0	23.2
Feb	7626.2	0.0	3424.0	4048.0	154.2	0.0	0.0	59.8	0.0	0.0	0.0	0.0	20.5
Mar	10442.5	0.0	1600.0	7888.0	954.5	0.0	0.0	29.7	0.0	0.0	0.0	0.0	46.3
Apr	30413.2	0.0	6352.0	23408.0	653.2	0.0	0.0	25.8	0.1	0.0	27.8	0.0	34.5
May	24083.5	0.0	112.0	23216.0	755.5	0.0	0.0	61.5	0.4	0.0	33.6	0.0	62.3
Jun	7880.1	0.0	4736.0	2384.0	760.1	0.0	0.0	106.6	0.1	0.0	14.6	0.0	52.8
Jul	5893.1	0.0	2656.0	2240.0	997.1	0.0	0.0	77.6	0.0	0.0	33.6	0.0	83.1
Aug	13709.6	0.0	0.0	12432.0	1277.6	0.0	0.0	111.3	0.3	0.0	38.5	0.0	104.9
Sep	6702.0	0.0	0.0	5648.0	1000.1	53.9	0.0	104.2	0.0	0.0	45.5	0.2	107.9
Oct	2103.6	0.0	0.0	496.0	1595.4	12.2	0.0	83.0	0.4	0.0	73.5	0.0	108.2
Nov	3302.7	0.0	0.0	2384.0	855.5	63.2	0.0	88.4	0.6	0.0	63.0	0.0	129.1
Dec	899.8	0.0	0.0	736.0	126.8	37.0	0.0	48.3	0.6	0.0	70.0	0.0	89.0
Sub-total (2016)	134133.6	0.0	25232.0	99456.0	9279.3	166.3	0.0	814.9	2.5	0.0	400.1	0.2	861.8
Total	210393.9	0.0	25232.0	137317.4	47678.2	166.3	0.0	917.4	2.5	0.0	400.1	1.2	995.4

Note:
 -16.8 ton and 109.98 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively in the reporting month.
 -For inert C&D materials reused in other projects, the projects refer to (1) Green Valley; (2) Advance Works for Shek Wu Hui Sewage Treatment Works (3) Design and Construction of Kai Tak Cable Tunnel, CLP; (4) MTR Contract 1002 Whampoa Station and Overrun Tunnel; (5) CEDD Tuen Mun Area 54 Contract No. CV/2015/03; (6) Union Construction Ltd.'s site; (7) Foundation Works at Marriot Hotel at Ocean Park.

Lyric Theatre Complex

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2016													
Mar	2702.1	0.0	0.0	0.0	2702.1	0.0	0.0	4.5	0.1	0.0	0.0	0.0	30.6
Apr	8631.5	0.0	0.0	0.0	8631.5	0.0	0.0	16.0	0.0	0.0	0.0	0.0	19.2
May	12487.8	0.0	0.0	0.0	12487.8	0.0	0.0	34.0	0.0	0.0	0.0	0.7	60.5
Jun	8600.8	0.0	0.0	0.0	8600.8	0.0	0.0	31.4	0.2	0.0	0.0	0.5	13.5
Jul	12624.2	0.0	0.0	0.0	12624.2	0.0	0.0	19.6	0.0	0.0	0.0	2.0	9.9
Aug	14419.9	0.0	0.0	0.0	14419.9	0.0	0.0	43.9	0.0	0.0	0.0	0.0	11.1
Sep	13671.3	0.0	0.0	0.0	13671.3	0.0	0.0	59.8	0.0	0.0	0.0	1.6	12.4
Oct	13088.9	0.0	0.0	0.0	13088.9	0.0	0.0	37.1	0.2	1.5	0.0	0.0	15.2
Nov	12424.7	0.0	0.0	0.0	12424.7	0.0	0.0	74.7	0.0	0.0	0.0	1.4	10.2
Dec	12487.6	0.0	0.0	0.0	12487.59	0.0	0.0	13.85	0	0	0.0	1.26	9.02
Sub-total (2016)	111138.8	0.0	0.0	0.0	111138.8	0.0	0.0	334.7	0.4	1.5	0.0	7.6	191.6
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	111138.8	0.0	0.0	0.0	111138.8	0.0	0.0	334.7	0.4	1.5	0.0	7.6	191.6

Note:
 -3,573.98 ton and 8,913.61 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 respectively in the reporting month.

J. Environmental Mitigation Measures – Implementation Status

Table J-1: Environmental Mitigation Measures Implementation Status

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

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

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

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

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

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

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	<p>Waste Reduction Measures</p> <p>Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> Sort inert C&D material to recover any recyclable portions such as metals Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal Encourage collection of recyclable waste such as waste paper and aluminium cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force Proper site practices to minimise the potential for damage or contamination of inert C&D materials Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>
6.1 & 10.7.1	<p>Inert and Non-inert C&D Materials</p> <p>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.</p> <ul style="list-style-type: none"> The surplus inert C&D material will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong. Liaison with the CEDD Public Fill Committee (PFC) on the allocation of space for disposal of the inert C&D materials at PFRF is underway. No construction work is allowed to proceed until all issues on management of inert C&D materials have been resolved and all relevant arrangements have been endorsed by the relevant authorities including PFC and EPD. The C&D materials generated from general site clearance should be sorted on site to segregate any inert materials for reuse or disposal of at PFRFs whereas the non-inert materials will be disposed of at the designated landfill site. In order to monitor the disposal of inert and non-inert C&D materials at respectively PFRFs and the designated landfill site, and to control fly-tipping, it is recommended that the Contractor should follow the Technical Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition 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. 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	<p>Chemical Waste</p> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the “Code of Practice on the Packaging Labelling and Storage of Chemical Wastes”. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Potential environmental impacts arising from the handling activities (including storage, collection, transportation and disposal of chemical waste) are expected to be minimal with the implementation of appropriate mitigation measures as recommended. 	Obs	Rem
6.1 & 10.7.1	<p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separated from inert C&D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</p>	✓	✓
Land Contamination (Construction)			
7.1 & 10.8.1	<p>The potential for land contamination issues at the TST Fire Station due to its future relocation will be confirmed by site investigation after land acquisition. Where necessary, mitigation measures for minimising potential exposure to contaminated materials (if any) or remediation measures will be identified. If contaminated land is identified (e.g., during decommissioning of fuel oil storage tanks) after the commencement of works, mitigation measures are proposed in order to minimise the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially contaminated materials.</p> <p>The following measures are proposed for excavation and transportation of contaminated material:</p> <ul style="list-style-type: none"> To minimize the chance for construction workers to come into contact with any contaminated materials, bulk earth-moving excavation equipment should be employed; Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when interacting directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site; Stockpiling of contaminated excavated materials on site should be avoided as far as possible; 	N/A	N/A
		N/A	N/A
		N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	<ul style="list-style-type: none"> The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out; Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater; Truck bodies and tailgates should be sealed to stop any discharge; Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping; Speed control for trucks carrying contaminated materials should be exercised; Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and Maintain records of waste generation and disposal quantities and disposal arrangements. 	N/A	N/A
Ecological Impact (Construction)			
No mitigation measure is required.			
Landscape and Visual Impact (Construction)			
Table 9.1 & 10.8 (CM1)	Trees should be retained in situ on site as far as possible. Should tree removal be unavoidable due to construction impacts, trees will be transplanted or felled with reference to the stated criteria in the Tree Removal Applications to be submitted to relevant government departments for approval in accordance to ETWB TCW No. 29/2004 and 3/2006.	Obs	N/A
Table 9.1 & 10.8 (CM2)	Compensatory tree planting shall be incorporated to the proposed project and maximize the new tree, shrubs and other vegetation planting to compensate tree felled and vegetation removed. Also, implementation of compensatory planting should be of a ratio not less than 1:1 in terms of quality and quantity within the site.	N/A	N/A
Table 9.1 & 10.8 (CM3)	Buffer trees for screening purposes to soften the hard architectural and engineering structures and facilities.	N/A	N/A
Table 9.1 & 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 & 10.8 (CM5)	Roof greening by means of intensive and extensive green roof to maximize the green coverage and improve aesthetic appeal and visual quality of the building/structure.	N/A	N/A
Table 9.1 & 10.8 (CM6)	Sensitive streetscape design should be incorporated along all new roads and streets.	N/A	N/A

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

N/A - Not Applicable

✓ - Implemented

Obs - Observed

Rem - Reminder

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

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

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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting month	0	1	0
From 31 October 2015 to end of the reporting month	3	1	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	4	0	0