Development at West Kowloon Cultural District

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

June 2016

Mott MacDonald

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

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Date 13 June 2016

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Executive Summary

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

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

This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 May to 31 May 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 5, 13, 18 and 26 May 2016 for M+ Museum and 4, 11, 20 and 25 May 2016 for Lyric Theatre Complex to confirm the implementation measures undertaken by the Contractors in the reporting month The outcomes are presented in **Section 4** and the status of implementation of mitigation measures in the site is shown in **Appendix J**.

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

Record of Complaints

No environmental complaint was recorded in the reporting month.

Record of Notification of Summons and Successful Prosecutions

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

Future Key Issues

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

- Excavation
- Construction of pile caps
- Installation of lateral support
- Construction of slab
- Construction of water tank
- Construction of core wall

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

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

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

1 Introduction

1.1 Background

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

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

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

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

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

1.2 Project Organisation

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

1.3 Environmental Status in the Reporting Period

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

- Excavation
- Construction of pile caps
- Installation of lateral support
- Construction of slab
- Construction of water tank
- Construction of core wall
- Underground slab drainage and manholes

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

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

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

1.4 Summary of EM&A Requirements

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

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

Table 1.1: Summary of Impact EM&A Requirements

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

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

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

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

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

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

2 Impact Monitoring Methodology

2.1 Introduction

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

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

2.2 Air Quality

2.2.1 Monitoring Parameters, Frequency and Duration

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

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

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

2.2.2 Monitoring Locations

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

Table 2.2: Air Quality Monitoring Station

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

2.2.3 Monitoring Equipment

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

Table 2.3: TSP Monitoring Equipment

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

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

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

2.2.4 Monitoring Methodology

24-hour TSP Monitoring

Installation

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

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

Preparation of Filter Papers

- Glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected.
- The filters used are specified to have a minimum collection efficiency of 99 percent for 0.3 µm (DOP) particles.

- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C with relative humidity (RH) < 50% and was not variable by more than ±5 %. A convenient working RH was 40%. All preparation of filters was done by Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory.

Field Monitoring Procedures

- The power supply was checked to ensure the HVS works properly.
- The filter holder and the area surrounding the filter were cleaned.
- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- The shelter lid was closed and was secured with the aluminium strip.
- The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flow rate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.3 m^3/min. The range specified in the EM&A Manual was between 0.6-1.7 m^3/min.
- The programmable timer was set for a sampling period of 24 hours, and the starting time, weather condition and the filter number were recorded.
- The initial elapsed time was recorded.
- At the end of sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed.
- All monitoring information was recorded on a standard data sheet.
- Filters were sent to a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory for analysis.

Maintenance and Calibration

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

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

Field Monitoring

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

- Turn the power on.

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

Maintenance and Calibration

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

Weather Condition

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

2.3 Noise

2.3.1 Monitoring Parameters, Frequency and Duration

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

Table 2.4: Noise Monitoring Parameters, Period and Frequency

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

2.3.2 Monitoring Location

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

Table 2.5: Noise Monitoring Station

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

2.3.3 Monitoring Equipment

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

Table 2.6: Noise Monitoring Equipments

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

2.3.4 Monitoring Methodology

Field Monitoring

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

Maintenance and Calibration

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

Weather Condition

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

2.4 Landscape and Visual

2.4.1 Monitoring Program

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

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

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

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

3 Monitoring Results

3.1 Impact Monitoring

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

3.2 Air Quality Monitoring

3.2.1 1-hour TSP

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

Table 3.1: Summary of 1-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	1-hour TSP (µg/m^3)			Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
			1st Result	2nd Result	3rd Result			
AM1	05-May-16	10:42	79	86	90	59-94	273.7	500
	11-May-16	10:38	65	71	77			
	17-May-16	10:48	62	59	70			
	23-May-16	10:42	80	86	94			
	27-May-16	8:02	64	71	66			
AM2	05-May-16	10:52	119	133	127	69-133	274.2	500
	11-May-16	10:50	73	91	86			
	17-May-16	11:00	91	108	87			
	23-May-16	10:52	81	87	95			
	27-May-16	8:12	72	80	69			

3.2.2 24-hour TSP

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

Table 3.2: Summary of 24-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	Monitoring Results (µg/m^3)	Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
AM1	05-May-16	10:40	58	51-58	143.6	260
	11-May-16	10:39	58			
	17-May-16	10:50	51			
	23-May-16	10:40	57			
	27-May-16	08:00	55			
AM2	05-May-16	10:55	99	66-99	151.1	260

Monitoring Station	Monitoring Date	Start Time	Monitoring Results ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
	11-May-16	10:52	77			
	17-May-16	11:02	66			
	23-May-16	10:54	68			
	27-May-16	08:17	67			

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	L_{eq} (30 mins), dB(A)	Limit Level for L_{eq} (dB(A))
05-May-16	14:00	14:30	69.1	75
11-May-16	14:00	14:30	68.0	
17-May-16	14:00	14:30	68.6	
23-May-16	14:00	14:30	68.6	

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 15, 22 and 29 May 2016. Additional monitoring was carried out during the restricted hours on 15, 22 and 29 May 2016. The measured L_{eq} (30 mins) is in the range of 67.4 – 68.2 dB(A). Construction Noise Permit for the works carried out during restricted hours was obtained and listed in **Table 4.3**.

3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 13 and 26 May 2016 for M+ Museum and 11 and 25 May 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 5, 13, 18 and 26 May 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 13 May 2016. A EPD site inspection with Contractor was conducted on 25 May 2016 at M+ Museum. Items including wetseps, soakaway pit, quality of effluent at discharge point and chemical waste store were inspected. No non-compliance was recorded during the site inspection. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.1**.

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

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
28 Apr 2016	Waste management	Oil stain was found on the ground near the discharge point and other site area. The contractor was reminded to clear the oil and treat it as chemical waste. The contractor should take appropriate measures to prevent any oil leakage and any oil entering the discharge point.	The oil stain previously observed on the ground near the discharge point and other site area was removed.	4 May 2016
5 May 2016	Water quality	The treated site runoff at wetsep was observed turbid. The contractor was reminded to ensure the proper function of wetsep for site runoff treatment before discharging.	The treated site runoff was found clear.	9 May 2016
13 May 2016	Air quality	The ground was observed dry and dusty. The contractor was reminded to enhance water spraying frequency to reduce dust impact.	The ocntractor has enhanced water spraying frequency.	18 May 2016
13 May 2016	Water quality	The pH meter of westsep no. 2 was found to be in high pH range. The contractor was reminded to ensure the proper functioning of the wetsep.	The pH of the treated wastewater at wetsep no. 2 was in acceptable pH range.	24 May 2016
13 May 2016	Water quality	The contractor was reminded to put sand bags around the u-channel near the discharge point to prevent any oil or soil from flowing directly into the discharge point.	Sand bags were provided at u-channel near the discharge point.	24 May 2016
13 May 2016	Waste management	Soil was observed around public road at Gate 1. The contractor was reminded to remove the soil.	Soil previously observed around public road at gate 1 was removed.	18 May 2016
18 May 2016	Waste management	The contractor was reminded to clear the stagnant water/ chemical waste in drip trays of chemicals placed at wetsep no.2 and no. 3.	The stagnant water/ chemical waste in drip trays of chemicals placed at wetsep no. 2 and no. 3 has been removed.	24 May 2016

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
26 May 2016	Waste management	Muddy trail was observed at gate 1 vehicular entrance. The contractor was remined to clear the muddy trail and ensure all wheels are properly washed before the vehicles leave the site.	Muddy trial at gate 1 vehicular entrance has been cleared.	27 May 2016
26 May 2016	Waste management	Chemicals without drip trays were observed near the chemical store. The contractor was reminded to provide drip trays for chemicals.	Chemicals put near the chemical store has been put inside the chemical store.	27 May 2016
26 May 2016	Waste management	Stagnant water was again observed in drip tray of chemical placed at wetsep no. 2. The contractor was reminded to clear the stagnant water in drip trays more frequently.	Stagnant water has been removed in drip tray of chemical placed at wetsep no. 2.	27 May 2016

4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 4, 11, 20 and 25 May 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 20 May 2016. No non-compliance was recorded during the site inspection. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.2**.

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

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
27 Apr 2016	Waste management	Oil was found on the ground. The contractor was reminded to clear the oil and treat it as chemical waste.	The oil previosuly found on the ground was cleared and disposed as chemical waste.	28 Apr 2016
4 May 2016	Waste management	Stagnant water was found in the drip trays of the air compressors. The contractor was reminded to clear the stagnant water.	The stagnant water previously observed at the drip trays of the air compressors was removed.	5 May 2016
4 May 2016	Waste management	Oil was found on the ground. The contractor was reminded to clear the oil and treat it as chemical waste.	The oil previously observed on the ground was removed.	5 May 2016
11 May 2016	Waste management	Some chemical drums were found without chemical labels. The contractor was reminded to provide chemical labels for all chemical drums in site area.	Chemical labels were provided for the chemical drums.	12 May 2016
20 May 2016	Air quality	Intermittent dark smoke was observed in the exhaust from a generator. The Contractor was reminded to ensure that any necessary maintenance is provided accordingly.	The contractor has checked the water pump and no dark smoke was emitted.	24 May 2016

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
20 May 2016	Water quality	Muddy trail was observed at the vehicular site entrance. The Contractor was reminded to clear the muddy trail and ensure proper wheel wash for vehicles leaving the site.	The contractor has cleared the muddy trail at the vehicular site entrance.	24 May 2016
25 May 2016	Waste management	The contractor was reminded to securly seal the outer sides of the chemical storage area to prevent any leakage of chemicals.	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, 67.4 ton and 688.1 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 62.3 ton of general refuse was disposed of at SENT landfill. 61.5 ton of metals, 0.4 ton of paper/cardboard packaging, 0 ton of plastic and 33.6 ton of timber were collected by recycling contractors in the reporting month. 112.0 ton of inert C&D materials was reused on site. 23,216.0 ton of inert C&D materials was reused in other projects. 0 ton of chemical wastes was collected by licensed contractors in the reporting period.

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

4.2.2 Lyric Theatre Complex

As advised by the Contractor, 1098.7 ton and 11389.1 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 respectively, while 60.5 ton of general refuse was disposed of at SENT landfill. 34.0 ton of metals, 0 ton of paper/cardboard packaging, 0 ton of plastic and 0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 0 ton of inert C&D materials was reused in other projects. 0.7 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-RE0399-16	28-Apr-16	27-Oct-16	Valid	
Wastewater Discharge License				
WT00023633-2016	4-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
394083	7-Oct-15	--	Notified	--

4.3.2 Lyric Theatre Complex

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

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Chemical Waste Producer Registration				
5213-217-G2347-39	17-Feb-16	--	Valid	--
Billing Account Construction Waste Disposal				

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
7024189	25-Jan-16	--	Account Active	--
Construction Noise Permit				
GW-RE0402-16	25-Apr-16	24-Oct-16	Valid	--
Wastewater Discharge License				
WT00023648-2016	9-Mar-16	31-Mar-2021	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
398075	18-Jan-16	--	Notified	--

4.4 Recommended Mitigation Measures

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

4.4.1 M+ Museum

Chemical and Waste Management

- All chemicals store on site should be provided with drip trays.
- Drip trays should be kept in good condition.
- Chemical waste in drip trays should be frequently removed and ensure no leakage of oil/ chemicals from machines.
- Provide proper vehicle washing facility for vehicles leaving the site.

Air Quality

- Maintain high standard of housekeeping to prevent emission of fugitive dust.
- Enhance water spraying frequency to reduce dust impact.

Water Quality

- Wetsep units should be regularly checked to ensure proper function of the system to treat wastewater or runoff before discharge
- No leakage of site runoff from the site near site boundary and discharge point should be ensured.

4.4.2 Lyric Theatre Complex

Chemical and Waste Management

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

Air Quality

- Machines should be regularly checked and maintained to reduce emission of fugitive dust.

Water Quality

- Provide proper vehicle washing facility for vehicles leaving the site.

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 April 2016	13 May 2016

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

6.1 Record on Non-compliance of Action and Limit Levels

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

6.2 Record on Environmental Complaints Received

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

6.3 Record on Notifications of Summons and Successful Prosecution

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

7 Future Key Issues

7.1 Construction Works for the Coming Month(s)

7.1.1 M+ Museum

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

- Excavation
- Construction of pile caps
- Installation of lateral support
- Construction of slab
- Construction of water tank
- Construction of core wall

7.1.2 Lyric Theatre Complex

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

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

7.2 Key Issues for the Coming Month

7.2.1 M+ Museum

Key issues to be considered in the coming month include:

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

7.2.2 Lyric Theatre Complex

Key issues to be considered in the coming month include:

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

7.3 Monitoring Schedule for the Coming Month

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

8 Conclusions and Recommendations

8.1 Conclusions

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

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

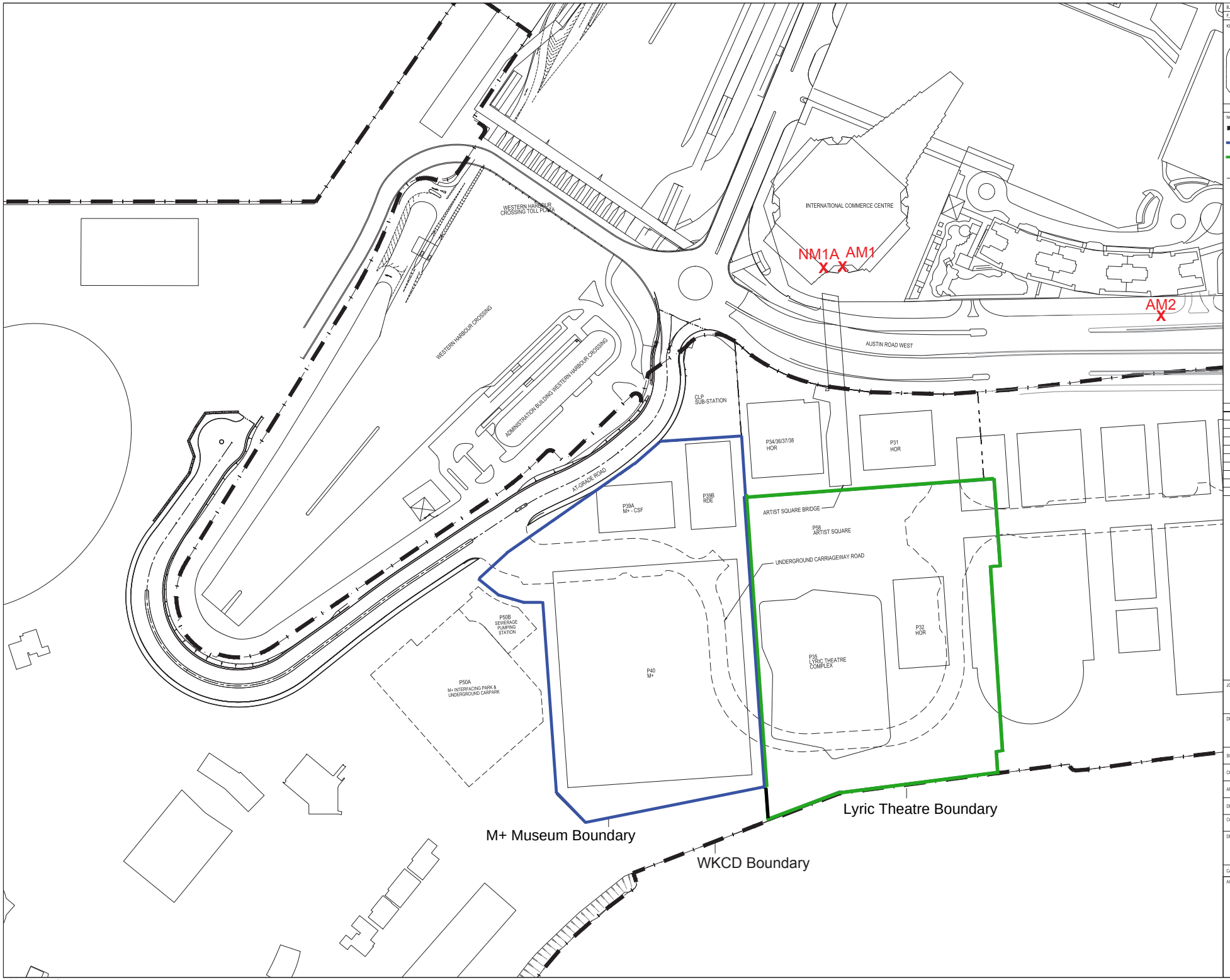
No environmental complaint and no notifications of summons or successful prosecution were received during the reporting month.

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

8.2 Recommendations

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

Figure 1 Site Layout Plan and Monitoring Stations



B.D. REF:

F.S.D. REF:

KEY PLAN

KEY PLAN

NOTES:

WKCD BOUNDARY

M+ MUSEUM BOUNDARY

LYRIC THEATRE BOUNDARY

BOUNDARY OF UNDERPASS ROAD SERVING THE PLANNED WKCD

X CONSTRUCTION AIR/NOISE MONITORING STATION

REV.	DATE	DESCRIPTION	INITIAL

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

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

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

CONTRACT NO.

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

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

AUTHORITY

westKowloon 西九文化區

A1 (841mm x 594mm) Sheet Size

Appendices

Appendix A. Project Organisation

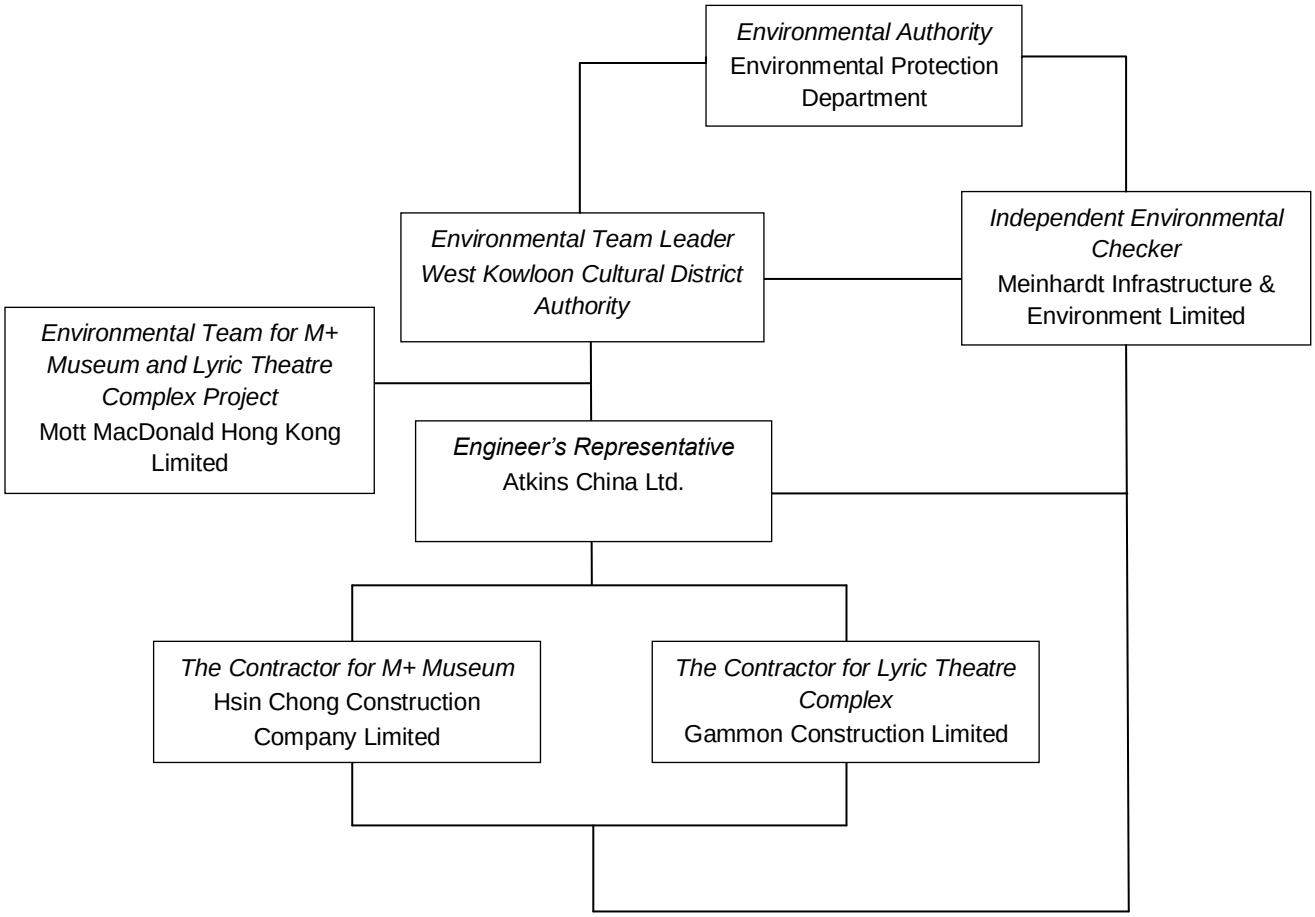


Table A-1: Contact information

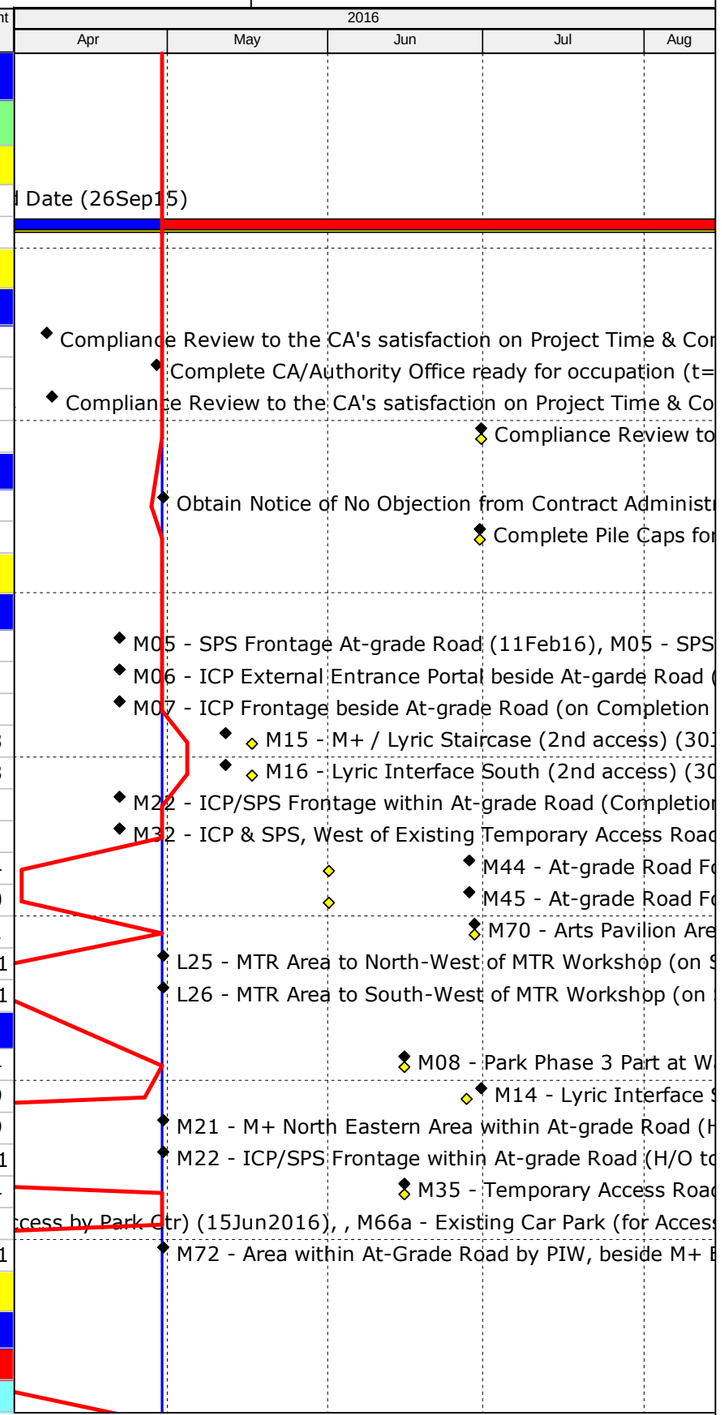
Company Name	Role	Name	Telephone
Atkins China Ltd.	Senior Resident Engineer	Mr. Alfred Lee	5401 7289
Meinhardt Infrastructure & Environment Limited	IEC	Mr. Fredrick Leong	2859 1739
Hsin Chong Construction Company Limited	Environmental Manager	Mr. Leo Chow	9266 6855
Gammon Construction Limited	Environmental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

Appendix B. Tentative Construction Programme

M+ Museum

(3MRP) 3-Months Rolling Programme Status 30 April 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
3MRP Three Months Rolling Programme Update (30 Apr 2016)									
Contract Key Dates & Milestones									
Contract Dates									
CP01	Contract Award Date (26Sep15)	0	26-Sep-15		26-Sep-15 A		100%	0	
CP02	Contract Period (1218 days)	1218	26-Sep-15	25-Jan-19	26-Sep-15 A	25-Jan-19	18%	0	0
Schedule of Milesones									
Cost Centre A - Preliminaries and General Requirements									
MSA.03	Compliance Review to the CA's satisfaction on Proje	0		31-Dec-15		08-Apr-16 A	100%	-3	
MSA.04	Complete CA/Authority Office ready for occupation (	0		29-Feb-16		29-Apr-16 A	100%	-1	
MSA.05	Compliance Review to the CA's satisfaction on Proje	0		31-Mar-16		09-Apr-16 A	100%	0	
MSA.06	Compliance Review to the CA's satisfaction on Proje	0		30-Jun-16		30-Jun-16	0%	0	6
Cost Centre C - Public Works and Tunnel Protection Works									
MSC.01	Obtain Notice of No Objection from Contract Admini	0		29-Feb-16		30-Apr-16	0%	-2	34
MSC.03	Complete Pile Caps for Trusses 1, 2 & 5 (t=M9)	0		30-Jun-16		30-Jun-16	0%	0	32
Interface Dates									
Access Date									
AD1040	M05 - SPS Frontage At-grade Road (11Feb16)	0	11-Feb-16		22-Apr-16 A		100%	-71	
AD1050	M06 - ICP External Entrance Portal beside At-garde	0	11-Feb-16		22-Apr-16 A		100%	-57	
AD1060	M07 - ICP Frontage beside At-grade Road (on Comp	0	11-Feb-16		22-Apr-16 A		100%	-57	
AD1160	M15 - M+ / Lyric Staircase (2nd access) (30Jun16)	0	17-May-16		12-May-16		0%	5	653
AD1180	M16 - Lyric Interface South (2nd access) (30Jun16)	0	17-May-16		12-May-16		0%	5	653
AD1240	M22 - ICP/SPS Frontage within At-grade Road (Com	0	11-Feb-16		22-Apr-16 A		100%	-57	
AD1320	M32 - ICP & SPS, West of Existing Temporary Acces	0	11-Feb-16		22-Apr-16 A		100%	-57	
AD1410	M44 - At-grade Road Footpath at ICP / SPS Frontage	0	01-Jun-16		28-Jun-16		0%	-27	454
AD1420	M45 - At-grade Road Footpath along M+ Basement	0	01-Jun-16		28-Jun-16		0%	-27	410
AD1530	M70 - Arts Pavilion Area on M+ side of M+ / Park In	0	29-Jun-16		29-Jun-16		0%	0	941
AD1590	L25 - MTR Area to North-West of MTR Workshop (or	0	31-Mar-16		30-Apr-16		0%	-30	1001
AD1600	L26 - MTR Area to South-West of MTR Workshop (o	0	31-Mar-16		30-Apr-16		0%	-30	1001
Vacation Date									
VD1070	M08 - Park Phase 3 Part at Waterfront (15Jun2016)	0		15-Jun-16		15-Jun-16	0%	0	954
VD1130	M14 - Lyric Interface South, GL 6-12 (H/O to Lyric)	0		27-Jun-16		30-Jun-16	0%	-3	939
VD1230	M21 - M+ North Eastern Area within At-grade Road	0		27-Nov-15		30-Apr-16	0%	-154	169
VD1240	M22 - ICP/SPS Frontage within At-grade Road (H/O	0		30-Nov-15		30-Apr-16	0%	-151	1001
VD1330	M35 - Temporary Access Road Junction at KVB (for	0		15-Jun-16		15-Jun-16	0%	0	954
VD1570	M66a - Existing Car Park (for Access by Park Ctr) (1	0		26-Sep-15		26-Sep-15 A	100%	0	
VD1630	M72 - Area within At-Grade Road by PIW, beside M+	0		30-Nov-15		30-Apr-16	0%	-151	1001
Interface Schedule (Refer to Interface Schedule - Appendix D1 20-Nov-2015)									
Lyric Theatre Complex and Extended Basement (Lyric)									
Along Interface South of AEL									
DCS Basement Area									



◇ Baseline Milestone
Primary Baseline
◆ Milestone
Non-Critical
Critical Bar

West Kowloon Cultural District Authority

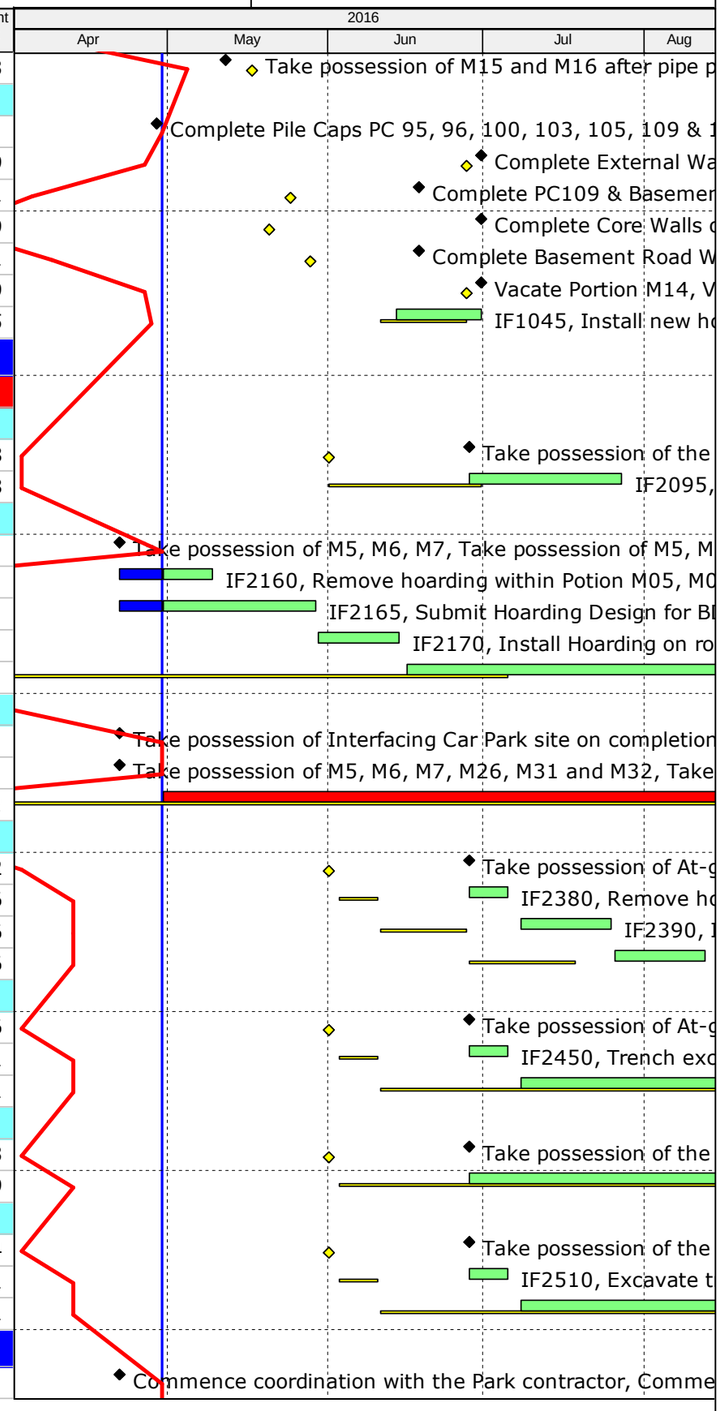
(3MRP) 3-Months Rolling Programme Status 30 April 2016

HSIN新昌 CHONG

Date	Revision	Checked	Approved
03-Dec-15	(3MRP) 3-Months Rolling Prog @ ...	Chris / E...	Leo Harnett
06-Jan-16	(3MRP) 3-Months Rolling Prog @ ...	Chris / E...	Leo Harnett
13-Feb-16	(3MRP) 3-Months Rolling Prog @ ...	Chris / E...	Desmond
17-Mar-16	(3MRP) 3-Months Rolling Prog @ ...	Jojo	Desmond

(3MRP) 3-Months Rolling Programme Status 30 April 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
IF1030	Take possession of M15 and M16 after pipe piles an	0	17-May-16		12-May-16		0%	5	653
Grid 6 & 12 Area									
IF1032	Complete Pile Caps PC 95, 96, 100, 103, 105, 109 &	0		17-Feb-16		29-Apr-16 A	100%	-71	
IF1034	Complete External Wall from B1/F to G/F Level betw	0		27-Jun-16		30-Jun-16	0%	-3	939
IF1036	Complete PC109 & Basement Road Wall between PC	0		24-May-16		18-Jun-16	0%	-25	951
IF1038	Complete Core Walls on PC96 to G/F Level	0		20-May-16		30-Jun-16	0%	-41	939
IF1039	Complete Basement Road Wall between PC96, 103	0		28-May-16		18-Jun-16	0%	-21	951
IF1040	Vacate Portion M14	0		27-Jun-16		30-Jun-16	0%	-3	939
IF1045	Install new hoarding between Portion M14 & M14a f	12	11-Jun-16	27-Jun-16	14-Jun-16	30-Jun-16	0%	-2	675
PIW Phase 1									
Civil & Structual Interface with PIW At-Grade Road									
M+ North West Boundary									
IF2090	Take possession of the At-grade road footway within	0	01-Jun-16		28-Jun-16		0%	-27	688
IF2095	Submit Hoarding Design for BD Approval	30	01-Jun-16	30-Jun-16	28-Jun-16	27-Jul-16	0%	-27	688
Interface Car Park Utilities Works									
IF2010	Take possession of M5, M6, M7	0	11-Feb-16		22-Apr-16 A		100%	-71	
IF2160	Remove hoarding within Potion M05, M06 & M07	5	11-Feb-16	16-Feb-16	22-Apr-16 A	09-May-16	0%	-64	75
IF2165	Submit Hoarding Design for BD Approval	30	11-Feb-16	11-Mar-16	22-Apr-16 A	29-May-16	0%	-79	96
IF2170	Install Hoarding on road-side edge of footway (500m	10	12-Mar-16	23-Mar-16	30-May-16	14-Jun-16	0%	-56	62
IF2180	Construct U/G utilities connections from footway to	70	24-Mar-16	05-Jul-16	16-Jun-16	29-Sep-16	0%	-56	62
Sewage Pump Station									
IF2270	Take possession of Interfacing Car Park site on com	0	11-Feb-16		22-Apr-16 A		100%	-71	
IF2280	Take possession of M5, M6, M7, M26, M31 and M32	0	11-Feb-16		22-Apr-16 A		100%	-71	
IF2290	Construction of SPS incl. ELS, Structure, T&C	361	11-Feb-16	22-Jun-17	30-Apr-16	28-Sep-17	0%	-64	-62
Water Main Interface with PIW									
IF2370	Take possession of At-grade road within Portion M45	0	01-Jun-16		28-Jun-16		0%	-27	902
IF2380	Remove hoarding fixed to the sheet pile	5	03-Jun-16	10-Jun-16	28-Jun-16	05-Jul-16	0%	-17	646
IF2390	Install hoarding on road-side edge of footway (500m	12	11-Jun-16	27-Jun-16	08-Jul-16	25-Jul-16	0%	-17	646
IF2400	Construct two DN150 DI fresh water, and one DN10	12	28-Jun-16	18-Jul-16	26-Jul-16	12-Aug-16	0%	-17	646
Towngas Interface with PIW									
IF2440	Take possession of At-grade road within Portion M44	0	01-Jun-16		28-Jun-16		0%	-27	756
IF2450	Trench excavation for gas pipe installation	5	03-Jun-16	10-Jun-16	28-Jun-16	05-Jul-16	0%	-17	541
IF2460	Construct portion of M+ & RDE building gas main (b	130	11-Jun-16	13-Dec-16	08-Jul-16	05-Jan-17	0%	-17	541
Power Interface with PIW									
IF2230	Take possession of the completed At-grade road pav	0	01-Jun-16		28-Jun-16		0%	-27	753
IF2240	Excavate trenches for laying 11kV & 132kV cable by	73	03-Jun-16	22-Sep-16	28-Jun-16	20-Oct-16	0%	-17	539
Telecoms Interface with PIW									
IF2500	Take possession of the completed At-grade road pav	0	01-Jun-16		28-Jun-16		0%	-27	454
IF2510	Excavate trenches for laying telecom ducts	5	03-Jun-16	10-Jun-16	28-Jun-16	05-Jul-16	0%	-17	321
IF2520	Lay ducts & leave connecting ends for PIW drawpit c	72	11-Jun-16	27-Sep-16	08-Jul-16	25-Oct-16	0%	-17	321
Park									
IF3000	Commence coordination with the Park contractor	0	15-Jan-16		22-Apr-16 A		100%	-98	



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West Kowloon Cultural District Authority

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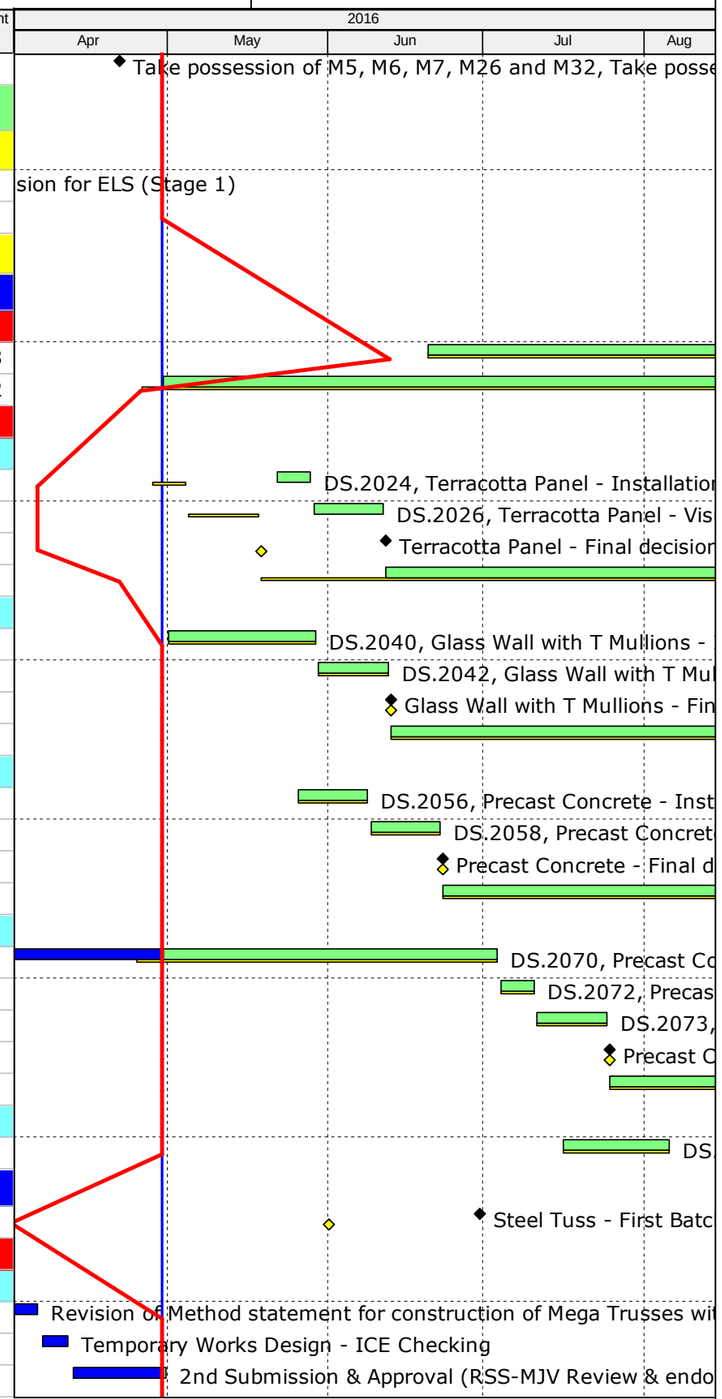
17-Mar-16	(3MRP) 3-Months Rolling Prog @ ...	Jojo	Desmond

(3MRP) 3-Months Rolling Programme Status 30 April 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
IF3010	Take possession of M5, M6, M7, M26 and M32	0	11-Feb-16		22-Apr-16 A		100%	-71	
Preliminaries									
Statutory Procedures and Consents for Work Commencement									
FB01	SSP Submission for ELS (Stage 1)	0	26-Sep-15		26-Sep-15 A		100%	0	
FB03	Submit form BA8	5	26-Sep-15	30-Sep-15	26-Sep-15 A	30-Sep-15 A	100%	1	
Design & Procurements									
External Facade Pre-Construction									
BD Submission, Consent & Approval									
DS.2006	Embed BD Submission, consent & appvl for M+ Tow	136	20-Jun-16	16-Dec-16	20-Jun-16	02-Nov-16	0%	44	193
DS.2008	BD Submission to consultant for M+ Podium & Tower	111	26-Apr-16	14-Aug-16	30-Apr-16	18-Aug-16	0%	-4	302
Materials Submission & Approval									
Terracotta Facade Panel									
DS.2024	Terracotta Panel - Installation of Mock-up sample	7	28-Apr-16	04-May-16	22-May-16	28-May-16	0%	-24	29
DS.2026	Terracotta Panel - Visual Mock-up Inspection & Appr	14	05-May-16	18-May-16	29-May-16	11-Jun-16	0%	-24	29
DS.2027	Terracotta Panel - Final decision & approval from MJ	0	19-May-16		12-Jun-16		0%	-24	29
DS.2028	Terracotta Panel - Ordering of Terracotta Materials	120	19-May-16	01-Oct-16	12-Jun-16	09-Oct-16	0%	-8	29
Glass Wall with T Mullion									
DS.2040	Glass Wall with T Mullions - Installation of Mock-up	29	01-May-16	29-May-16	01-May-16	29-May-16	0%	0	94
DS.2042	Glass Wall with T Mullions - Inspection & Approval o	14	30-May-16	12-Jun-16	30-May-16	12-Jun-16	0%	0	94
DS.2043	Glass Wall with T Mullions - Final decision & approva	0	13-Jun-16		13-Jun-16		0%	0	94
DS.2044	Glass Wall with T Mullions - Ordering of Glass Materi	107	13-Jun-16	27-Sep-16	13-Jun-16	27-Sep-16	0%	0	94
Precast Concrete for M+ Tower									
DS.2056	Precast Concrete - Installation of Mock-up sample	14	26-May-16	08-Jun-16	26-May-16	08-Jun-16	0%	0	67
DS.2058	Precast Concrete - Visual Mock-up Inspection & App	14	09-Jun-16	22-Jun-16	09-Jun-16	22-Jun-16	0%	0	67
DS.2059	Precast Concrete - Final decision & approval from M	0	23-Jun-16		23-Jun-16		0%	0	67
DS.2060	Precast Concrete - Ordering of Precast Panel Materia	124	23-Jun-16	24-Oct-16	23-Jun-16	24-Oct-16	0%	0	67
Precast Concrete for M+ Podium									
DS.2070	Precast Concrete - Visual Mock-Up (Ordering, produ	70	25-Apr-16	03-Jul-16	01-Apr-16 A	03-Jul-16	50%	0	35
DS.2072	Precast Concrete - Installation of Mock-up sample	7	04-Jul-16	10-Jul-16	04-Jul-16	10-Jul-16	0%	0	35
DS.2073	Precast Concrete - Visual Mock-up Inspection & App	14	11-Jul-16	24-Jul-16	11-Jul-16	24-Jul-16	0%	0	35
DS.2074	Precast Concrete - Final decision & approval from M	0	25-Jul-16		25-Jul-16		0%	0	35
DS.2075	Precast Concrete - Ordering of Precast Panel for Pod	124	25-Jul-16	25-Nov-16	25-Jul-16	25-Nov-16	0%	0	35
LED Lightings									
DS.2186	LED Lightings -Visual Mock-up Inspection & Approval	21	16-Jul-16	05-Aug-16	16-Jul-16	05-Aug-16	0%	0	29
Structural Steel Truss									
DS.1050	Steel Tuss - First Batch Arrival on Site (Contract Rec	0	01-Jun-16		30-Jun-16		0%	-29	48
Design, Shop Dwgs, Materials, Method Statement & Welding									
Method statement for Construction of Mega Trusses with Temporary Works Design									
DS.1030.02	Revision of Method statement for construction of Me	6			01-Apr-16 A	06-Apr-16 A	100%		
DS.1030.02b	Temporary Works Design - ICE Checking	6			07-Apr-16 A	12-Apr-16 A	100%		
DS.1030.03	2nd Submission & Approval (RSS-MJV Review & end	14			13-Apr-16 A	30-Apr-16	50%		3



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West Kowloon Cultural District Authority

(3MRP) 3-Months Rolling Programme Status 30 April 2016

HSIN新昌 CHONG

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13-Feb-16	(3MRP) 3-Months Rolling Prog @ ...	Chris / E...	Desmond
17-Mar-16	(3MRP) 3-Months Rolling Prog @ ...	Jojo	Desmond

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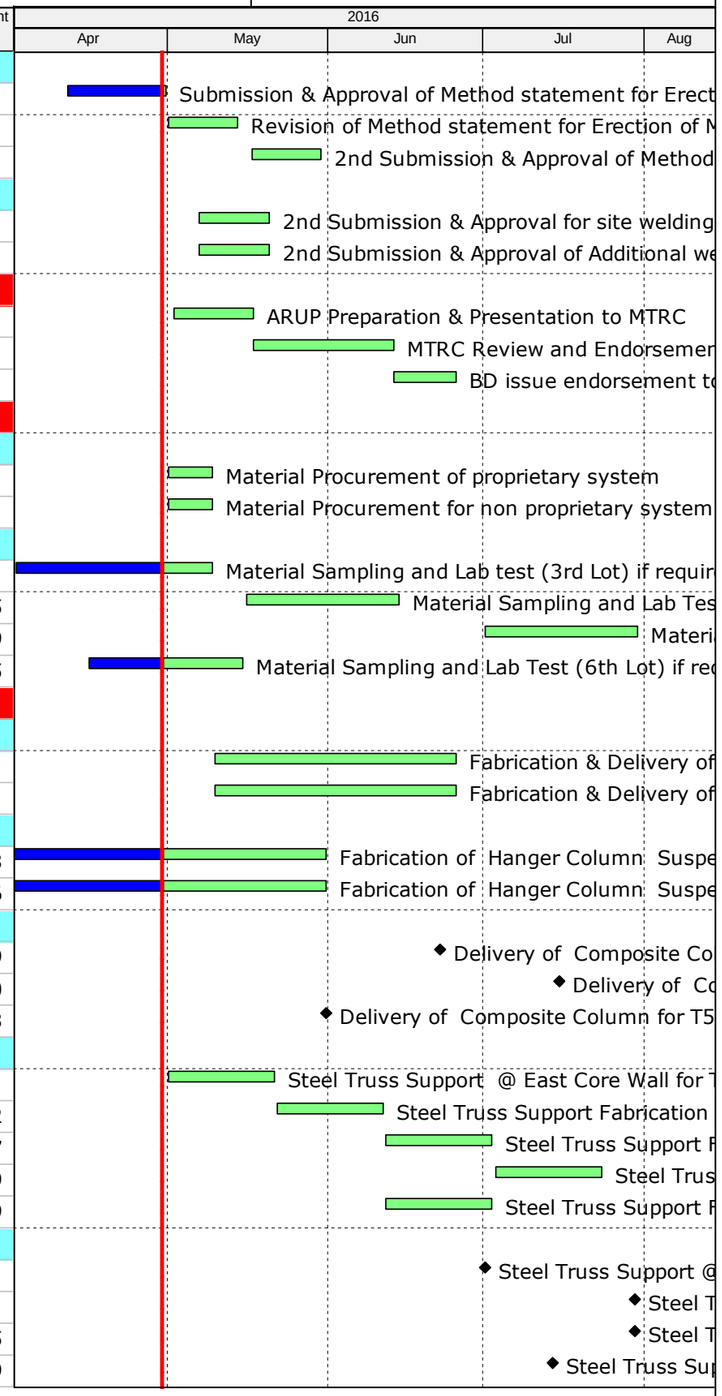
Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
Method Statement for Erection									
DS.1030.30	Submission & Approval of Method statement for Erec	14			12-Apr-16 A	30-Apr-16	90%		90
DS.1030.30b	Revision of Method statement for Erection of Mega T	14			01-May-16	14-May-16	0%		90
DS.1030.30c	2nd Submission & Approval of Method statement for	14			17-May-16	30-May-16	0%		90
Welding Procedure									
DS.1030.71	2nd Submission & Approval for site welding procedu	14			07-May-16	20-May-16	0%		39
DS.1030.92	2nd Submission & Approval of Additional welding prc	14			07-May-16	20-May-16	0%		39
Statutory Approval Status e.g. (BD & MTRC Approval)									
DS.7060b	ARUP Preparation & Presentation to MTRC	12			02-May-16	17-May-16	0%		3
DS.7060b10	MTRC Review and Endorsement for ARUP to submit	27			17-May-16	13-Jun-16	0%		3
DS.7060b11	BD issue endorsement to ARUP	12			13-Jun-16	25-Jun-16	0%		3
Materials Procurement & Testing									
Material Procurement - Temporary Works									
DS.1040.33	Material Procurement of proprietary system	9			01-May-16	09-May-16	0%		3
DS.1040.34	Material Procurement for non proprietary system	9			01-May-16	09-May-16	0%		3
Material Sampling and Lab Test									
DS.1040.50	Material Sampling and Lab test (3rd Lot) if required	29			02-Apr-16 A	09-May-16	20%		62
DS.1040.60	Material Sampling and Lab Test (4th Lot) if required	30			16-May-16	14-Jun-16	0%		955
DS.1040.65	Material Sampling and Lab Test (5th Lot) if required	30			01-Jul-16	30-Jul-16	0%		909
DS.1040.66	Material Sampling and Lab Test (6th Lot) if required	30			16-Apr-16 A	15-May-16	20%		985
Fabrication & Delivery To Site									
Proprietary & Non Proprietary System									
DS.1040.67	Fabrication & Delivery of proprietary system	47			10-May-16	25-Jun-16	0%		3
DS.1040.68	Fabrication & Delivery of non-proprietary system	47			10-May-16	25-Jun-16	0%		3
Hanger Column									
DS.1040.80	Fabrication of Hanger Column Suspended from me	43			01-Apr-16 A	31-May-16	10%		213
DS.1040.85	Fabrication of Hanger Column Suspended from RC	43			01-Apr-16 A	31-May-16	10%		106
Composite Column									
DS.1040.92	Delivery of Composite Column for T3	0				22-Jun-16	0%		159
DS.1040.93	Delivery of Composite Column for T4	0				15-Jul-16	0%		160
DS.1040.94	Delivery of Composite Column for T5	0				31-May-16	0%		113
Steel Truss Support Fabrication									
DS.1050.01	Steel Truss Support @ East Core Wall for Trusses #	21			01-May-16	21-May-16	0%		62
DS.1055	Steel Truss Support Fabrication for Truss # 1 & 2 (C	21			22-May-16	11-Jun-16	0%		102
DS.1056	Steel Truss Support Fabrication for Truss 3 (*C85 &	21			12-Jun-16	02-Jul-16	0%		127
DS.1090	Steel Truss Support Fabrication for Truss 4 (*C94 &	21			03-Jul-16	23-Jul-16	0%		159
DS.1110	Steel Truss Support Fabrication for Truss 5 (*C25)	21			12-Jun-16	02-Jul-16	0%		169
Steel Truss Support Delivery to Site									
DS.1050.10	Steel Truss Support @ East Core Wall for Trusses #	0			01-Jul-16		0%		28
DS.1055.10	Steel Truss Support for Truss # 1 & 2(Column 68 &	0			30-Jul-16		0%		54
DS.1090.10	Steel Truss Support for Truss # 3 (*C85 & C86)	0			30-Jul-16		0%		125
DS.1130.10	Steel Truss Support for Truss # 5 (*C25)	0			14-Jul-16		0%		169



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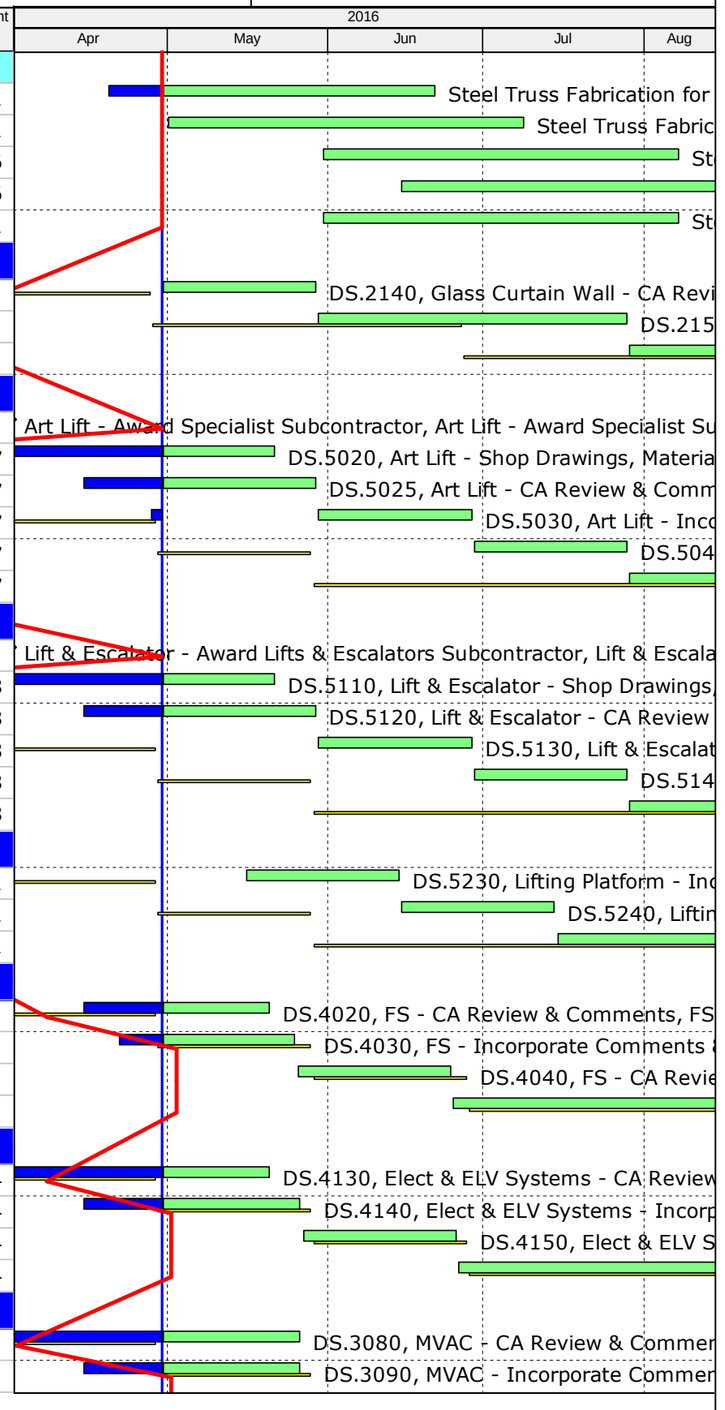
Steel Truss Members Fabrication									
DS.1060.1	Steel Truss Fabrication for Truss # 1	69			20-Apr-16 A	21-Jun-16	0%		931
DS.1070	Steel Truss Fabrication for Truss # 2	69			01-May-16	08-Jul-16	0%		931
DS.1080	Steel Truss Fabrication for Truss # 3	69			31-May-16	07-Aug-16	0%		886
DS.1150	Steel Truss Fabrication for Truss # 4	69			15-Jun-16	22-Aug-16	0%		886
DS.1160	Steel Truss Fabrication for Truss # 5	69			31-May-16	07-Aug-16	0%		901
Glass Curtain Wall									
DS.2140	Glass Curtain Wall - CA Review & Approval	30	29-Mar-16	27-Apr-16	30-Apr-16	29-May-16	0%	-32	63
DS.2150	Glass Curtain Wall - BD Submission and Approval	60	28-Apr-16	26-Jun-16	30-May-16	28-Jul-16	0%	-32	63
DS.2160	Glass Curtain Wall - Production and Delivery	200	27-Jun-16	12-Jan-17	29-Jul-16	13-Feb-17	0%	-32	63
Art Lift (LT-11 & LT-13)									
DS.5010	Art Lift - Award Specialist Subcontractor	0	01-Dec-15		01-Apr-16 A		100%	-122	
DS.5020	Art Lift - Shop Drawings, Materials & Method Statem	90	01-Dec-15	28-Feb-16	01-Apr-16 A	21-May-16	30%	-83	187
DS.5025	Art Lift - CA Review & Comments	30	29-Feb-16	29-Mar-16	15-Apr-16 A	29-May-16	30%	-61	187
DS.5030	Art Lift - Incorporate Comments & Resubmit	30	30-Mar-16	28-Apr-16	28-Apr-16 A	28-Jun-16	1%	-61	187
DS.5040	Art Lift - CA Review & Approval	30	29-Apr-16	28-May-16	29-Jun-16	28-Jul-16	0%	-61	187
DS.5050	Art Lift - Procurement and Delivery	300	29-May-16	24-Mar-17	29-Jul-16	24-May-17	0%	-61	187
Lifts and Escalator									
DS.5100	Lift & Escalator - Award Lifts & Escalators Subcontra	0	01-Dec-15		01-Apr-16 A		100%	-122	
DS.5110	Lift & Escalator - Shop Drawings, Materials & Metho	90	01-Dec-15	28-Feb-16	01-Apr-16 A	21-May-16	20%	-83	138
DS.5120	Lift & Escalator - CA Review & Comments	30	29-Feb-16	29-Mar-16	15-Apr-16 A	29-May-16	20%	-61	138
DS.5130	Lift & Escalator - Incorporate Comments & Resubmit	30	30-Mar-16	28-Apr-16	30-May-16	28-Jun-16	0%	-61	138
DS.5140	Lift & Escalator- CA Review & Approval	30	29-Apr-16	28-May-16	29-Jun-16	28-Jul-16	0%	-61	138
DS.5150	Lift & Escalator - Procurement and Delivery	300	29-May-16	24-Mar-17	29-Jul-16	24-May-17	0%	-61	138
Mechanical and Lifting Platform									
DS.5230	Lifting Platform - Incorporate Comments & Resubmit	30	30-Mar-16	28-Apr-16	16-May-16	14-Jun-16	0%	-47	201
DS.5240	Lifting Platform - CA Review & Approval	30	29-Apr-16	28-May-16	15-Jun-16	14-Jul-16	0%	-47	201
DS.5250	Lifting Platform - Procurement and Delivery	300	29-May-16	24-Mar-17	15-Jul-16	10-May-17	0%	-47	201
Fire Services									
DS.4020	FS - CA Review & Comments	30	30-Mar-16	28-Apr-16	15-Apr-16 A	20-May-16	16%	-22	65
DS.4030	FS - Incorporate Comments & Resubmit	30	29-Apr-16	28-May-16	22-Apr-16 A	25-May-16	3%	3	65
DS.4040	FS - CA Review & Approval	30	29-May-16	27-Jun-16	26-May-16	24-Jun-16	0%	3	65
DS.4050	FS - Procurement and Delivery	200	28-Jun-16	13-Jan-17	25-Jun-16	10-Jan-17	0%	3	65
Electrical and ELV Systems									
DS.4130	Elect & ELV Systems - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-Apr-16 A	20-May-16	14%	-22	114
DS.4140	Elect & ELV Systems - Incorporate Comments & Res	30	29-Apr-16	28-May-16	15-Apr-16 A	26-May-16	3%	2	114
DS.4150	Elect & ELV Systems - CA Review & Approval	30	29-May-16	27-Jun-16	27-May-16	25-Jun-16	0%	2	114
DS.4160	Elect & ELV Systems - Procurement and Delivery	150	28-Jun-16	24-Nov-16	26-Jun-16	22-Nov-16	0%	2	114
MVAC									
DS.3080	MVAC - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-Apr-16 A	26-May-16	10%	-28	84
DS.3090	MVAC - Incorporate Comments & Resubmit	30	29-Apr-16	28-May-16	15-Apr-16 A	26-May-16	4%	2	84



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(3MRP) 3-Months Rolling Programme Status 30 April 2016

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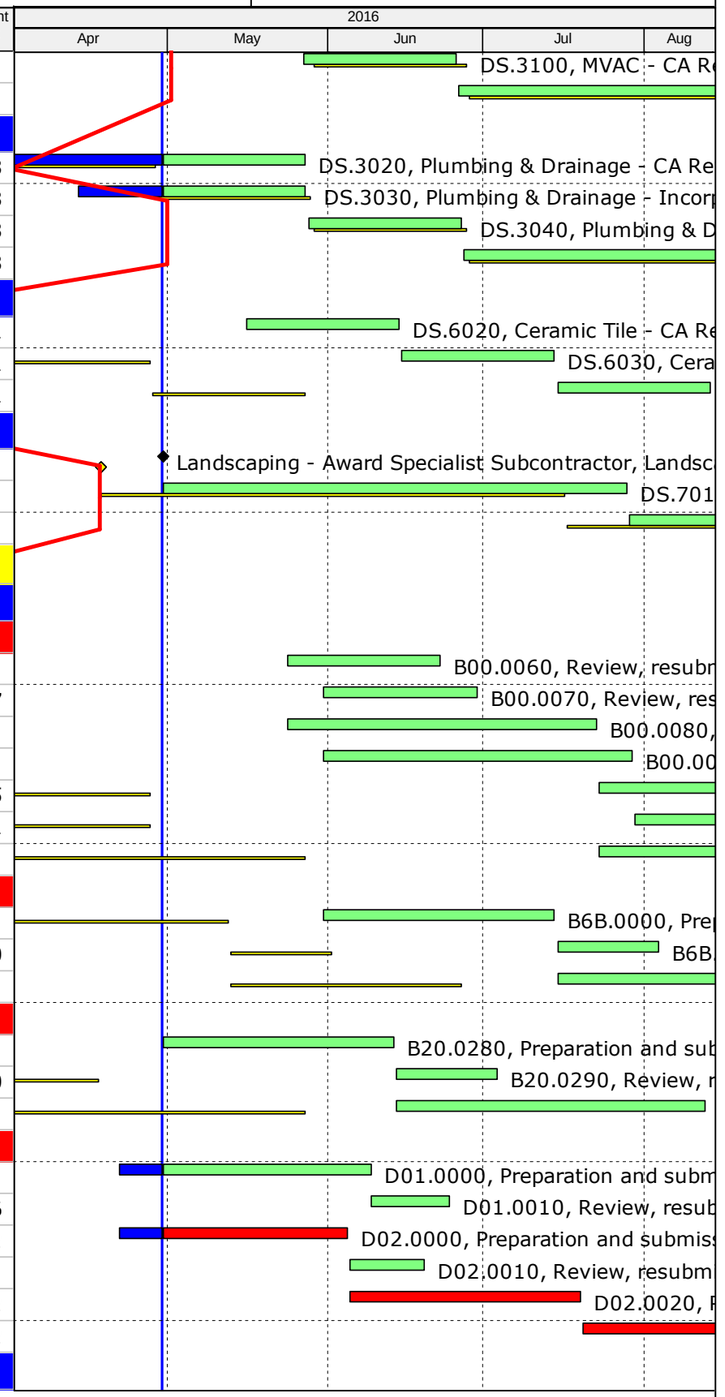
DS.3100	MVAC - CA Review & Approval	30	29-May-16	27-Jun-16	27-May-16	25-Jun-16	0%	2	84
DS.3110	MVAC - Procurement and Delivery	180	28-Jun-16	24-Dec-16	26-Jun-16	22-Dec-16	0%	2	84
Plumbing and Drainage									
DS.3020	Plumbing & Drainage - CA Review & Comments	30	30-Mar-16	28-Apr-16	01-Apr-16 A	27-May-16	6%	-29	113
DS.3030	Plumbing & Drainage - Incorporate Comments & Re	30	29-Apr-16	28-May-16	14-Apr-16 A	27-May-16	6%	1	113
DS.3040	Plumbing & Drainage - CA Review & Approval	30	29-May-16	27-Jun-16	28-May-16	26-Jun-16	0%	1	113
DS.3050	Plumbing & Drainage - Procurement and Delivery	150	28-Jun-16	24-Nov-16	27-Jun-16	23-Nov-16	0%	1	113
Ceramic Tile									
DS.6020	Ceramic Tile - CA Review & Comments	30	28-Feb-16	28-Mar-16	16-May-16	14-Jun-16	0%	-78	261
DS.6030	Ceramic Tile - Incorporate Comments & Resubmit	30	29-Mar-16	27-Apr-16	15-Jun-16	14-Jul-16	0%	-78	261
DS.6040	Ceramic Tile - CA Review & Approval	30	28-Apr-16	27-May-16	15-Jul-16	13-Aug-16	0%	-78	261
Soft and Hard Landscaping									
DS.7000	Landscaping - Award Specialist Subcontractor	0	18-Apr-16		30-Apr-16		0%	-12	21
DS.7010	Landscaping - Shop Drawings, Materials & Method S	90	18-Apr-16	16-Jul-16	30-Apr-16	28-Jul-16	0%	-12	21
DS.7020	Ceramic Tile - CA Review & Comments	30	17-Jul-16	15-Aug-16	29-Jul-16	27-Aug-16	0%	-12	21
Design Detailing / Buildability Co-ordination									
Spatial Coordination for BIM / CSD / CBWD									
M+ Podium									
B00.0060	Review, resubmission and approval for BIM / CSD /	30	29-Jan-16	27-Feb-16	24-May-16	22-Jun-16	0%	-116	98
B00.0070	Review, resubmission and approval for BIM / CSD /	30	29-Jan-16	27-Feb-16	31-May-16	29-Jun-16	0%	-123	137
B00.0080	Preparation and submission for BIM / CSD / CBWD a	60	29-Jan-16	28-Mar-16	24-May-16	22-Jul-16	0%	-116	11
B00.0090	Preparation and submission for BIM / CSD / CBWD a	60	29-Jan-16	28-Mar-16	31-May-16	29-Jul-16	0%	-123	92
B00.0100	Review, resubmission and approval for BIM / CSD /	30	29-Mar-16	27-Apr-16	23-Jul-16	21-Aug-16	0%	-116	105
B00.0110	Review, resubmission and approval for BIM / CSD /	30	29-Mar-16	27-Apr-16	30-Jul-16	28-Aug-16	0%	-123	121
B00.0120	Preparation and submission for BIM / CSD / CBWD a	60	29-Mar-16	27-May-16	23-Jul-16	20-Sep-16	0%	-116	11
M+ Tower									
B6B.0000	Preparation and submission for BIM / CSD / CBWD a	45	29-Mar-16	12-May-16	31-May-16	14-Jul-16	0%	-63	92
B6B.0010	Review, resubmission and approval for BIM / CSD /	20	13-May-16	01-Jun-16	15-Jul-16	03-Aug-16	0%	-63	210
B6B.0020	Preparation and submission for BIM / CSD / CBWD a	45	13-May-16	26-Jun-16	15-Jul-16	28-Aug-16	0%	-63	92
CSF Block									
B20.0280	Preparation and submission for BIM / CSD / CBWD a	45	13-Feb-16	28-Mar-16	30-Apr-16	13-Jun-16	0%	-77	48
B20.0290	Review, resubmission and approval for BIM / CSD /	20	29-Mar-16	17-Apr-16	14-Jun-16	03-Jul-16	0%	-77	270
B20.0300	Preparation and submission for BIM / CSD / CBWD a	60	29-Mar-16	27-May-16	14-Jun-16	12-Aug-16	0%	-77	48
Interfacing Car Park and Sewage Pumping Station (SPS)									
D01.0000	Preparation and submission for BIM / CSD / CBWD a	45	30-Dec-15	12-Feb-16	22-Apr-16 A	09-Jun-16	10%	-118	48
D01.0010	Review, resubmission and approval for BIM / CSD /	15	13-Feb-16	27-Feb-16	09-Jun-16	24-Jun-16	0%	-118	946
D02.0000	Preparation and submission for BIM / CSD / CBWD a	45	01-Oct-15	14-Nov-15	22-Apr-16 A	04-Jun-16	20%	-203	-22
D02.0010	Review, resubmission and approval for BIM / CSD /	15	15-Nov-15	29-Nov-15	05-Jun-16	19-Jun-16	0%	-203	38
D02.0020	Preparation and submission for BIM / CSD / CBWD a	45	15-Nov-15	29-Dec-15	05-Jun-16	19-Jul-16	0%	-203	-22
D02.0030	Review, resubmission and approval for BIM / CSD /	30	30-Dec-15	28-Jan-16	20-Jul-16	18-Aug-16	0%	-203	-22
4D Time Management (1st Draft)									



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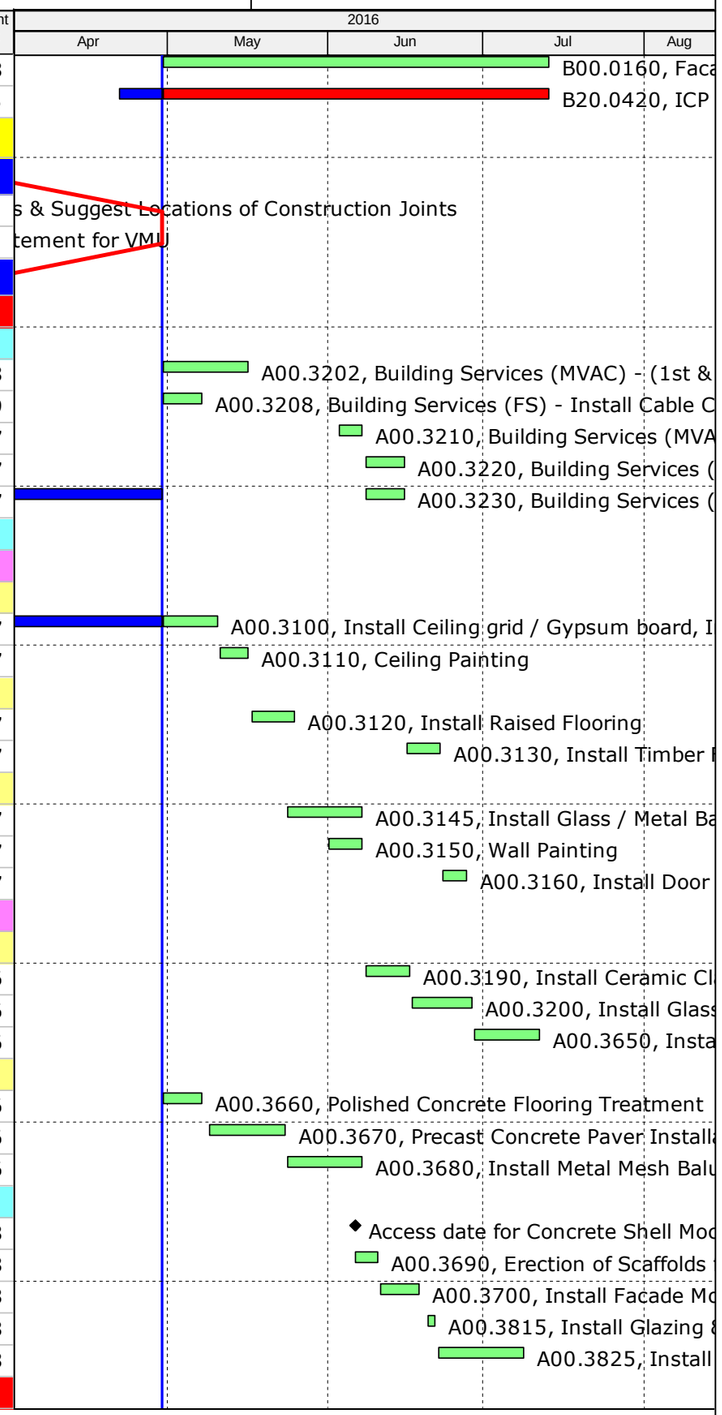
B00.0160	Facade works	75	14-Jan-16	28-Mar-16	30-Apr-16	13-Jul-16	0%	-107	278
B20.0420	ICP and SPS	75	14-Jan-16	28-Mar-16	22-Apr-16 A	13-Jul-16	5%	-107	-66
Visual Mock-Up (VMU)									
VMU Document / Drawing Submission									
A00.3000	Prepare, Submit & Approve Temp Works & Suggest l	30	26-Sep-15	25-Oct-15	26-Sep-15 A	24-Dec-15 A	100%	-59	
A00.3010	Prepare, Submit & Approve Method Statement for VI	30	26-Sep-15	25-Oct-15	26-Sep-15 A	24-Dec-15 A	100%	-59	
VMU Construction									
Step 2.0 - Existing Concrete Shell									
VMU Building Service Works									
A00.3202	Building Services (MVAC) - (1st & 2nd Fix) Ceiling B	12	20-Nov-15	03-Dec-15	30-Apr-16	16-May-16	0%	-128	798
A00.3208	Building Services (FS) - Install Cable Containment /	6	15-Jan-16	21-Jan-16	30-Apr-16	07-May-16	0%	-84	199
A00.3210	Building Services (MVAC) - Final Fix) Ceiling dumpe	4	19-Feb-16	23-Feb-16	03-Jun-16	07-Jun-16	0%	-84	187
A00.3220	Building Services (Elect & ELV) - (Final Fix) CCTV Ca	6	24-Feb-16	01-Mar-16	08-Jun-16	15-Jun-16	0%	-84	187
A00.3230	Building Services (FS) - (Final Fix) Fire Alarm, PA Sp	6	29-Feb-16	05-Mar-16	01-Apr-16 A	15-Jun-16	10%	-80	187
VMU ABWF & Finishes									
VMU Gallery & B1 Plaza Space									
VMU Celling									
A00.3100	Install Ceiling grid / Gypsum board	8	18-Dec-15	30-Dec-15	01-Apr-16 A	10-May-16	45%	-104	187
A00.3110	Ceiling Painting	4	31-Dec-15	05-Jan-16	11-May-16	16-May-16	0%	-104	187
VMU Floor									
A00.3120	Install Raised Flooring	8	15-Jan-16	23-Jan-16	17-May-16	25-May-16	0%	-96	187
A00.3130	Install Timber Flanks Flooring	6	07-Mar-16	12-Mar-16	16-Jun-16	22-Jun-16	0%	-80	187
VMU Wall									
A00.3145	Install Glass / Metal Ballustrade	13	22-Jan-16	05-Feb-16	24-May-16	07-Jun-16	0%	-96	187
A00.3150	Wall Painting	6	12-Feb-16	18-Feb-16	01-Jun-16	07-Jun-16	0%	-88	187
A00.3160	Install Door Panels	4	14-Mar-16	17-Mar-16	23-Jun-16	27-Jun-16	0%	-80	187
VMU Lobby Space									
VMU Wall									
A00.3190	Install Ceramic Cladding & Rain Screen	7	28-Jan-16	04-Feb-16	08-Jun-16	16-Jun-16	0%	-104	176
A00.3200	Install Glass Balustrade with Rubber handrail	10	05-Feb-16	19-Feb-16	17-Jun-16	28-Jun-16	0%	-104	176
A00.3650	Install Metal Mesh Balustrade	10	20-Feb-16	02-Mar-16	29-Jun-16	11-Jul-16	0%	-104	176
VMU Floor									
A00.3660	Polished Concrete Flooring Treatment	6	18-Dec-15	28-Dec-15	30-Apr-16	07-May-16	0%	-104	176
A00.3670	Precast Concrete Paver Installation	12	29-Dec-15	12-Jan-16	09-May-16	23-May-16	0%	-104	176
A00.3680	Install Metal Mesh Balustrade	13	13-Jan-16	27-Jan-16	24-May-16	07-Jun-16	0%	-104	176
VMU Facade Works									
A00.3685	Access date for Concrete Shell Mock-Up	0	16-Feb-16		06-Jun-16		0%	-89	178
A00.3690	Erection of Scaffolds for Shell Mock-Up	4	16-Feb-16	19-Feb-16	06-Jun-16	10-Jun-16	0%	-89	178
A00.3700	Install Facade Mock-Up Panels	7	20-Feb-16	27-Feb-16	11-Jun-16	18-Jun-16	0%	-89	178
A00.3815	Install Glazing & Sealant Application	2	29-Feb-16	01-Mar-16	20-Jun-16	21-Jun-16	0%	-89	178
A00.3825	Install Glazing & Sealant Application	14	02-Mar-16	17-Mar-16	22-Jun-16	08-Jul-16	0%	-89	178
VMU Step 2.1 - Hybrid Shell Mock-Up									



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West Kowloon Cultural District Authority

(3MRP) 3-Months Rolling Programme Status 30 April 2016

HSIN新昌 CHONG

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06-Jan-16	(3MRP) 3-Months Rolling Prog @ ...	Chris / E...	Leo Harnett
13-Feb-16	(3MRP) 3-Months Rolling Prog @ ...	Chris / E...	Desmond
17-Mar-16	(3MRP) 3-Months Rolling Prog @ ...	Jojo	Desmond

(3MRP) 3-Months Rolling Programme Status 30 April 2016

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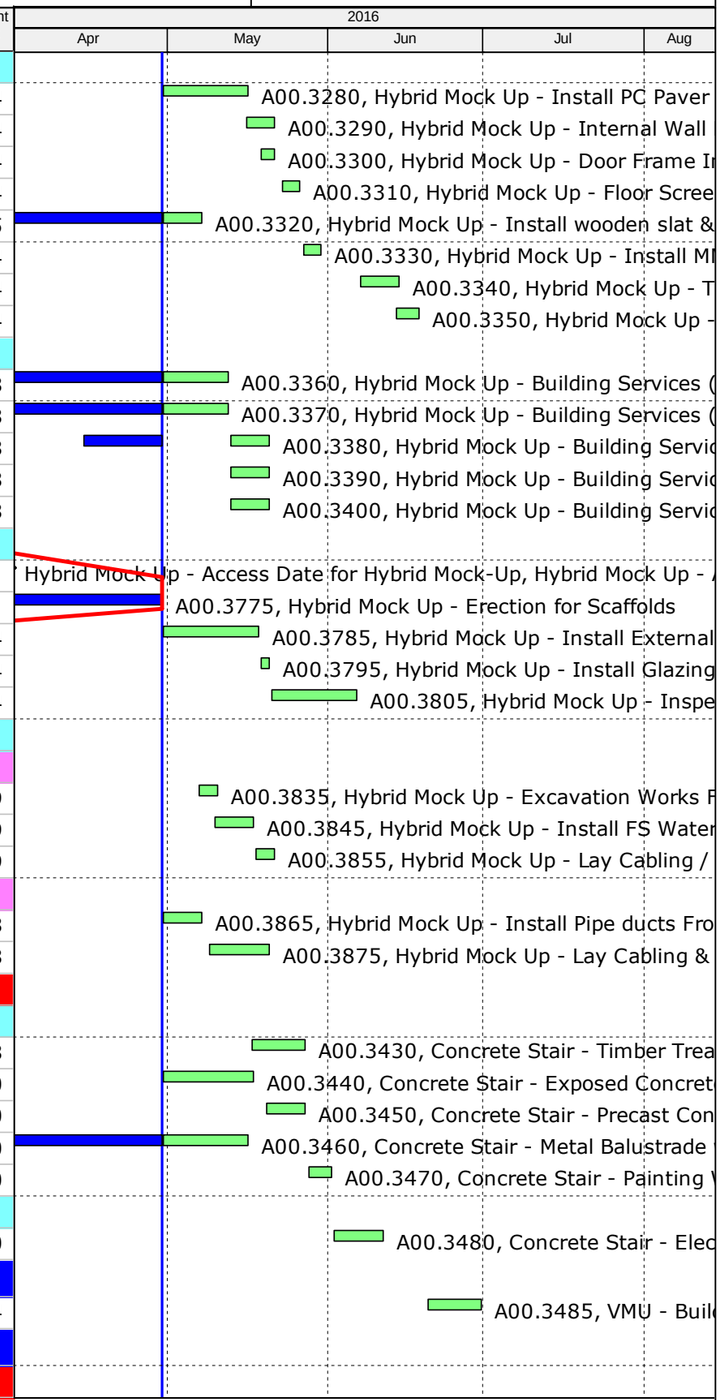
VMU ABWF & Finishes									
A00.3280	Hybrid Mock Up - Install PC Paver at External Floor	12	19-Dec-15	06-Jan-16	30-Apr-16	16-May-16	0%	-103	184
A00.3290	Hybrid Mock Up - Internal Wall Plasters and Wet Tra	6	06-Jan-16	12-Jan-16	16-May-16	21-May-16	0%	-103	184
A00.3300	Hybrid Mock Up - Door Frame Installation	3	09-Jan-16	12-Jan-16	19-May-16	21-May-16	0%	-103	184
A00.3310	Hybrid Mock Up - Floor Screeding & Cure	4	13-Jan-16	16-Jan-16	23-May-16	26-May-16	0%	-103	184
A00.3320	Hybrid Mock Up - Install wooden slat & tower open n	6	29-Jan-16	04-Feb-16	01-Apr-16 A	07-May-16	10%	-72	205
A00.3330	Hybrid Mock Up - Install MML Inclines Concrete Ceili	3	02-Feb-16	04-Feb-16	27-May-16	30-May-16	0%	-90	184
A00.3340	Hybrid Mock Up - Timber Floor Installation	6	16-Feb-16	22-Feb-16	07-Jun-16	14-Jun-16	0%	-90	184
A00.3350	Hybrid Mock Up - Install Panel Doors (2-nos)	5	22-Feb-16	26-Feb-16	14-Jun-16	18-Jun-16	0%	-90	184
VMU MEP Building Service Works									
A00.3360	Hybrid Mock Up - Building Services (Elect) - (1st & 2	10	18-Jan-16	28-Jan-16	01-Apr-16 A	12-May-16	30%	-82	218
A00.3370	Hybrid Mock Up - Building Services (FS) - (1st & 2nc	10	18-Jan-16	28-Jan-16	01-Apr-16 A	12-May-16	50%	-82	218
A00.3380	Hybrid Mock Up - Building Services (Elect) - (Final F	6	05-Feb-16	15-Feb-16	15-Apr-16 A	20-May-16	30%	-76	218
A00.3390	Hybrid Mock Up - Building Services (FS) - Hose Reel	6	05-Feb-16	15-Feb-16	13-May-16	20-May-16	0%	-76	218
A00.3400	Hybrid Mock Up - Building Services (FS) - (Final Fix)	6	05-Feb-16	15-Feb-16	13-May-16	20-May-16	0%	-76	218
VMU External Facade									
A00.3765	Hybrid Mock Up - Access Date for Hybrid Mock-Up	0	20-Jan-16		01-Apr-16 A		100%	-56	
A00.3775	Hybrid Mock Up - Erection for Scaffolds	3	20-Jan-16	22-Jan-16	01-Apr-16 A	30-Apr-16 A	100%	-77	
A00.3785	Hybrid Mock Up - Install External Facade for Hybrid I	14	23-Jan-16	11-Feb-16	30-Apr-16	18-May-16	0%	-77	204
A00.3795	Hybrid Mock Up - Install Glazing & Sealant Applicatic	2	12-Feb-16	13-Feb-16	19-May-16	20-May-16	0%	-77	204
A00.3805	Hybrid Mock Up - Inspection and Approval of Visual I	14	15-Feb-16	01-Mar-16	21-May-16	06-Jun-16	0%	-77	204
VMU External Works									
VMU MEP - FS Pipeworks									
A00.3835	Hybrid Mock Up - Excavation Works From Existing D	3	22-Jan-16	25-Jan-16	07-May-16	10-May-16	0%	-83	189
A00.3845	Hybrid Mock Up - Install FS Water Pipeworks & PVC (	6	25-Jan-16	30-Jan-16	10-May-16	17-May-16	0%	-83	189
A00.3855	Hybrid Mock Up - Lay Cabling / Wiring and Terminat	4	01-Feb-16	04-Feb-16	18-May-16	21-May-16	0%	-83	189
VMU MEP - Electrical Works									
A00.3865	Hybrid Mock Up - Install Pipe ducts From Hybrid Moc	6	06-Jan-16	12-Jan-16	30-Apr-16	07-May-16	0%	-92	208
A00.3875	Hybrid Mock Up - Lay Cabling & Termination From H	10	13-Jan-16	23-Jan-16	09-May-16	20-May-16	0%	-92	208
VMU Step 2.2 - Concrete Stair									
VMU ABWF & Finishes									
A00.3430	Concrete Stair - Timber Tread & Risers Installation	10	02-Dec-15	12-Dec-15	17-May-16	27-May-16	0%	-130	788
A00.3440	Concrete Stair - Exposed Concrete Treament	13	23-Oct-15	06-Nov-15	30-Apr-16	17-May-16	0%	-152	190
A00.3450	Concrete Stair - Precast Concrete Plank & Treads Ins	7	10-Nov-15	17-Nov-15	20-May-16	27-May-16	0%	-152	190
A00.3460	Concrete Stair - Metal Balustrade w/ Railing Installa	12	18-Nov-15	01-Dec-15	01-Apr-16 A	16-May-16	20%	-130	200
A00.3470	Concrete Stair - Painting Works for Metal Balustrade	4	14-Dec-15	17-Dec-15	28-May-16	01-Jun-16	0%	-130	190
VMU MEP Building Service Works									
A00.3480	Concrete Stair - Electrical Works for LED Lighting on	8	18-Dec-15	30-Dec-15	02-Jun-16	11-Jun-16	0%	-130	190
VMU MEP Testing and Commissioning									
A00.3485	VMU - Building Services Testing and Commissioning	10	07-Mar-16	17-Mar-16	20-Jun-16	30-Jun-16	0%	-83	184
VMU Statutory Submission & Inspection									
VMU WSD (FS Pipeworks)									



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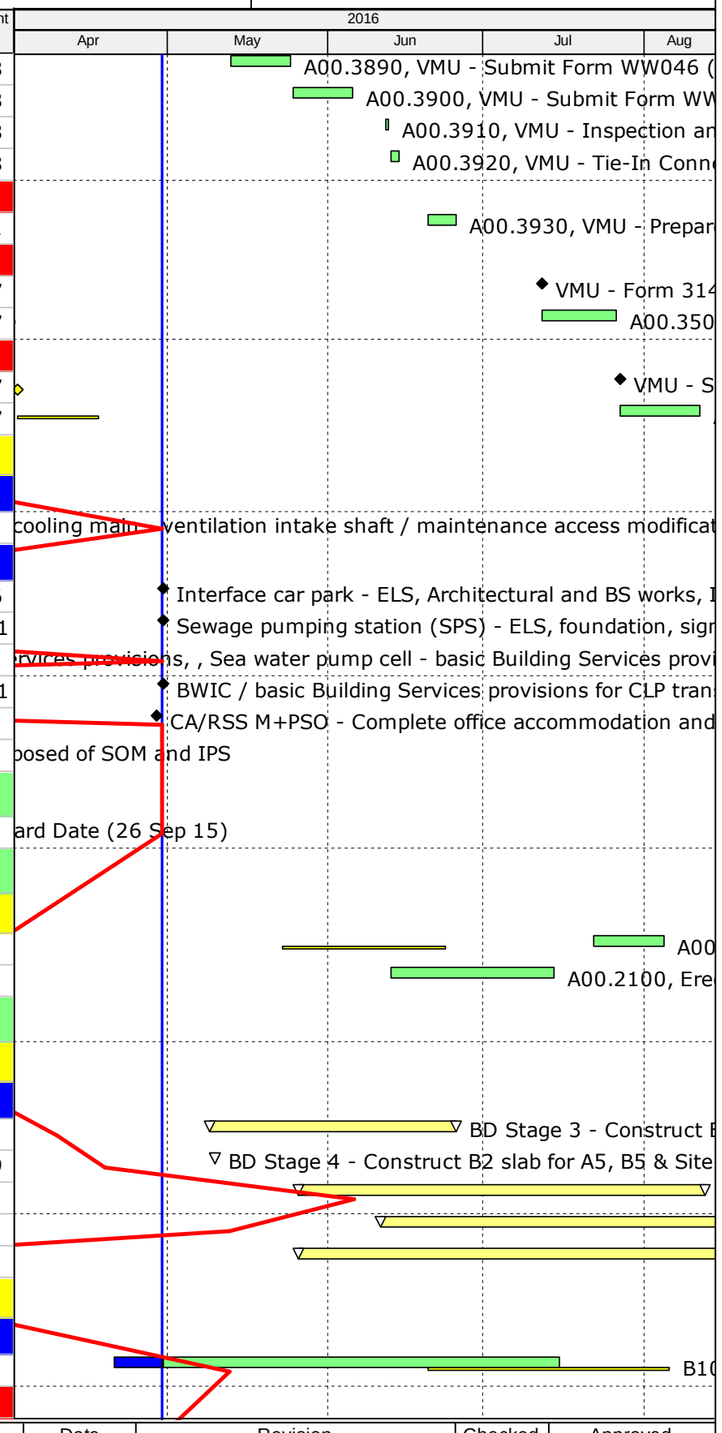
A00.3890	VMU - Submit Form WW046 (Part 3) to WSD (by MJ	12	02-Feb-16	13-Feb-16	13-May-16	24-May-16	0%	-101	228
A00.3900	VMU - Submit Form WW046 (Part 4) to WSD	12	14-Feb-16	25-Feb-16	25-May-16	05-Jun-16	0%	-101	228
A00.3910	VMU - Inspection and Approval by WSD	1	03-Mar-16	03-Mar-16	12-Jun-16	12-Jun-16	0%	-101	228
A00.3920	VMU - Tie-In Connection to Existing Dog House	2	04-Mar-16	05-Mar-16	13-Jun-16	14-Jun-16	0%	-79	188
VMU EMSD (Electrical)									
A00.3930	VMU - Prepare & Submit Form WR1 to EMSD (For re	6	18-Mar-16	24-Mar-16	20-Jun-16	25-Jun-16	0%	-73	201
VMU FSD (Fire Service)									
A00.3490	VMU - Form 314 & 501 Submission	0	18-Mar-16		12-Jul-16		0%	-116	217
A00.3500	VMU - FSD's Inspection & Fire Certificate Issuance	15	18-Mar-16	01-Apr-16	12-Jul-16	26-Jul-16	0%	-116	217
VMU BD (OP)									
A00.3510	VMU - Submission of BA14	0	02-Apr-16		27-Jul-16		0%	-116	217
A00.3520	VMU - BD Inspection	16	02-Apr-16	17-Apr-16	27-Jul-16	11-Aug-16	0%	-116	217
Last Date for Exercising Provisional Sum & Optional Items (Refer Annex B to Preamble) (To be revised									
External Works / Hard & Soft Landscape									
PN2	Elements cooling main - ventilation intake shaft / m	0	26-Sep-15		26-Sep-15 A		100%	0	
Other Provisional Sums / Options for M+ Main Works Contract									
PP2.2	Interface car park - ELS, Architectural and BS works	0		28-Jan-16		30-Apr-16	0%	-92	846
PP3.2	Sewage pumping station (SPS) - ELS, foundation, si	0		28-Jan-16		30-Apr-16	0%	-92	1001
PP4	Sea water pump cell - basic Building Services provisi	0		26-Sep-15		26-Sep-15 A	100%	1	
PP5	BWIC / basic Building Services provisions for CLP tra	0		26-Sep-15		30-Apr-16	0%	-217	1001
PP6	CA/RSS M+PSO - Complete office accommodation a	0		26-Sep-15		29-Apr-16 A	100%	-216	
PP7	Contractor's proposed of SOM and IPS	0		26-Sep-15		26-Sep-15 A	100%	0	
Construction Milestones (Internal Reference)									
CM0010	Contract Award Date (26 Sep 15)	0	26-Sep-15		26-Sep-15 A		100%	0	
Preliminaries / Construction									
Plant & Equipment									
A00.2000	Erection of Tower Crane No. 2	12	23-May-16	23-Jun-16	22-Jul-16	04-Aug-16	0%	-34	46
A00.2100	Erection of Tower Crane No. 3	21	02-Mar-16	29-Mar-16	13-Jun-16	14-Jul-16	0%	-75	50
Excavation & ELS									
BD Milestones & BD Stages LoE									
Portion M01									
B10.3380	BD Stage 3 - Construct B2 slab for A4, B4 & PC cons	32	03-May-16	26-May-16	09-May-16	25-Jun-16	0%	-20	2
B10.3390	BD Stage 4 - Construct B2 slab for A5, B5 & Site for	0	23-Apr-16	23-Apr-16	10-May-16	10-May-16	0%	-11	709
B10.3400	BD Stage 5 - Construct B2 slab for A6, A7, A8, B6 &	51	25-Apr-16	08-Oct-16	26-May-16	12-Aug-16	0%	37	61
B10.3410	BD Stage 6 - Construct PC for A9, A10, A11, A12, B	48	24-May-16	10-Sep-16	11-Jun-16	22-Aug-16	0%	13	70
B10.3420	BD Stage 7 - Construct B2 slab for A9, A10, A11, A1	88	03-Jun-16	03-Jun-16	26-May-16	08-Oct-16	0%	-83	59
AEL North									
Portion A6, A7, A10, A11									
B10.2110	AEL North - ELS Stage 5 Site Formation (Portion A1(	30	20-Jun-16	05-Aug-16	21-Apr-16 A	15-Jul-16	10%	13	39
Portion A10a & 10b - ELS & Excavation									



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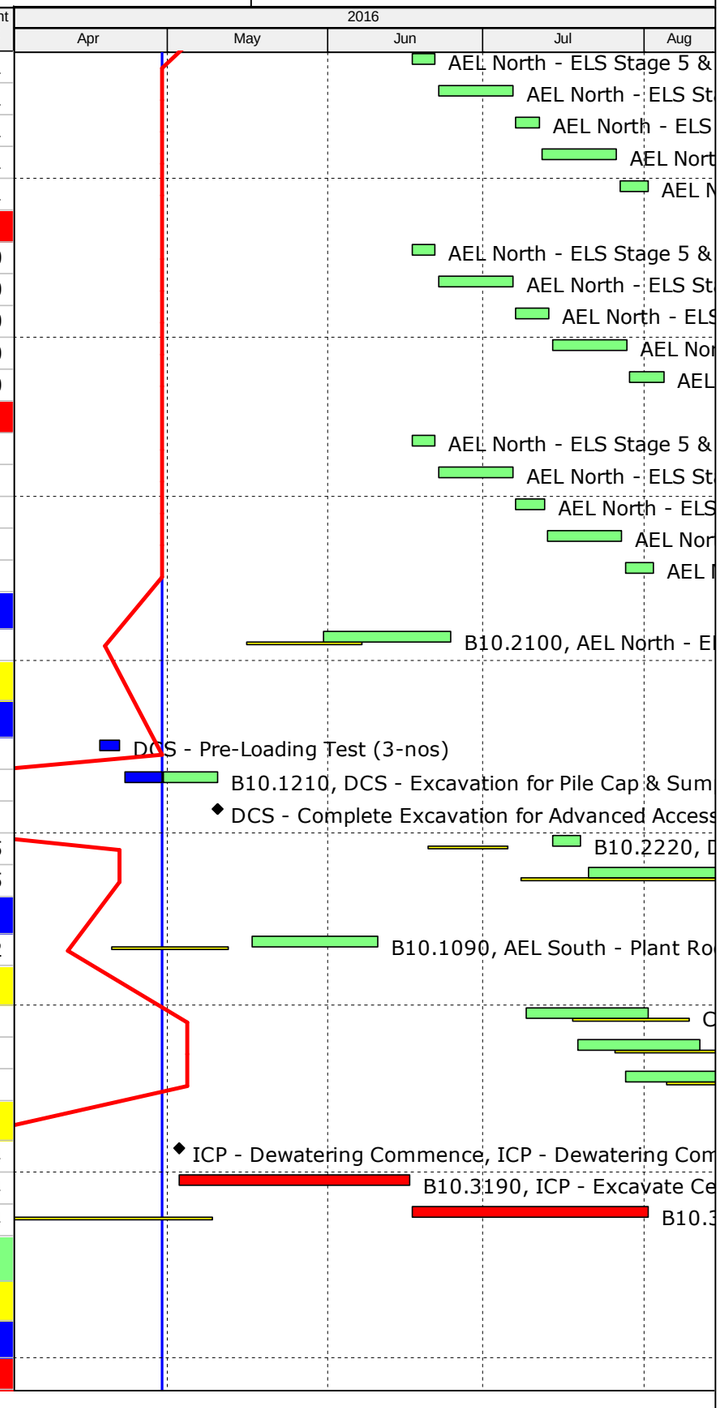
B10.2080a	AEL North - ELS Stage 5 & 6 - 1st Trimming (A10)	4			17-Jun-16	21-Jun-16	0%		711
B10.2080b	AEL North - ELS Stage 5 & 6 - Ist Lateral Support (A	12			22-Jun-16	06-Jul-16	0%		711
B10.2080c	AEL North - ELS Stage 5 & 6 - 2nd trimming (A10)	4			07-Jul-16	11-Jul-16	0%		711
B10.2080d	AEL North - ELS Stage 5 & 6 - 2nd Lateral Support (.	12			12-Jul-16	26-Jul-16	0%		711
B10.2080e	AEL North - ELS Stage 5 & 6 - Excavate Pilecap Forn	5			27-Jul-16	01-Aug-16	0%		711
Portion A11- ELS & Excavation									
B10.2080h	AEL North - ELS Stage 5 & 6 - 1st Trimming (A11)	4			17-Jun-16	21-Jun-16	0%		720
B10.2080j	AEL North - ELS Stage 5 & 6 - Ist Lateral Support (A	12			22-Jun-16	06-Jul-16	0%		720
B10.2080k	AEL North - ELS Stage 5 & 6 - 2nd trimming (A11)	6			07-Jul-16	13-Jul-16	0%		720
B10.2080l	AEL North - ELS Stage 5 & 6 - 2nd Lateral Support (.	12			14-Jul-16	28-Jul-16	0%		720
B10.2080m	AEL North - ELS Stage 5 & 6 - Excavate Pilecap Forn	6			29-Jul-16	04-Aug-16	0%		720
Portion A12 - ELS & Excavation									
B10.2080p	AEL North - ELS Stage 5 & 6 - 1st Trimming (A12)	4			17-Jun-16	21-Jun-16	0%		16
B10.2080q	AEL North - ELS Stage 5 & 6 - Ist Lateral Support (A	12			22-Jun-16	06-Jul-16	0%		16
B10.2080r	AEL North - ELS Stage 5 & 6 - 2nd trimming (A12)	5			07-Jul-16	12-Jul-16	0%		16
B10.2080s	AEL North - ELS Stage 5 & 6 - 2nd Lateral Support (.	12			13-Jul-16	27-Jul-16	0%		16
B10.2080t	AEL North - ELS Stage 5 & 6 - Excavate Pilecap Forn	5			28-Jul-16	02-Aug-16	0%		16
Portion B8 & A9, B9									
B10.2100	AEL North - ELS Stage 5 Site Formation (B8 & A9, B	16	16-May-16	07-Jun-16	31-May-16	24-Jun-16	0%	-11	18
AEL South									
DCS									
B10.1160a	DCS - Pre-Loading Test (3-nos)	7			18-Apr-16 A	22-Apr-16 A	100%		
B10.1210	DCS - Excavation for Pile Cap & Sump pit	14	28-Jan-16	16-Feb-16	23-Apr-16 A	10-May-16	80%	-67	38
B10.1240	DCS - Complete Excavation for Advanced Access of	0		16-Feb-16		10-May-16	0%	-67	38
B10.2220	DCS - Remove 1st Layer Struts at +4.2mPD	4	20-Jun-16	05-Jul-16	14-Jul-16	19-Jul-16	0%	-8	495
B10.2230	DCS - Backfilling and Install Access Hatch and Misc.	50	08-Jul-16	20-Sep-16	21-Jul-16	03-Oct-16	0%	-8	495
AEL South except DCS									
B10.1090	AEL South - Plant Room - Excavate to +2.45mPD fo	16	20-Apr-16	12-May-16	17-May-16	10-Jun-16	0%	-18	222
AEL North East of Portion A10 (for Area M12 h/o)									
C10.0000	AEL NE Portion A10 - Excavate to +3.7mPD	16	18-Jul-16	09-Aug-16	09-Jul-16	01-Aug-16	0%	5	10
C10.0010	AEL NE Portion A10 - 1st Layer Struts at +4.2mPD	16	26-Jul-16	18-Aug-16	19-Jul-16	11-Aug-16	0%	5	10
C10.0020	AEL NE Portion A10 - Excavate to +1.5mPD	16	05-Aug-16	26-Aug-16	28-Jul-16	19-Aug-16	0%	5	10
ICP									
B10.3180	ICP - Dewatering Commence	0	22-Feb-16		03-May-16		0%	-56	-54
B10.3190	ICP - Excavate Central Portion from +3.625mPD to	30	22-Feb-16	30-Mar-16	03-May-16	16-Jun-16	0%	-56	-54
B10.3200	ICP - Excavate Area A to -1.650mPD	30	31-Mar-16	09-May-16	17-Jun-16	01-Aug-16	0%	-55	-54
Structures									
Basement Structures / Sub-Structure									
Pilecaps									
AEL North									



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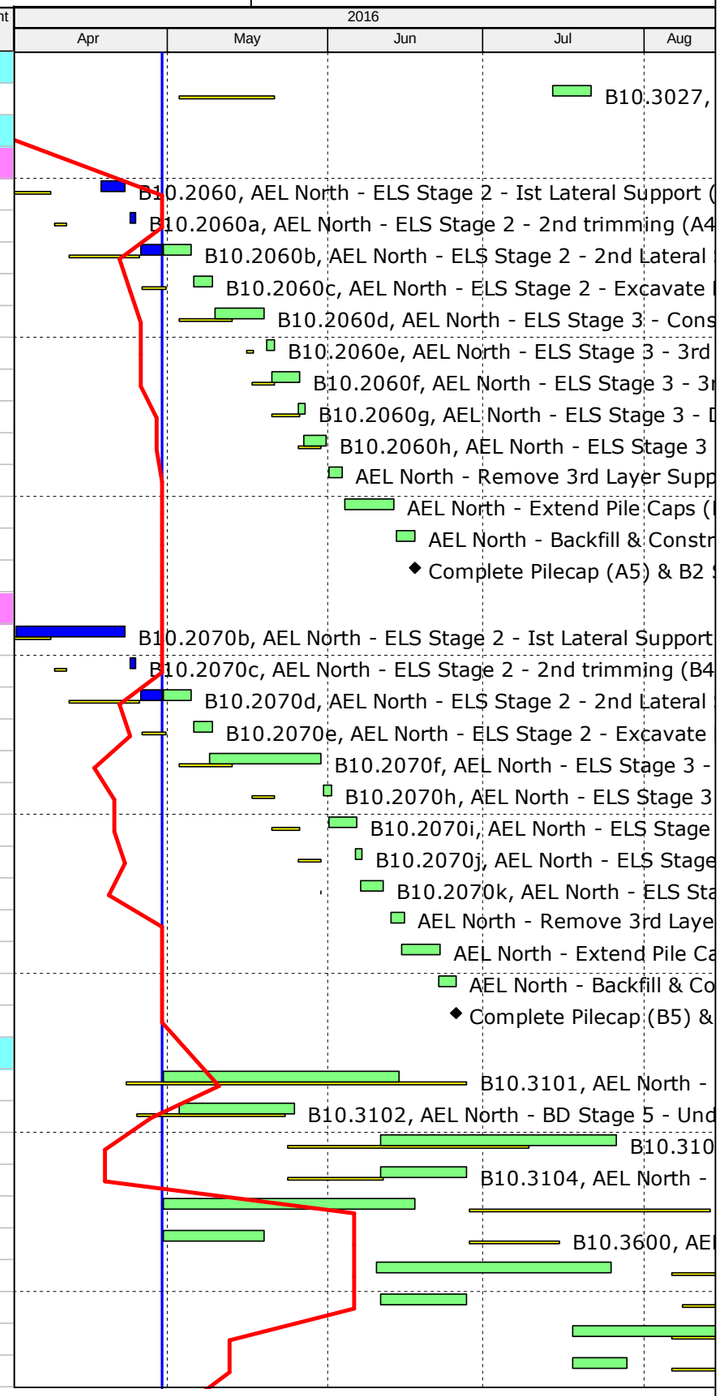
Stage 1 - Pilecap (A1,A2,A3,B1,B2,B3)									
B10.3027	AEL North - Excavation & Concrete Base for Tower C	6	03-May-16	21-May-16	14-Jul-16	21-Jul-16	0%	-49	46
Stage 2 & 3 - Pilecap (A4,A5,B4,B5)									
Pilecap (A4 & A5)									
B10.2060	AEL North - ELS Stage 2 - Ist Lateral Support (A4 / A	12	22-Mar-16	08-Apr-16	18-Apr-16 A	23-Apr-16 A	100%	-12	
B10.2060a	AEL North - ELS Stage 2 - 2nd trimming (A4 / A5)	2	09-Apr-16	11-Apr-16	24-Apr-16 A	25-Apr-16 A	100%	-11	
B10.2060b	AEL North - ELS Stage 2 - 2nd Lateral Support (A4 /	8	12-Apr-16	25-Apr-16	26-Apr-16 A	05-May-16	0%	-8	6
B10.2060c	AEL North - ELS Stage 2 - Excavate Pilecap Formatic	3	26-Apr-16	30-Apr-16	06-May-16	09-May-16	0%	-6	6
B10.2060d	AEL North - ELS Stage 3 - Construct Pilecap & B2 Sl	8	03-May-16	13-May-16	10-May-16	19-May-16	0%	-4	6
B10.2060e	AEL North - ELS Stage 3 - 3rd Trimming (A5)	2	16-May-16	17-May-16	20-May-16	21-May-16	0%	-4	6
B10.2060f	AEL North - ELS Stage 3 - 3rd Lateral Support (A5)	5	17-May-16	21-May-16	21-May-16	26-May-16	0%	-4	6
B10.2060g	AEL North - ELS Stage 3 - Deep Excavation for Pilec	2	21-May-16	26-May-16	26-May-16	27-May-16	0%	-1	6
B10.2060h	AEL North - ELS Stage 3 - Construct Pilecap (A5)	4	26-May-16	30-May-16	27-May-16	31-May-16	0%	-1	6
B10.2060i	AEL North - Remove 3rd Layer Supports (2-nos)	3			01-Jun-16	03-Jun-16	0%		6
B10.2060j	AEL North - Extend Pile Caps (PC25) to -2.3mPD (T	7			04-Jun-16	13-Jun-16	0%		6
B10.2060k	AEL North - Backfill & Construct Remaining B2 Slab	4			14-Jun-16	17-Jun-16	0%		6
B10.2060m	Complete Pilecap (A5) & B2 Slab (A4) (Milestone B4	0				17-Jun-16	0%		6
Pilecap (B4 & B5)									
B10.2070b	AEL North - ELS Stage 2 - Ist Lateral Support (B4 / E	16	22-Mar-16	08-Apr-16	02-Apr-16 A	23-Apr-16 A	100%	-12	
B10.2070c	AEL North - ELS Stage 2 - 2nd trimming (B4 / B5)	2	09-Apr-16	11-Apr-16	24-Apr-16 A	25-Apr-16 A	100%	-11	
B10.2070d	AEL North - ELS Stage 2 - 2nd Lateral Support (B4 /	8	12-Apr-16	25-Apr-16	26-Apr-16 A	05-May-16	0%	-8	2
B10.2070e	AEL North - ELS Stage 2 - Excavate Pilecap Formatic	3	26-Apr-16	30-Apr-16	06-May-16	09-May-16	0%	-6	2
B10.2070f	AEL North - ELS Stage 3 - Construct Pilecap (PC72b	18	03-May-16	13-May-16	09-May-16	30-May-16	0%	-13	2
B10.2070h	AEL North - ELS Stage 3 - 3rd Trimming (B5)	2	17-May-16	21-May-16	31-May-16	01-Jun-16	0%	-9	2
B10.2070i	AEL North - ELS Stage 3 - 3rd Lateral Support (B5)	5	21-May-16	26-May-16	01-Jun-16	06-Jun-16	0%	-9	2
B10.2070j	AEL North - ELS Stage 3 - Deep Excavation for Pilec	2	26-May-16	30-May-16	06-Jun-16	07-Jun-16	0%	-7	2
B10.2070k	AEL North - ELS Stage 3 - Construct Pilecap & B2 Sl	4	30-May-16	30-May-16	07-Jun-16	11-Jun-16	0%	-10	2
B10.2070l	AEL North - Remove 3rd Layer Supports (3-nos)	3			13-Jun-16	15-Jun-16	0%		2
B10.2070m	AEL North - Extend Pile Caps PC70 & PC75 to -2.3m	7			15-Jun-16	22-Jun-16	0%		2
B10.2070n	AEL North - Backfill & Construct Remaining B2 Slab	4			22-Jun-16	25-Jun-16	0%		2
B10.2070p	Complete Pilecap (B5) & B2 Slab (B4) (Milestone B4	0				25-Jun-16	0%		2
Stage 4, 5, 6 & 7 (A6, A7, A8, A9, A10, A11, A12 & B6, B7, B8, B9)									
B10.3101	AEL North - BD Stage 4 - Pile Cap Construction (Por	36	23-Apr-16	27-Jun-16	30-Apr-16	14-Jun-16	0%	11	13
B10.3102	AEL North - BD Stage 5 - Underground Drainage (Pc	19	25-Apr-16	23-May-16	03-May-16	25-May-16	0%	-2	13
B10.3103	AEL North - BD Stage 6 - Pile Cap Construction (Por	30	24-May-16	09-Jul-16	11-Jun-16	26-Jul-16	0%	-11	18
B10.3104	AEL North - BD Stage 6 - Underground Drainage (P	12	24-May-16	11-Jun-16	11-Jun-16	27-Jun-16	0%	-11	18
B10.3590	AEL North - BD Stage 6 - Pile Cap Construction (Por	30	28-Jun-16	13-Aug-16	30-Apr-16	17-Jun-16	0%	37	39
B10.3600	AEL North - BD Stage 6 - Underground Drainage (Pc	11	28-Jun-16	15-Jul-16	30-Apr-16	19-May-16	0%	37	39
B10.3610	AEL North - BD Stage 4 - Pile Cap Construction (Por	30	06-Aug-16	19-Sep-16	10-Jun-16	25-Jul-16	0%	37	61
B10.3620	AEL North - BD Stage 5 - Underground Drainage (Pc	12	08-Aug-16	23-Aug-16	11-Jun-16	27-Jun-16	0%	37	72
B10.3630	AEL North - BD Stage 6 - Pile Cap Construction (Por	25	06-Aug-16	10-Sep-16	18-Jul-16	22-Aug-16	0%	13	65
B10.3640	AEL North - BD Stage 6 - Underground Drainage (P	8	06-Aug-16	16-Aug-16	18-Jul-16	28-Jul-16	0%	13	87



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(3MRP) 3-Months Rolling Programme Status 30 April 2016

HSIN新昌 CHONG

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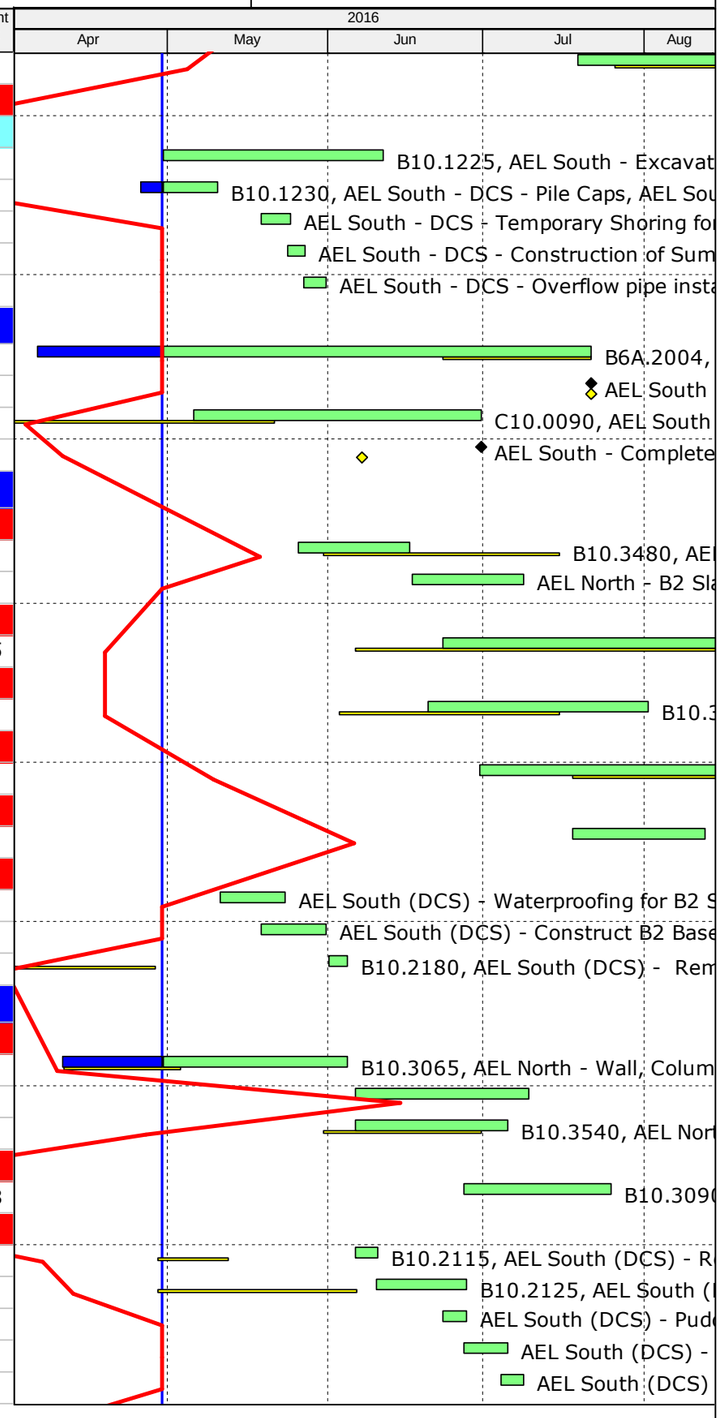
17-Mar-16	(3MRP) 3-Months Rolling Prog @ ...	Jojo	Desmond

(3MRP) 3-Months Rolling Programme Status 30 April 2016

Activity ID	Activity Name	Ori. Dur.	BaseLine Start	BaseLine Finish	Forecast / Actual Start	Forcast / Actual Finish	% Compl.	Finish Variance	Current Float
C10.0350	AEL North East of GL J' - Pile Caps and Sump Pits fo	25	26-Jul-16	30-Aug-16	19-Jul-16	23-Aug-16	0%	5	25
AEL South									
Stage 1 - East Pilecap & DCS									
B10.1225	AEL South - Excavation & Concrete Base Constructi	28	12-Jan-16	16-Feb-16	30-Apr-16	11-Jun-16	0%	-87	50
B10.1230	AEL South - DCS - Pile Caps	12	17-Feb-16	23-Mar-16	26-Apr-16 A	10-May-16	10%	-36	38
B10.1230a	AEL South - DCS - Temporary Shoring for Sump pits	5			19-May-16	24-May-16	0%		38
B10.1230b	AEL South - DCS - Construction of Sump pits	4			24-May-16	27-May-16	0%		38
B10.1230c	AEL South - DCS - Overflow pipe installation	4			27-May-16	31-May-16	0%		38
RC Structures for Trusses									
B6A.2004	AEL South - Construct Pile Cap PC 92'c' & PC 117 fo	18	23-Jun-16	21-Jul-16	06-Apr-16 A	21-Jul-16	30%	0	91
B6A.2006	AEL South - Complete Pile Caps for Trusses 3 & 4	0		21-Jul-16		21-Jul-16	0%	0	91
C10.0090	AEL South - East Core Wall from B1/F to 1M/F (Trus	37	31-Mar-16	21-May-16	06-May-16	30-Jun-16	0%	-26	38
C10.0130	AEL South - Complete Pile Caps PC96, Core Wall for	0		07-Jun-16		30-Jun-16	0%	-19	48
B2/F Slabs									
Portion A6, A7									
B10.3480	AEL North - B2 Slab - Stage 5 (Portion A6)	14	31-May-16	15-Jul-16	26-May-16	16-Jun-16	0%	19	10
B10.3485	AEL North - B2 Slab - Stage 5 (Portion A7)	14			17-Jun-16	08-Jul-16	0%		10
Portion B8, A9									
B10.3490	AEL North - B2 Slab - Stage 7 (Portion B8, A9)	46	06-Jun-16	15-Aug-16	23-Jun-16	30-Aug-16	0%	-11	635
Portion B9									
B10.3500	AEL North - B2 Slab - Stage 7 (Portion B9)	28	03-Jun-16	15-Jul-16	20-Jun-16	01-Aug-16	0%	-11	18
Portion A10, A11, A12									
B10.3005	AEL North - B2 Slab - Stage 7 (Portion A10, A11,A1	41	18-Jul-16	15-Sep-16	30-Jun-16	30-Aug-16	0%	10	12
Portion A8, B6, A12, B7									
B10.3022	AEL North - B2 Slab - Stage 5 (Portion B6)	18	10-Sep-16	08-Oct-16	18-Jul-16	12-Aug-16	0%	37	61
AEL South									
B10.2179	AEL South (DCS) - Waterproofing for B2 Slab	10			11-May-16	23-May-16	0%		38
B10.2179a	AEL South (DCS) - Construct B2 Basement slab	11			19-May-16	31-May-16	0%		38
B10.2180	AEL South (DCS) - Remaining B2 Slab & Concrete (	4	24-Mar-16	28-Apr-16	01-Jun-16	04-Jun-16	0%	-30	38
B1/F Slab - Walls, Columns & B1/F Slabs									
AEL North - B1/F Slab other than AEL Zone									
B10.3065	AEL North - Wall, Column & B1 Slab (Portion B1D)	19	11-Apr-16	03-May-16	11-Apr-16 A	04-Jun-16	0%	-20	55
B10.3520	AEL North - Wall, Column & B1 Slab (Portion B1E)	22	16-Aug-16	17-Sep-16	06-Jun-16	09-Jul-16	0%	46	70
B10.3540	AEL North - Wall, Column & B1 Slab (Portion B1F)	20	31-May-16	30-Jun-16	06-Jun-16	05-Jul-16	0%	-3	55
AEL North - B1/F Slab for Truss T1, T2 & T5 Erection									
B10.3090	AEL North - Walls, Column & B1 Slab (Portion A4 & /	18	03-Mar-16	23-Mar-16	27-Jun-16	25-Jul-16	0%	-82	168
AEL South - B1/F Slab for DCS to facilitateTruss Erection									
B10.2115	AEL South (DCS) - Remove 2nd Layer Struts at 0.0	4	29-Apr-16	12-May-16	06-Jun-16	10-Jun-16	0%	-23	38
B10.2125	AEL South (DCS) - Construct Walls & Columns to B	15	29-Apr-16	06-Jun-16	10-Jun-16	27-Jun-16	0%	-17	38
B10.2125a	AEL South (DCS) - Puddle Frange Installation	4			23-Jun-16	27-Jun-16	0%		38
B10.2125b	AEL South (DCS) - Erect Scaffolds & Formworks for	7			27-Jun-16	05-Jul-16	0%		38
B10.2125c	AEL South (DCS) - Rebar Fixing	5			04-Jul-16	08-Jul-16	0%		38



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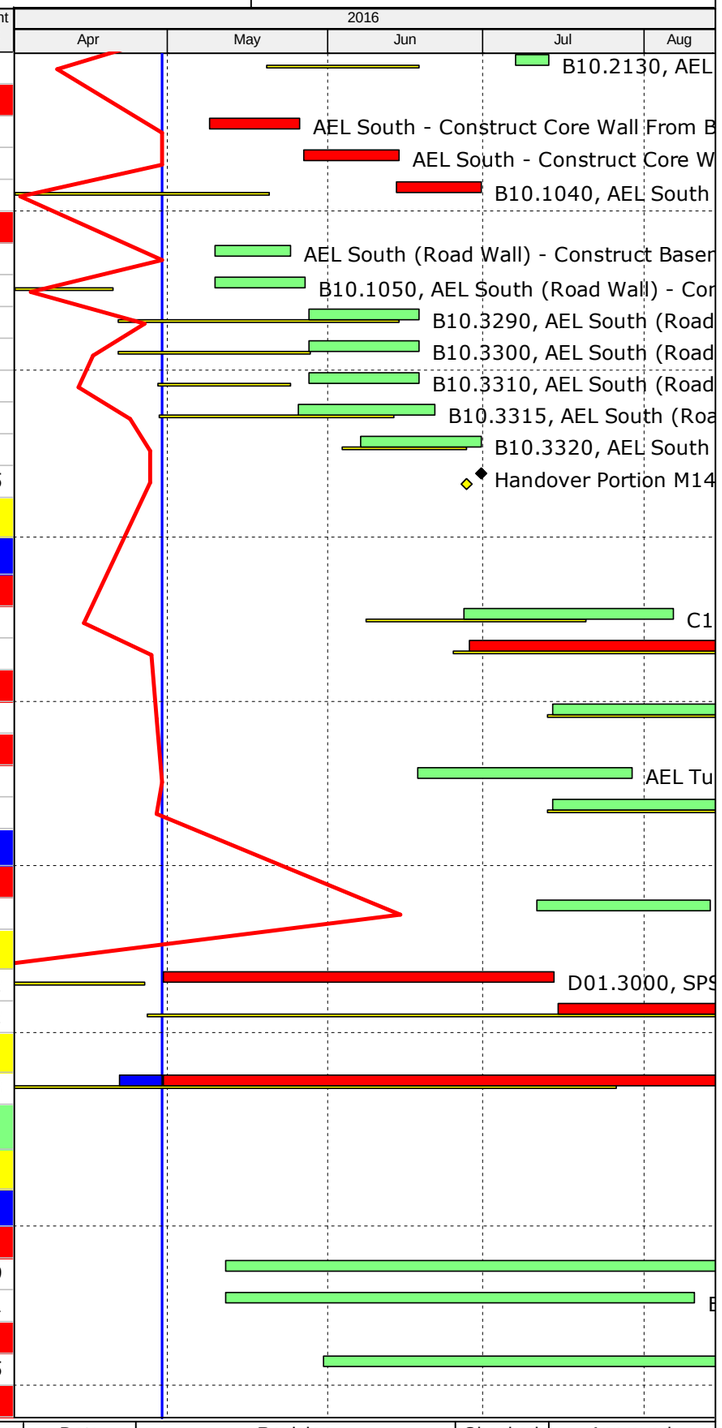
B10.2130	AEL South (DCS) - Concreting for B1 Slab ~+6.05m	6	20-May-16	18-Jun-16	07-Jul-16	13-Jul-16	0%	-20	38
AEL South - East Core Wall From B1/F to 1M/F									
B10.1035	AEL South - Construct Core Wall From B1F to G/F Lv	12			09-May-16	26-May-16	0%		1
B10.1037	AEL South - Construct Core Wall From G/F to 1/F Lv	12			27-May-16	14-Jun-16	0%		1
B10.1040	AEL South - Construct Core Wall From 1/F to 1M/F l	12	01-Apr-16	20-May-16	14-Jun-16	30-Jun-16	0%	-27	1
AEL South - Roadwall Construction Prior H/O to Lyrics Contract by (30 June 2016)									
B10.1045	AEL South (Road Wall) - Construct Basement Plenu	10			10-May-16	24-May-16	0%		21
B10.1050	AEL South (Road Wall) - Construct B1 Slab Bet GL 8	12	01-Apr-16	20-Apr-16	10-May-16	27-May-16	0%	-25	21
B10.3290	AEL South (Road Wall) - Construct External Wall Be	14	21-Apr-16	14-Jun-16	28-May-16	18-Jun-16	0%	-3	21
B10.3300	AEL South (Road Wall) - Construct External Wall Be	14	21-Apr-16	28-May-16	28-May-16	18-Jun-16	0%	-13	21
B10.3310	AEL South (Road Wall) - Construct External Wall Be	14	29-Apr-16	24-May-16	28-May-16	18-Jun-16	0%	-16	40
B10.3315	AEL South (Road Wall) - Construct Walls, Column &	18	29-Apr-16	13-Jun-16	26-May-16	21-Jun-16	0%	-6	38
B10.3320	AEL South (Road Wall) - Construct G/F Slab Bet GL	16	03-Jun-16	27-Jun-16	07-Jun-16	30-Jun-16	0%	-2	38
B10.3330	Handover Portion M14 to Lyric Contractor (App.D1 I	0		27-Jun-16		30-Jun-16	0%	-2	675
Podium Super-Structures									
Trusses									
AEL Tunnel Zone -Trusses 1									
C10.0145	AEL Tunnel Zone - Construct RC Columns for Truss	34	08-Jun-16	20-Jul-16	27-Jun-16	06-Aug-16	0%	-15	2
C10.0150	AEL Tunnel Zone - Erection of Temp Working Platfor	50	25-Jun-16	24-Aug-16	28-Jun-16	26-Aug-16	0%	-2	1
AEL Tunnel Zone -Trusses 2									
C10.0162	AEL Tunnel Zone - Erection of Temp Working Platfor	50	13-Jul-16	09-Sep-16	14-Jul-16	10-Sep-16	0%	-1	4
AEL Tunnel Zone -Trusses 5									
C10.0171	AEL Tunnel Zone - Construct Composite Columns fo	34			18-Jun-16	29-Jul-16	0%		6
C10.0172	AEL Tunnel Zone - Erection of Temp Working Platfor	50	13-Jul-16	09-Sep-16	14-Jul-16	10-Sep-16	0%	-1	8
G/F Slabs - Walls, Columns & G/F Slab									
AEL North									
B20.0015	Podium G/F Portion GF1 - Wall, Column & G/F slab (	23	19-Sep-16	24-Oct-16	11-Jul-16	13-Aug-16	0%	46	70
SPS Structures (include Excavation)									
D01.3000	SPS - ELS Works	61	11-Feb-16	26-Apr-16	30-Apr-16	14-Jul-16	0%	-64	-62
D01.3010	SPS - Construct Basement Structure	100	27-Apr-16	26-Aug-16	15-Jul-16	12-Nov-16	0%	-64	-62
ICP Structures (include Excavation)									
A3980	ICP - ELS works	110	22-Feb-16	26-Jul-16	22-Apr-16 A	17-Oct-16	1%	-53	-53
External Works									
M+ External Works									
Utitlities									
Drainage									
EW1010	Construct the DN375 and DN600 strom drains withi	75	10-Dec-15	14-Mar-16	12-May-16	03-Sep-16	0%	-117	109
EW1045	Construct M+ manholes S1.1, S3.2, S3.3, S3.4 (ter	91	10-Dec-15	09-Mar-16	12-May-16	10-Aug-16	0%	-154	821
Sewage									
EW1000	Construct the DN375 sewer drain within Austin Roa	50	29-Dec-15	29-Feb-16	31-May-16	16-Aug-16	0%	-117	645
Gas									



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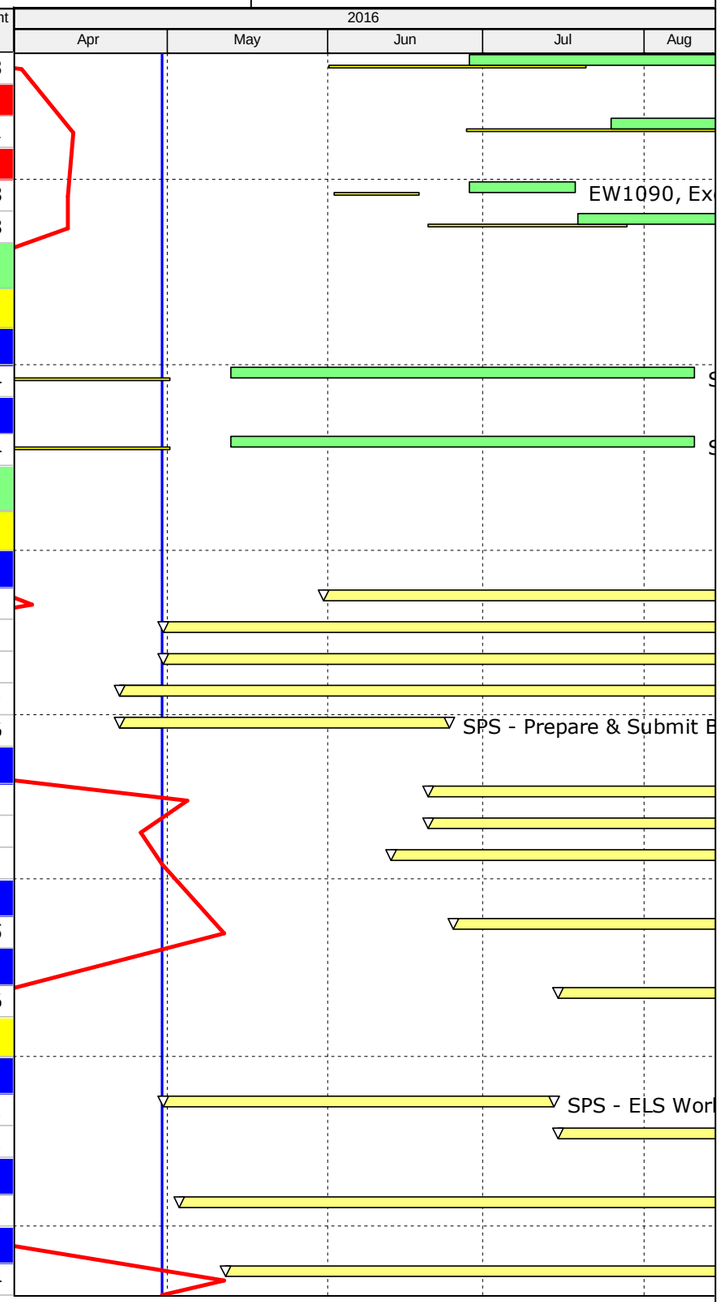
EW1025	Construct the branch gas main for M+	50	01-Jun-16	20-Jul-16	28-Jun-16	16-Aug-16	0%	-27	753
Telecom									
EW1080	Lay Telecom FTNS duct and complete pits connection	72	27-Jun-16	18-Oct-16	25-Jul-16	09-Nov-16	0%	-17	321
CLP									
EW1090	Excavate trench in footway for the 11kV direct burie	12	02-Jun-16	18-Jun-16	28-Jun-16	18-Jul-16	0%	-18	538
EW1100	Lay 11kV power cable by CLP (by others)	25	20-Jun-16	28-Jul-16	19-Jul-16	23-Aug-16	0%	-18	538
Test & Commissioning, Statutory Inspections & OP									
M+									
WSD (FS Pipeworks)									
SH4200	FS - Submit Form WW046 (Part 1 & 2) to WSD (Sut	90	02-Feb-16	01-May-16	13-May-16	10-Aug-16	0%	-101	354
WSD (Plumbing)									
SH4260	Plumbing - Submit Form WW046 (Part 1 & 2) to WS	90	02-Feb-16	01-May-16	13-May-16	10-Aug-16	0%	-101	354
Summary Programme									
Preliminary / Pre-Construction									
BIM / CSD / CBWD									
SM0060	M+ Tower - Prepare & Submit BIM / CBWD / CBWD	294	29-Mar-16	27-Apr-17	31-May-16	29-May-17	0%	-25	39
SM0080	CSF Block - Prepare & Submit BIM / CBWD / CBWD	247	13-Feb-16	13-Dec-16	30-Apr-16	28-Feb-17	0%	-60	89
SM0100	RDE Bldg - Prepare & Submit BIM / CBWD / CBWD	247	13-Feb-16	13-Dec-16	30-Apr-16	28-Feb-17	0%	-60	89
SM0120	ICP - Prepare & Submit BIM / CBWD / CBWD	1	02-Oct-15	20-Feb-16	22-Apr-16 A	18-Aug-16	0%	-145	-19
SM0140	SPS - Prepare & Submit BIM / CBWD / CBWD	0	02-Oct-15	06-Feb-16	22-Apr-16 A	24-Jun-16	0%	-109	766
Facade - Design / Procurement / Delivery									
SM0210	Facade - BD Embed Submission, consent & appvl for	194	20-Jun-16	18-Feb-17	20-Jun-16	13-Feb-17	0%	5	10
SM0220	Facade - BD Embed Submission, consent & appvl for	205	20-Jun-16	21-Feb-17	20-Jun-16	25-Feb-17	0%	-4	3
SM0280	Facade - Performance Test Mockup	162	19-May-16	24-Dec-16	13-Jun-16	24-Dec-16	0%	0	27
Building Services - Design / Procurement / Delivery									
SM0440	Building Services - Manufacture, Fabrication & Deliv	446	28-Jun-16	25-Sep-17	25-Jun-16	13-Sep-17	0%	12	125
Lift and Escalator - Design / Procurement / Delivery									
SM0480	Lifts & Escalators - Manufacture, Fabrication & Deliv	430	29-May-16	09-Aug-17	15-Jul-16	17-Sep-17	0%	-39	106
Construction									
SPS									
SM1465	SPS - ELS Works (Provisional)	61	11-Feb-16	26-Apr-16	30-Apr-16	14-Jul-16	0%	-64	-62
SM1470	SPS - RC Structure	100	27-Apr-16	26-Aug-16	15-Jul-16	12-Nov-16	0%	-64	-62
ICP									
SM1415	ICP - ELS Works	138	22-Feb-16	26-Jul-16	03-May-16	18-Oct-16	0%	-69	-69
External Works									
SM1400	M+ External Works	434	10-Dec-15	10-Nov-17	12-May-16	26-Oct-17	0%	12	234



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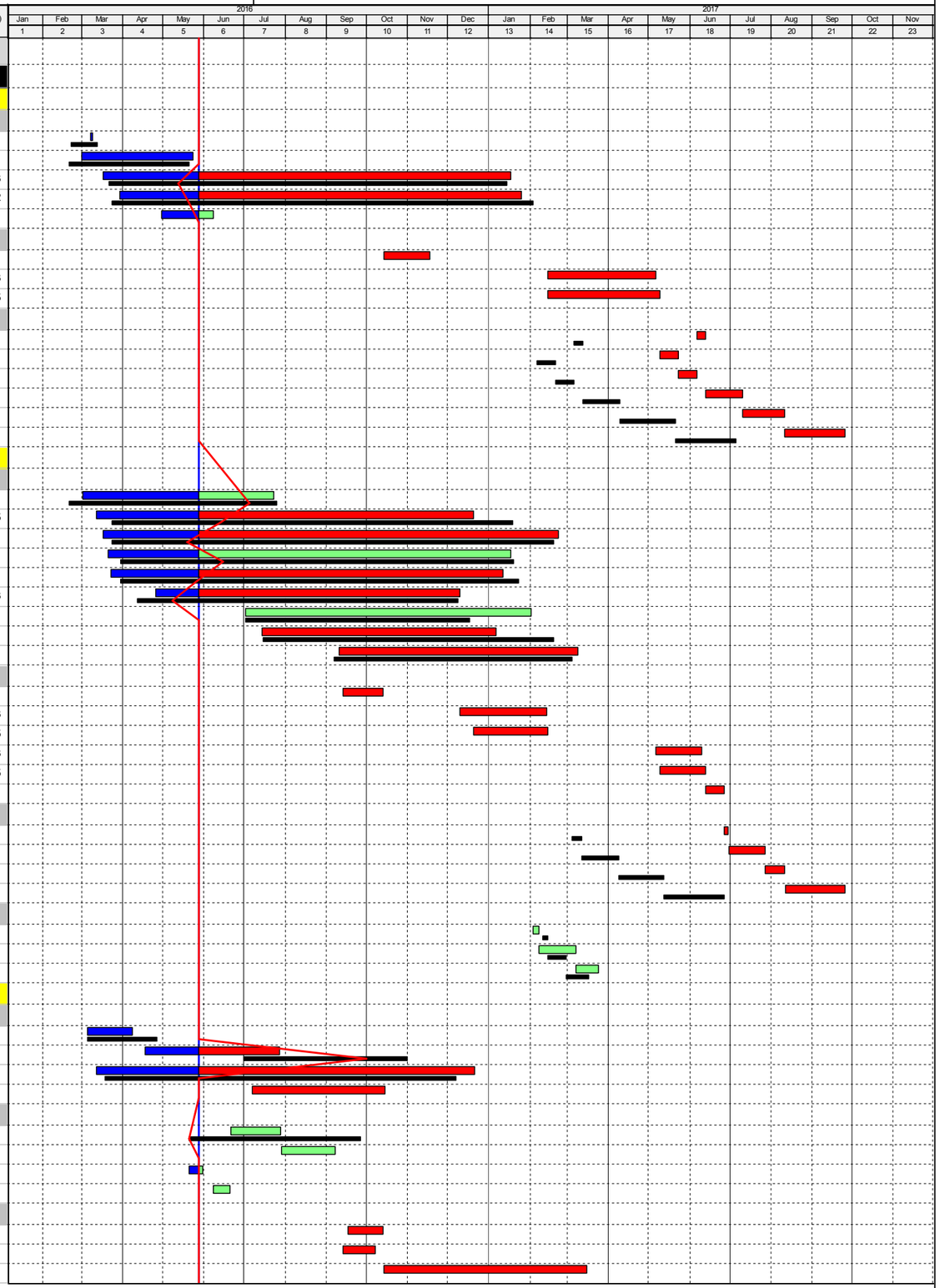
Lyric Theatre Complex

CONTRACT NO: CC/2015/3A/014

SUMMARY PROGRAMME PROGRESS AS OF 27-MAY-2016

Activity ID	Activity Name	Durn. (Days)	Baseline Start	Baseline Finish	Start Date	End Date	Physical % Complete	Finish Variance	Float (Days)
F2 Foundation Works for Lyric Theatre Complex (5WRP)									
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; 56 nos.	71	20-Feb-16	20-May-16	01-Mar-16 A	24-May-16	100%	-2	
LT.0089	Pre-bored H-Pile Construction; Rig 1, 123 nos	243	21-Mar-16	14-Jan-17	17-Mar-16 A	17-Jan-17	17.6%	-3	-123
LT.2225	Pre-bored H-Pile Construction; Rig 2, 126 nos	255	23-Mar-16	03-Feb-17	30-Mar-16 A	25-Jan-17	18.3%	5	-132
LT.2226	Pre-bored H-Pile Construction; Rig 3, 12 nos	25			30-Apr-16 A	07-Jun-16	72%		222
Contract Administrator's Instruction No. 8									
LT.3010	Predrilling in Portion L02 and L03; 14 nos.	30			14-Oct-16	17-Nov-16	0%		-80
LT.3015	Pre-bored H-Pile Construction; Rig 1, 31 nos	65			14-Feb-17	06-May-17	0%		-143
LT.3020	Pre-bored H-Pile Construction; Rig 2, 32 nos	67			14-Feb-17	09-May-17	0%		-145
BA14 and Testing									
LT.0094	Submission of BA14	6	06-Mar-17	12-Mar-17	06-Jun-17	12-Jun-17	0%	-93	-92
LT.0095	CA's Selection of Proof Drilling Locations	14	06-Feb-17	20-Feb-17	09-May-17	23-May-17	0%	-93	-92
LT.0096	Proof Drilling	14	20-Feb-17	06-Mar-17	23-May-17	06-Jun-17	0%	-93	-92
LT.0097	BD's Selection of Test Piles	28	12-Mar-17	09-Apr-17	12-Jun-17	10-Jul-17	0%	-93	-91
LT.0098	Load Testing and Submit Reports	32	09-Apr-17	21-May-17	10-Jul-17	11-Aug-17	0%	-83	-91
LT.0099	BD's Acknowledgement	45	21-May-17	05-Jul-17	11-Aug-17	25-Sep-17	0%	-83	-44
Bored Pile									
Bored Pile Construction									
LT.0102	Predrilling; 145 nos.	125	20-Feb-16	25-Jul-16	02-Mar-16 A	23-Jul-16	87%	1	43
LT.0103	Bored Pile Construction; RCD Rig 1, 24 nos.	244	23-Mar-16	18-Jan-17	12-Mar-16 A	20-Dec-16	27%	22	-145
LT.1895	Bored Pile Construction; RCD Rig 2, 27 nos.	268	23-Mar-16	18-Feb-17	17-Mar-16 A	22-Feb-17	17%	-3	0
LT.1905	Bored Pile Construction; RCD Rig 3, 25 nos.	243	30-Mar-16	19-Jan-17	21-Mar-16 A	17-Jan-17	26%	2	28
LT.1915	Bored Pile Construction; RCD Rig 4, 25 nos.	245	30-Mar-16	23-Jan-17	23-Mar-16 A	11-Jan-17	19%	10	-1
LT.1925	Bored Pile Construction; RCD Rig 5, 15 nos.	200	11-Apr-16	08-Dec-16	26-Apr-16 A	10-Dec-16	11%	-2	-143
LT.1935	Bored Pile Construction; RCD Rig 6, 16 nos.	175	02-Jul-16	17-Dec-16	02-Jul-16	01-Feb-17	0%	-33	18
LT.1945	Bored Pile Construction; RCD Rig 7, 13 nos.	146	15-Jul-16	18-Feb-17	14-Jul-16	06-Jan-17	0%	33	3
LT.2215	Sonic Logging and Interface Coring Test; Excluding Portion L02 and L03	145	06-Sep-16	04-Mar-17	10-Sep-16	08-Mar-17	0%	-3	0
Contract Administrator's Instruction No. 8									
LT.2891	Predrilling in Portion L02 and L03; 11 nos.	24			13-Sep-16	13-Oct-16	0%		-94
LT.2895	Bored Pile Construction; RCD Rig 5, 4 nos.	50			10-Dec-16	13-Feb-17	0%		-143
LT.2905	Bored Pile Construction; RCD Rig 1, 3 nos.	43			20-Dec-16	14-Feb-17	0%		-145
LT.2915	Bored Pile Construction; RCD Rig 5, 2 nos.	29			06-May-17	09-Jun-17	0%		-143
LT.2925	Bored Pile Construction; RCD Rig 1, 2 nos.	29			09-May-17	12-Jun-17	0%		-145
LT.2935	Sonic Logging and Interface Coring Test; Portion L02 and L03	12			13-Jun-17	26-Jun-17	0%		-87
BA14 and Testing									
LT.0108	Submission of BA14	3	04-Mar-17	11-Mar-17	27-Jun-17	29-Jun-17	0%	-87	-87
LT.0109	BD's Selection of Test Piles	28	11-Mar-17	08-Apr-17	30-Jun-17	27-Jul-17	0%	-110	-93
LT.0110	Concrete Coring Test and Submit Reports	13	08-Apr-17	12-May-17	27-Jul-17	11-Aug-17	0%	-76	-76
LT.0111	BD's Acknowledgement	45	12-May-17	26-Jun-17	12-Aug-17	25-Sep-17	0%	-91	-44
BA14 and Testing at Area 6 if Option is Exercised									
LT.0113	Submission of BA14	3	10-Feb-17	14-Feb-17	03-Feb-17	07-Feb-17	0%	5	23
LT.0114	BD's Selection of Test Piles	28	14-Feb-17	28-Feb-17	07-Feb-17	07-Mar-17	0%	-8	27
LT.0115	Concrete Coring Test and Submit Reports	15	28-Feb-17	17-Mar-17	07-Mar-17	24-Mar-17	0%	-7	23
Excavation and Lateral Support									
Pipe Pile									
LT.0120	Pre-grouting Works at Seawall Area; Portion M15, M16, L01 and L16	40	05-Mar-16	26-Apr-16	05-Mar-16 A	08-Apr-16 A	100%	16	
LT.0121	Pre-grouting Works at Portion L05, M14b; L05; L07 and M12	101	30-Jun-16	31-Oct-16	18-Apr-16 A	27-Jul-16	75.3%	79	-2
LT.0122	Pipe Pile and Grout Curtain; Portion L04, L05, L14, L24, M14 and M14b; (PP 443 nos and CPP 3 nos.)	215	18-Mar-16	07-Dec-16	12-Mar-16 A	21-Dec-16	26.7%	-12	1
LT.3030	Clutched Pipe Pile and Grout Curtain; M14a, L16 and L01; (CPP 82 nos.)	83			07-Jul-16	14-Oct-16	0%		-2
Sheet Piles									
LT.0124	Sheet Piles Installation in Portion L06; 1,472m2	32	20-May-16	26-Sep-16	21-Jun-16	28-Jul-16	0%	49	15
LT.2945	Sheet Piles Installation in Portion L07 and M12; 1,640m2	35			29-Jul-16	07-Sep-16	0%		15
LT.2950	Instrument Installation for Instrumental Sheet Pile	15			21-May-16	30-May-16	85%		22
LT.2955	Drive Instrumental Sheet Pile and Report Submission	10			08-Jun-16	20-Jun-16	0%		15
Contract Administrator's Instruction No. 8									
LT.3050	Pre-grouting Works adjacent Seawall Portion L03	21			17-Sep-16	13-Oct-16	0%		-65
LT.3060	Pipe Pile and Grout Curtain; Portion L02; (PP 21nos.)	20			13-Sep-16	07-Oct-16	0%		-61
LT.3070	Clutched Pipe Pile and Grout Curtain; Portion L03; (CPP 104 nos. and PP 4 nos)	125			14-Oct-16	15-Mar-17	0%		-65



Project Baseline Bar
Actual Work
Remaining Work
Critical Remaining Work
Milestone

WEST KOWLOON CULTURAL DISTRICT AUTHORITY
FOUNDATION WORKS FOR LYRIC THEATRE COMPLEX AND THE EXTENDED BASEMENT IN ZONE 3B
SUMAMRY PROGRAMME BASED ON CONSTRUCTION WORKS PROGRAMME - REV. "0"

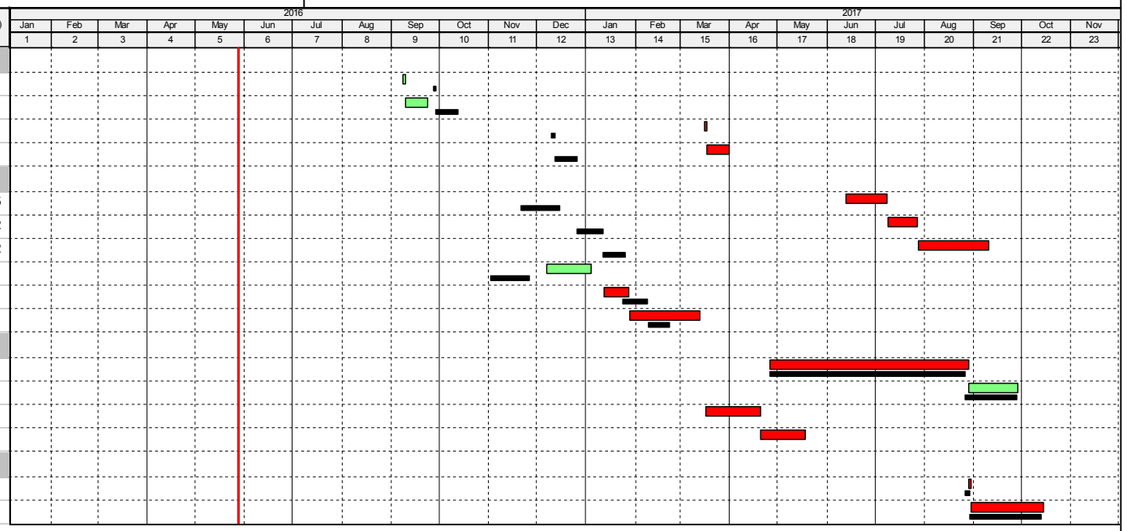
Gammon

Date	Revision	Checked	Approved
27-May-16	For Information	R.L.	A.W.

CONTRACT NO: CC/2015/3A/014

SUMMARY PROGRAMME PROGRESS AS OF 27-MAY-2016

Activity ID	Activity Name	Durn. (Days)	Baseline Start	Baseline Finish	Start Date	End Date	Physical % Complete	Finish Variance	Float (Days)
BA14									
LT.0126	Submission of BA14 for Stage 1 ELS Sheet Piling Works at Area 6	2	27-Sep-16	28-Sep-16	08-Sep-16	09-Sep-16	0%	15	15
LT.0127	BD's Acknowledgement	14	28-Sep-16	12-Oct-16	09-Sep-16	23-Sep-16	0%	19	19
LT.0128	Submission of BA14 for Stage 1 ELS Piling Works at Area 1 to 5	2	10-Dec-16	12-Dec-16	16-Mar-17	17-Mar-17	0%	-76	-65
LT.0129	BD's Acknowledgement	14	12-Dec-16	26-Dec-16	17-Mar-17	31-Mar-17	0%	-95	-83
Pumping Test									
LT.0131	Install Area 1 to Area 5 Pumping Test Instrumentation & Wells (14 PW + 28 OW) and Submission of Initial Rea	22	21-Nov-16	15-Dec-16	13-Jun-17	08-Jul-17	0%	-162	-145
LT.0132	Carry Out Pumping Test in Area 1 to Area 5 and Submission to BD	19	26-Dec-16	11-Jan-17	09-Jul-17	27-Jul-17	0%	-197	-182
LT.0133	Obtain BD's Acknowledgement of Area 1 to 5 Pumping Test Results	45	11-Jan-17	25-Jan-17	28-Jul-17	10-Sep-17	0%	-228	-182
LT.0134	Install Area 6 Pumping Test Instrumentation & Wells (3 PW + 6 OW) and Submission of Initial Readings	21	02-Nov-16	26-Nov-16	07-Dec-16	04-Jan-17	0%	-30	5
LT.0135	Carry Out Pumping Test in Area 6 and submission to BD	16	24-Jan-17	08-Feb-17	12-Jan-17	27-Jan-17	0%	12	-1
LT.0136	Obtain BD's Acknowledgement of Area 6 Pumping Test Results	45	09-Feb-17	22-Feb-17	28-Jan-17	13-Mar-17	0%	-19	-1
Option Stage 2 ELS and Excavation Works at Area 6									
LT.0138	Bulk Excavation and Installation of Struts	102	26-Apr-17	26-Aug-17	26-Apr-17	28-Aug-17	0%	-2	-1
LT.0139	Trim Pile Head and Clearance	27	26-Aug-17	27-Sep-17	28-Aug-17	28-Sep-17	0%	-1	11
LT.3075	Submission of BA8 and BA10 for Bulk Excavation Works	35			17-Mar-17	20-Apr-17	0%		-1
LT.3080	Installation of Temporary Platform	22			20-Apr-17	18-May-17	0%		-1
BA14 for Option Stage 2 ELS and Excavation Works at Area 6									
LT.0141	Submission of BA14 for Stage 2 ELS and Excavation Works at Area 6	2	26-Aug-17	29-Aug-17	28-Aug-17	30-Aug-17	0%	-1	-1
LT.0142	BD's Acknowledgement	45	29-Aug-17	13-Oct-17	30-Aug-17	14-Oct-17	0%	-1	-1



Project Baseline Bar
Actual Work
Remaining Work
Critical Remaining Work
Milestone

WEST KOWLOON CULTURAL DISTRICT AUTHORITY
FOUNDATION WORKS FOR LYRIC THEATRE COMPLEX
AND THE EXTENDED BASEMENT IN ZONE 3B
SUMAMRY PROGRAMME BASED ON
CONSTRUCTION WORKS PROGRAMME - REV. "0"

Gammon

Date	Revision	Checked	Approved
27-May-16	For Information	R.L.	A.W.

Appendix C. Action and Limit Levels for Construction Phase

Air Quality

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

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

Monitoring Station	Action Level (µg/m3)	Limit Level (µg/m3)
AM1	273.7	500
AM2	274.2	500

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

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

Noise

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

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

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

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

Air Quality

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

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

Event	Action			
	ET	IEC	WKCDA	Contractor
Action Level				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and WKCDA; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and WKCDA; 3. Advise the WKCDA on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and WKCDA; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Monitor the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial to WKCDA within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform WKCDA, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the WKCDA on the effectiveness of the proposed remedial measures; 5. Monitor the implementation of	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.

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

Construction Noise

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

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

	Action			
Event	**ET Leader**	**IEC**	**WKCDA**	**Contractor**
Action Level	1. Notify WKCDA, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, WKCDA and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the WKCDA accordingly; 3. Advise the WKCDA on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures.	1. Submit noise mitigation proposals to IEC and WKCDA; 2. Implement noise mitigation proposals.
Limit Level	1. Inform IEC, WKCDA, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and WKCDA on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and WKCDA informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst WKCDA, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the WKCDA accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and WKCDA within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the WKCDA until the exceedance is abated.

Landscape and Visual Impact

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

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

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

Appendix E. Monitoring Schedule

MAY 2016

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

JUNE 2016

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

Appendix F. Calibration Certifications

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM1(ICC)
Calibrated by	:	K.T.Ho
Date	:	16/04/2016

Sampler

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

Calibration Orfice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1008
Ta(K)	:	296

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	10.2	3.197	1.552	60	60.05
2	13 holes	8.4	2.901	1.411	54	54.05
3	10 holes	6.2	2.492	1.217	44	44.04
4	7 holes	4.4	2.099	1.030	36	36.03
5	5 holes	2.6	1.614	0.799	26	26.02

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

Sampler Calibration Relationship

Slope(m):45.600 Intercept(b): -10.760 Correlation Coefficient(r): 0.9994

Checked by:_____ Date: 22/04/2016
Magnum Fan

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM2 (Harbourside)
Calibrated by	:	K.T.Ho
Date	:	16/04/2016

Sampler

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

Calibration Orfice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1008
Ta(K)	:	296

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.0	3.467	1.680	60	60.05
2	13 holes	9.0	3.003	1.459	52	52.05
3	10 holes	6.5	2.552	1.245	42	42.04
4	7 holes	4.4	2.099	1.030	32	32.03
5	5 holes	2.4	1.551	0.769	22	22.02

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

Sampler Calibration Relationship

Slope(m):42.631 Intercept(b):-11.089 Correlation Coefficient(r): 0.9990

Checked by: Date: 22/04/2016

Magnum Fan

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

CALIBRATION CERTIFICATE

Date: October 7, 2015

Equipment Name	:	Digital Dust Indicator, Model LD-3B
Code No.	:	080000-42
Quantity	:	1 unit
Serial No.	:	245834
Sensitivity	:	0.001 mg/m3
Sensitivity Adjustment	:	710CPM
Scale Setting	:	October 2, 2015

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

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Shintaro Okamura

Shintaro Okamura
Overseas Sales Division

TEST CERTIFICATE

Report No. 15-1461

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.

SIBATA SCIENTIFIC TECHNOLOGY LTD.

DATE 05/October /2015

APPROVE DY	VERIFIED BY	ISSUED BY

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

Testing Category	Judging Standard	Judgment			
Function Test	Switch, Display, Wiring will nomally function	OK			
Sensitivity Calibration	Count is ±2% accurate to the master by the standard calibration particle	Reading of Master	Reading of this Instrument	Correction	Inspection chart
		797 CPM	792 CPM	−0.6 %	Reference Value(S)
Dust Concentration Measuring	Count is ±10% accurate to the master under the 3 different concentration.	2068 CPM	2040 CPM	−1.4 %	710 CPM
		1038 CPM	1042 CPM	+0.4 %	
		532 CPM	538 CPM	+1.1 %	Test atmosphere
Stability	The maximum value of the sensitivity adjustment scale setting value of the machine and the difference with minimum value are within 5% compared with the maximum value. (The measurement is repeated three times for one minute.)	OK			Temperature: 23 ℃ / Humidity: 60 %
Synthetic Judgment		Good			

TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 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)
0.9866	0.7037	1.4078
0.9824	0.9765	1.9909
0.9803	1.0880	2.2259
0.9792	1.1399	2.3345
0.9738	1.3735	2.8155

Qstd slope (m) = 2.10326
intercept (b) = -0.06696
coefficient (r) = 0.99989

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.7102	0.8896
0.9914	0.9855	1.2581
0.9893	1.0980	1.4066
0.9882	1.1504	1.4753
0.9828	1.3862	1.7792

Qa slope (m) = 1.31703
intercept (b) = -0.04232
coefficient (r) = 0.99989

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C153242
證書編號

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

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

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 14 June 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : H C Chan, Engineer

Date of Issue 簽發日期 : 16 June 2015

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C153242
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the internal standard (After Adjustment) was performed before the test form 6.1.1.2 to 6.4.

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

4. Test equipment :

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

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

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

6.1.1.2 After Adjustment

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

6.1.2 Linearity

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

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

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6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
20 -110	L_A	A	Fast	106.00	Continuous	106.0	Ref.
	$L_A$max				200 ms	105.0	-1.0 ± 1.0
	L_A		Slow		Continuous	106.0	Ref.
	$L_A$max				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	31.5 Hz	54.3	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5; -3.0)
					12.5 kHz	90.1	-4.3 (+3.0; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C153242
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	31.5 Hz	90.6	-3.0 ± 1.5
					63 Hz	93.0	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.4	-0.8 ± 1.0
					8 kHz	91.1	-3.0 (+1.5; -3.0)
					12.5 kHz	88.2	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

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

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

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

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

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

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

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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C153930
證書編號

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

Description / 儀器名稱 : Precision Integrating Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-18
Serial No. / 編號 : 00360030
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 July 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong
Assistant Technical Officer

Certified By 核證 : K C Lee
Project Engineer

Date of Issue 簽發日期 : 22 July 2015

Sun Creation Engineering Limited Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
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Certificate of Calibration
校正證書

Certificate No. : C153930
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

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

4. Test equipment :

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

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	93.6	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
60 - 120	LA	A	Fast	94.00	1	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

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

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	93.6	Ref.
			Slow			93.6	± 0.1

Certificate of Calibration
校正證書

Certificate No. : C153930
證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
50 -110	LA	A	Fast	106.00	Continuous	106.0	Ref.
	LAmx				200 ms	105.0	-1.0 ± 1.0
	LA		Slow		Continuous	106.0	Ref.
	LAmx				500 ms	102.4	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LA	A	Fast	94.00	31.5 Hz	53.9	-39.4 ± 1.5
					63 Hz	67.2	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.0
					250 Hz	84.8	-8.6 ± 1.0
					500 Hz	90.3	-3.2 ± 1.0
					1 kHz	93.6	Ref.
					2 kHz	94.9	+1.2 ± 1.0
					4 kHz	94.7	+1.0 ± 1.0
					8 kHz	92.5	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.3	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LC	C	Fast	94.00	31.5 Hz	90.5	-3.0 ± 1.5
					63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.0
					250 Hz	93.6	0.0 ± 1.0
					500 Hz	93.6	0.0 ± 1.0
					1 kHz	93.6	Ref.
					2 kHz	93.5	-0.2 ± 1.0
					4 kHz	92.8	-0.8 ± 1.0
					8 kHz	90.6	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.3	-6.2 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C153930
證書編號

6.4 Time Averaging

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

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

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

- Uncertainties of Applied Value :

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

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

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

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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C153241
證書編號

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

Description / 儀器名稱 : Sound Level Calibrator
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10997142
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 14 June 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : K C Lee
Project Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 16 June 2015

Sun Creation Engineering Limited Calibration & Testing Laboratory
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C153241
證書編號

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

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

3. Test equipment :

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

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

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

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.986	1 kHz ± 2 %	± 1

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

Note :
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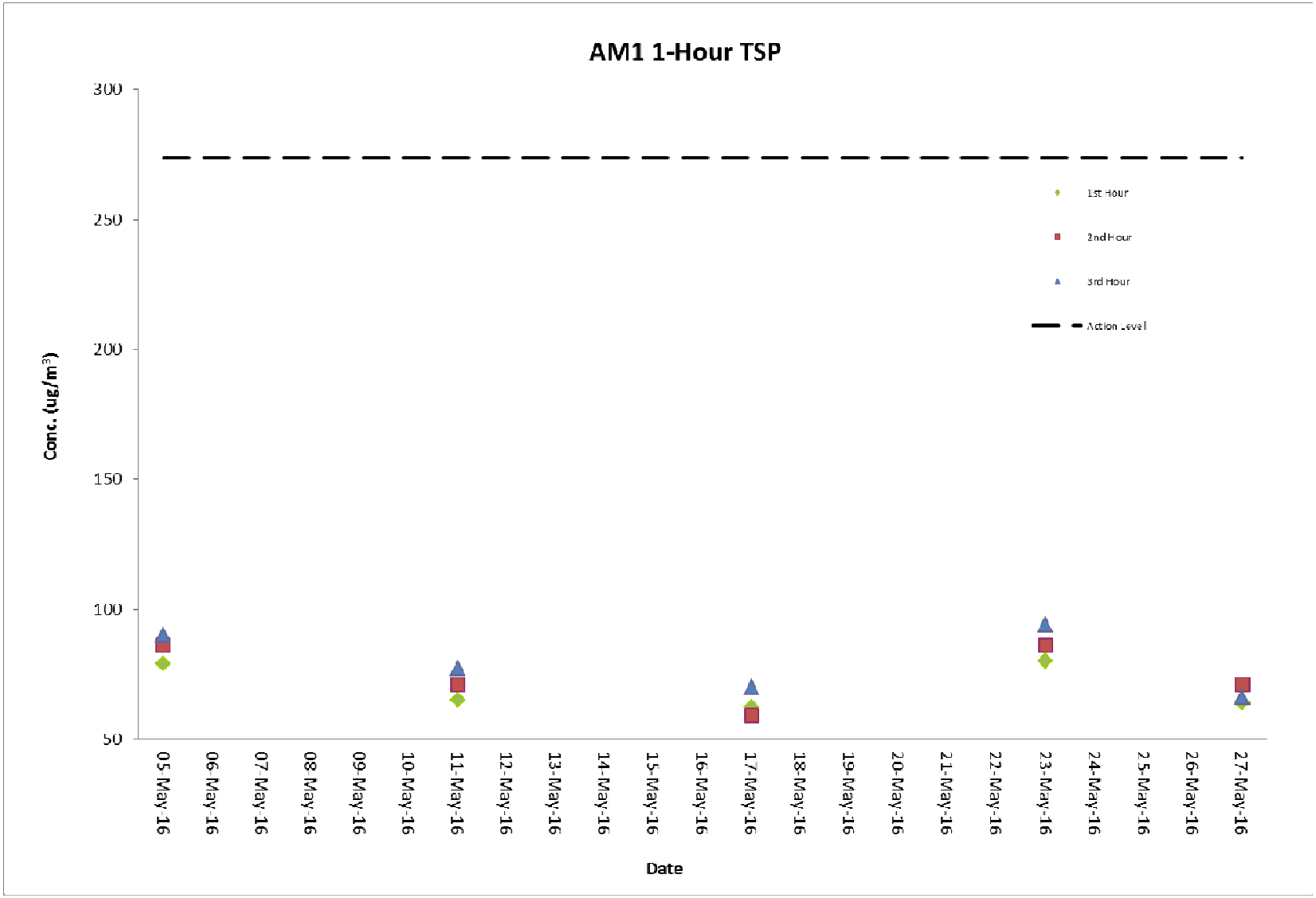
Appendix G. Graphical Plots of the Monitoring Results

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

Date	Weather Condition	Time	Conc. (μg/m^3)			Action Level (μg/m^3)	Limit Level (μg/m^3)
			1st Hour	2nd Hour	3rd Hour		
05-May-16	Fine	10:42 - 16:00	79	86	90	273.7	500
11-May-16	Sunny	10:38 - 16:00	65	71	77	273.7	500
17-May-16	Cloudy	10:48 - 16:00	62	59	70	273.7	500
23-May-16	Sunny	10:42 - 16:00	80	86	94	273.7	500
27-May-16	Cloudy	8:02 - 11:02	64	71	66	273.7	500

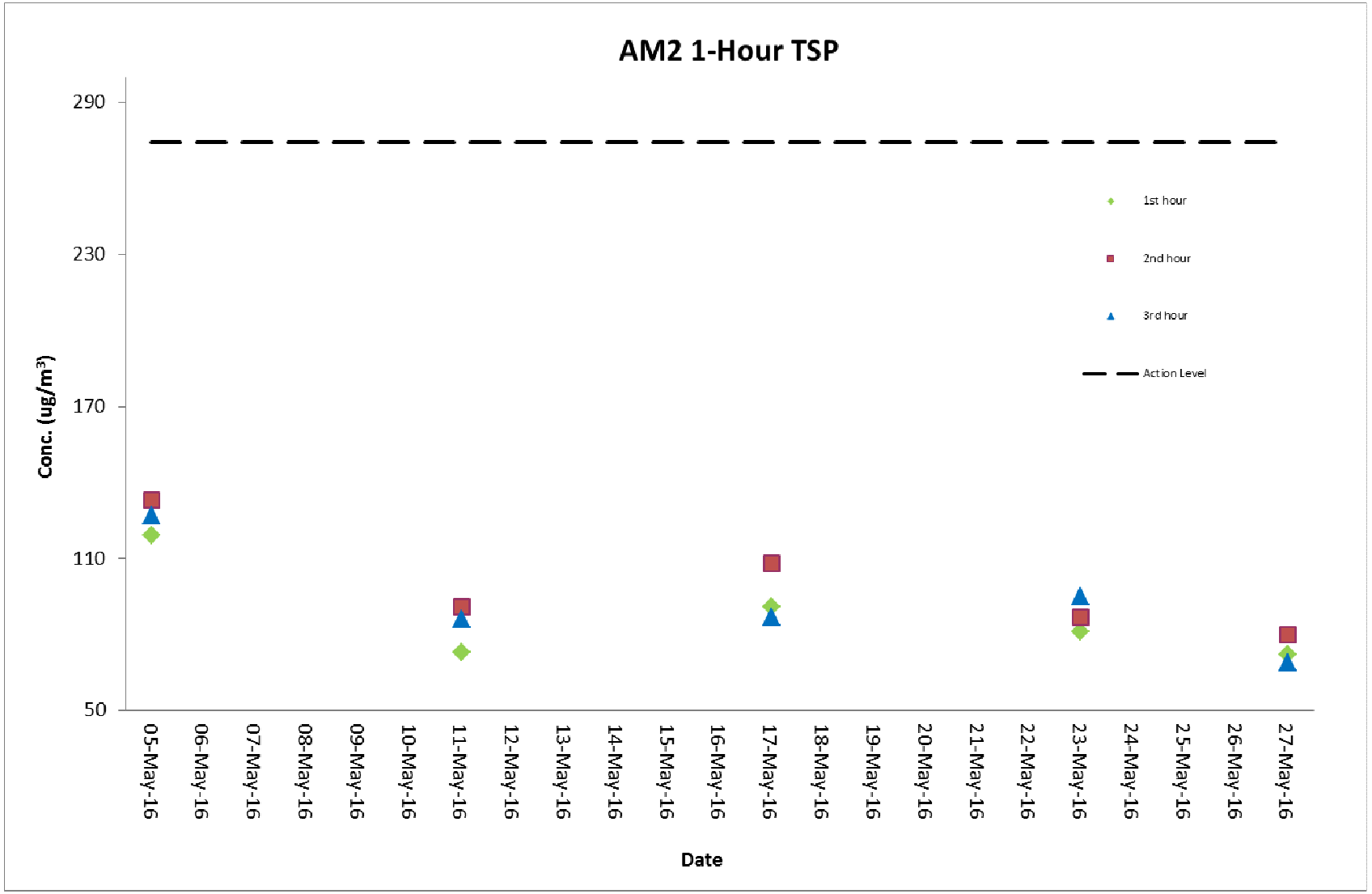
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



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

Date	Weather Condition	Time	Conc. (μg/m^3)			Action Level (μg/m^3)	Limit Level (μg/m^3)
			1st Hour	2nd Hour	3rd Hour		
05-May-16	Fine	10:52 - 16:10	119	133	127	274.2	500
11-May-16	Sunny	10:50 - 16:10	73	91	86	274.2	500
17-May-16	Cloudy	11:00 - 16:10	91	108	87	274.2	500
23-May-16	Sunny	10:52 - 16:10	81	87	95	274.2	500
27-May-16	Cloudy	8:12 - 16:10	72	80	69	274.2	500

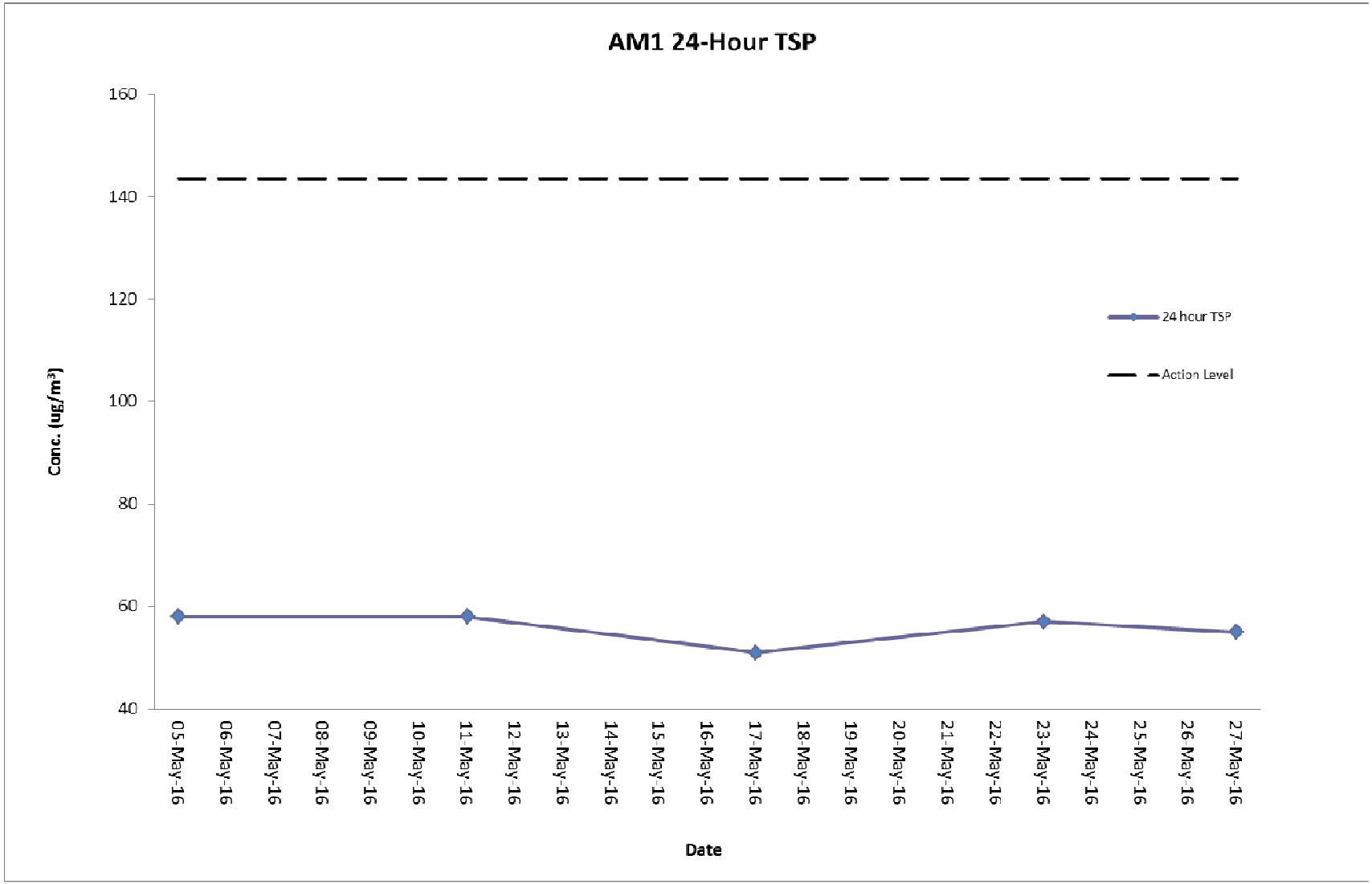
Graphical Presentation of Air Quality Monitoring Result at Station AM2 (1-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
05-May-16	10:40	06-May-16	10:40	2.7988	2.8998	19440.38	19464.38	24	1.2	1.2	1.2	58	Fine	143.6	260
11-May-16	10:39	12-May-16	10:39	2.7969	2.8972	19464.38	19488.38	24	1.2	1.2	1.2	58	Sunny	143.6	260
17-May-16	10:50	18-May-16	10:50	2.8082	2.8966	19488.38	19512.38	24	1.2	1.2	1.2	51	Cloudy	143.6	260
23-May-16	10:40	24-May-16	10:40	2.806	2.904	19512.38	19536.38	24	1.2	1.2	1.2	57	Sunny	143.6	260
27-May-16	08:00	28-May-16	08:00	2.8045	2.899	19536.38	19560.38	24	1.2	1.2	1.2	55	Cloudy	143.6	260

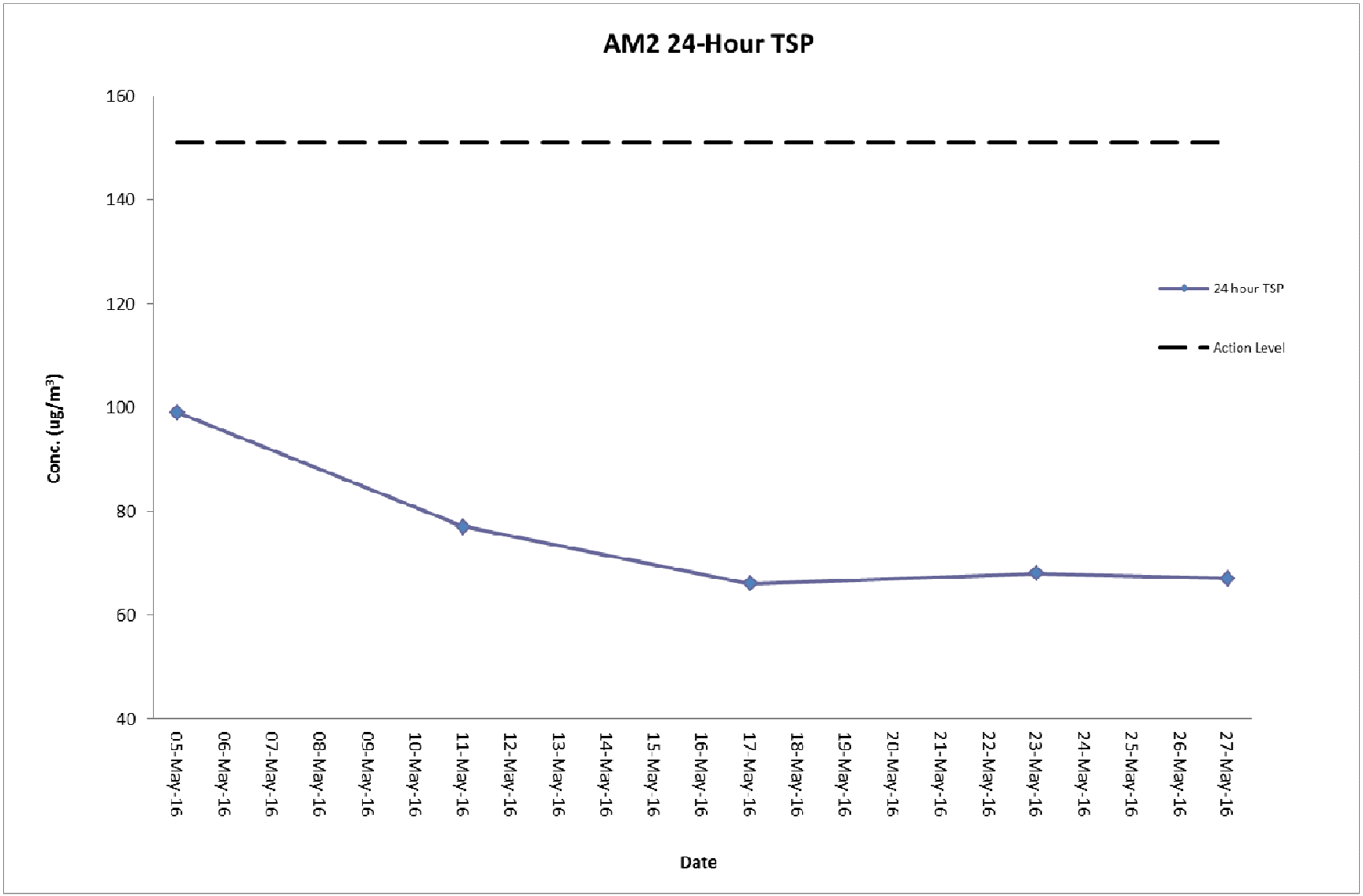
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
05-May-16	10:55	06-May-16	10:55	2.8027	2.9803	15143.59	15167.59	24	1.25	1.25	1.25	99	Fine	151.1	260
11-May-16	10:52	12-May-16	10:52	2.802	2.9411	15167.59	15191.59	24	1.25	1.25	1.25	77	Sunny	151.1	260
17-May-16	11:02	18-May-16	11:02	2.8327	2.9511	15191.59	15215.59	24	1.25	1.25	1.25	66	Cloudy	151.1	260
23-May-16	10:54	24-May-16	10:54	2.8103	2.9327	15215.59	15239.59	24	1.25	1.25	1.25	68	Sunny	151.1	260
27-May-16	08:17	28-May-16	08:17	2.8205	2.9411	15239.59	15263.59	24	1.25	1.25	1.25	67	Cloudy	151.1	260

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



Noise Monitoring Result at Station NM1A

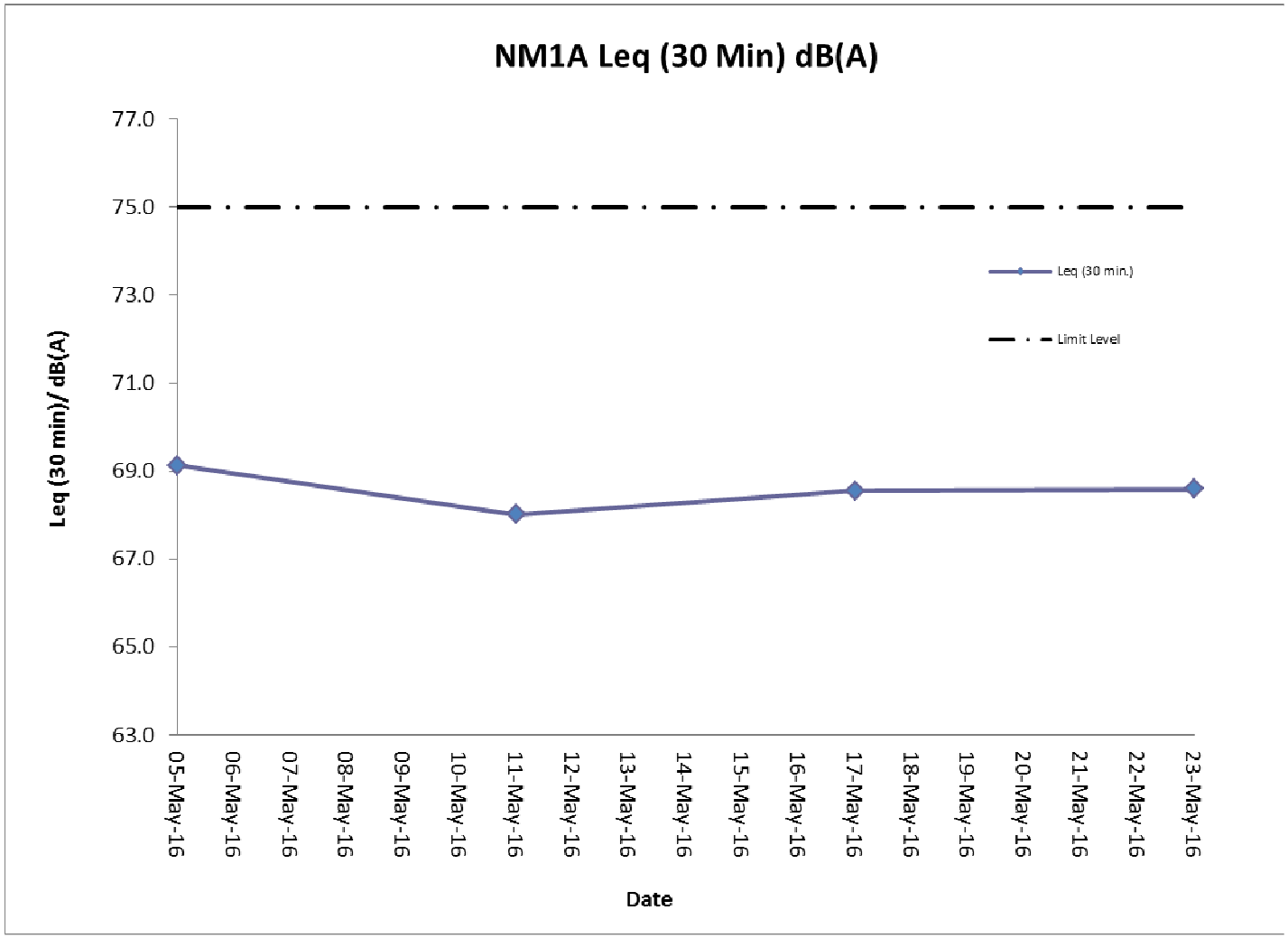
Date	Time	Measured L_{10} dB(A)	Measured L_{90} dB(A)	L_{eq} (30 min.) dB(A)
05-May-16	14:00	68.0	63.7	69.1
05-May-16	14:05	66.9	62.1	
05-May-16	14:10	67.7	63.0	
05-May-16	14:15	67.4	63.3	
05-May-16	14:20	69.0	64.1	
05-May-16	14:25	68.4	63.4	
11-May-16	14:00	66.0	62.0	68.0
11-May-16	14:05	66.0	61.1	
11-May-16	14:10	66.7	62.9	
11-May-16	14:15	67.0	63.0	
11-May-16	14:20	67.4	63.4	
11-May-16	14:25	67.7	63.9	
17-May-16	14:00	67.0	62.7	68.6
17-May-16	14:05	67.4	63.4	
17-May-16	14:10	67.7	63.7	
17-May-16	14:15	66.9	62.9	
17-May-16	14:20	67.8	63.4	
17-May-16	14:25	68.0	64.0	
23-May-16	14:00	67.0	62.7	68.6
23-May-16	14:05	68.0	63.0	
23-May-16	14:10	67.7	63.4	
23-May-16	14:15	67.4	63.2	
23-May-16	14:20	66.2	62.8	
23-May-16	14:25	67.9	63.4	

Remarks:

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

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

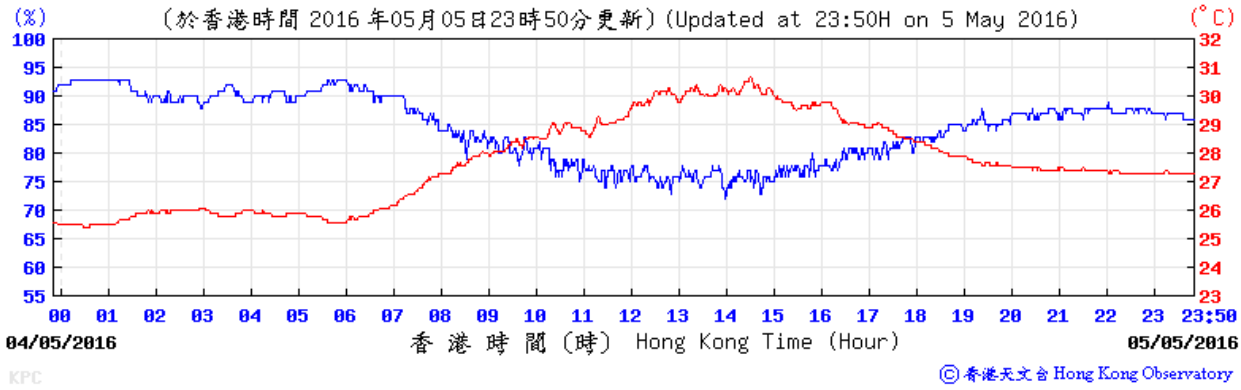
Graphical Presentation Noise Monitoring Result at Station NM1A



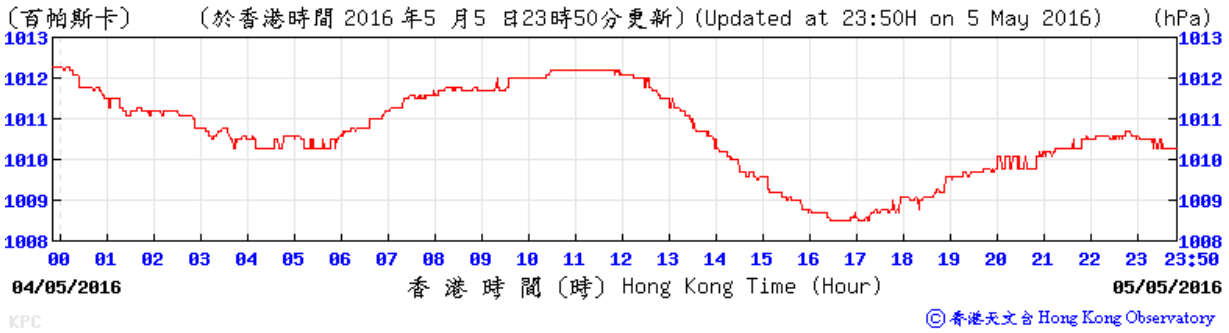
Appendix H. Meteorological Data Extracted from Hong Kong Observatory

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

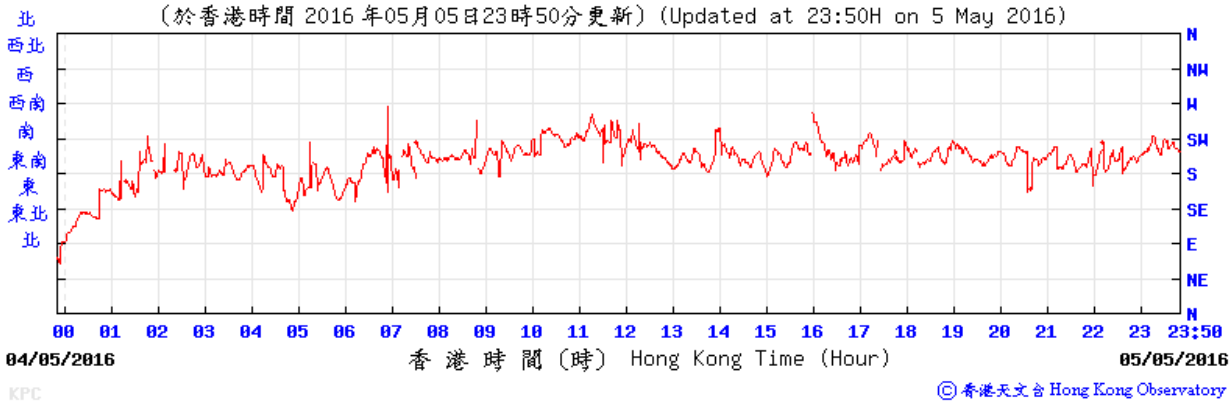
Temperature/Humidity:



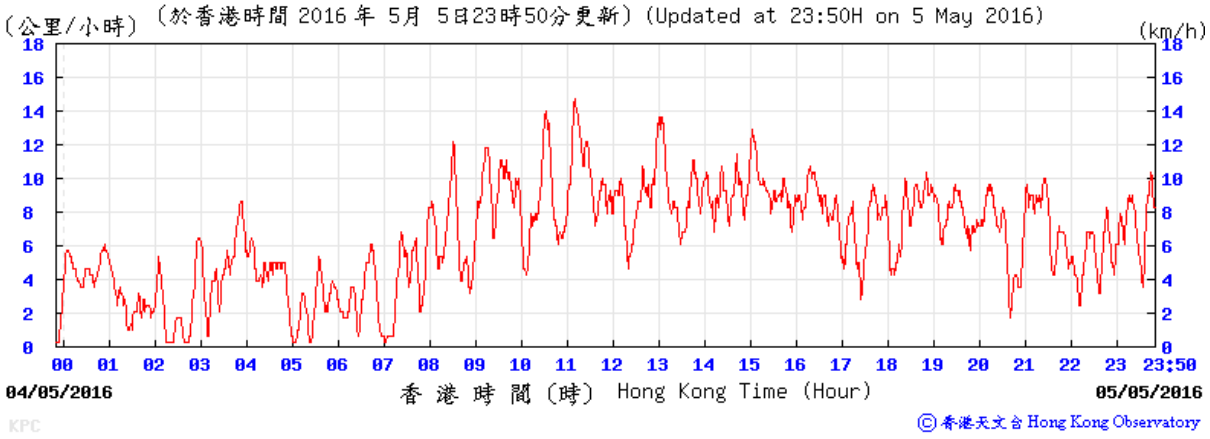
Pressure:



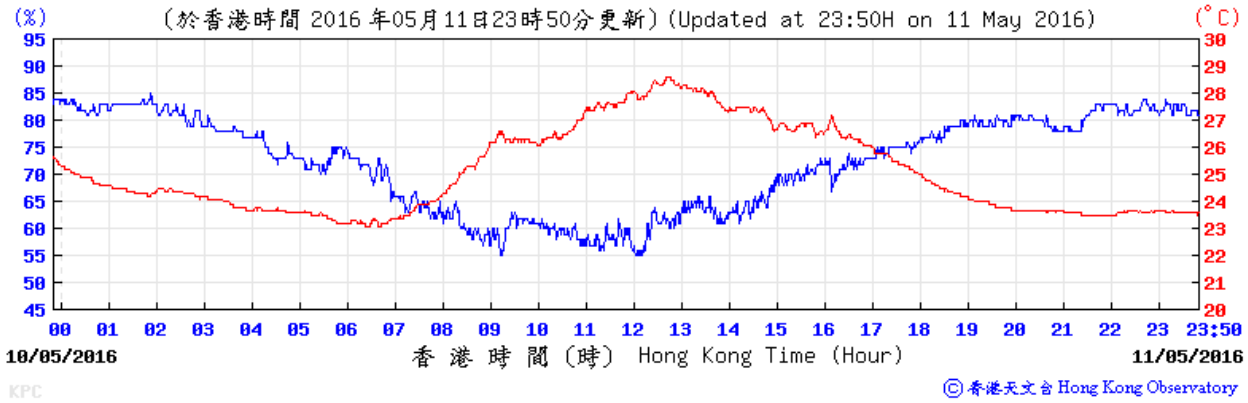
Wind Direction:



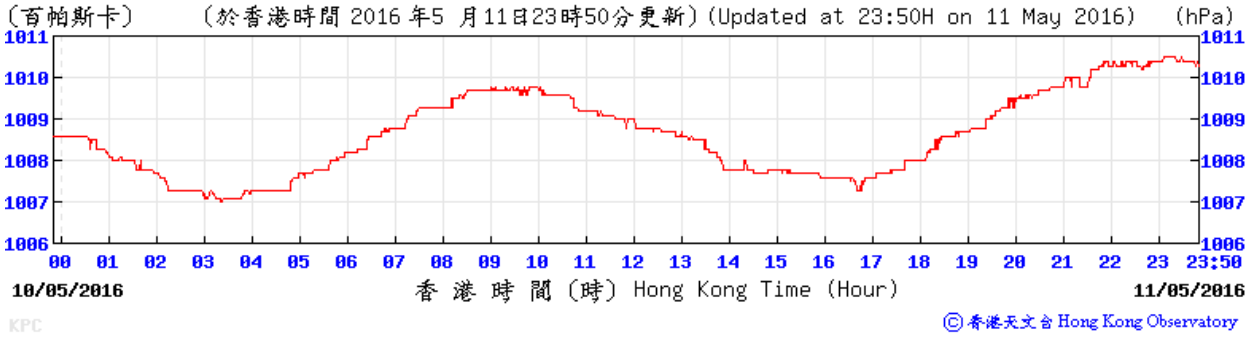
Wind Speed:



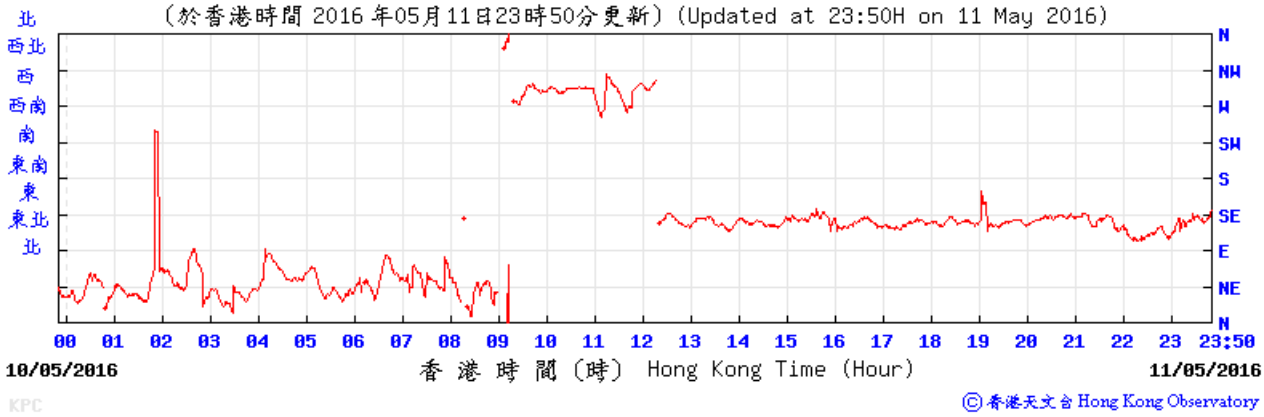
Temperature/Humidity:



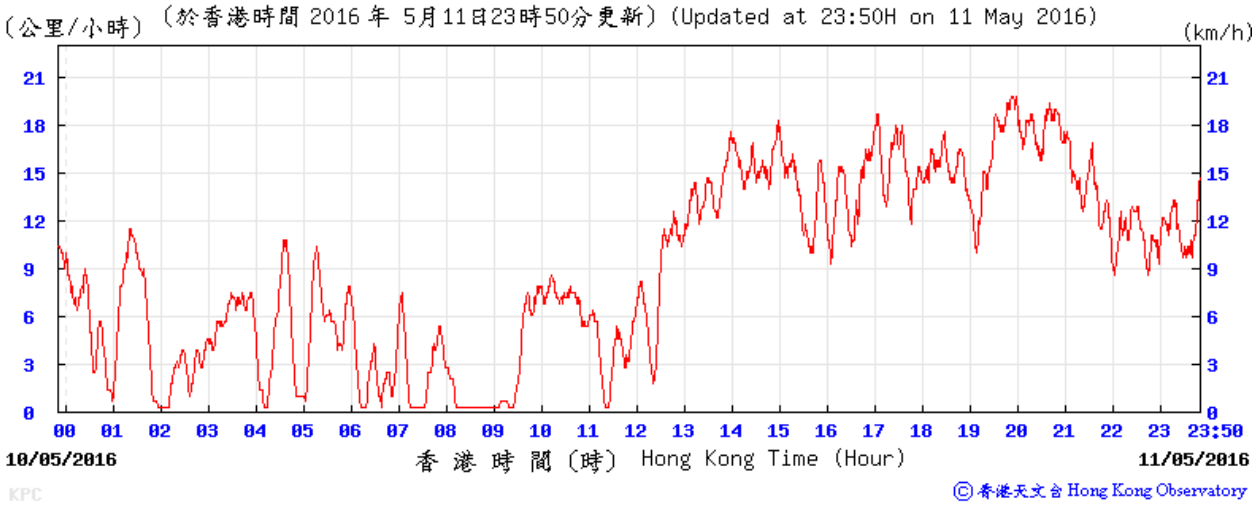
Pressure:



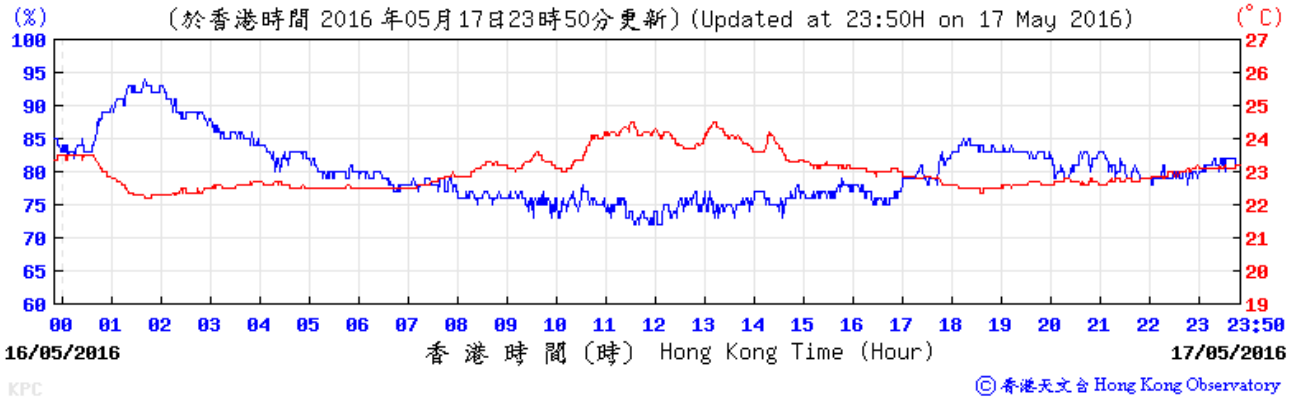
Wind Direction:



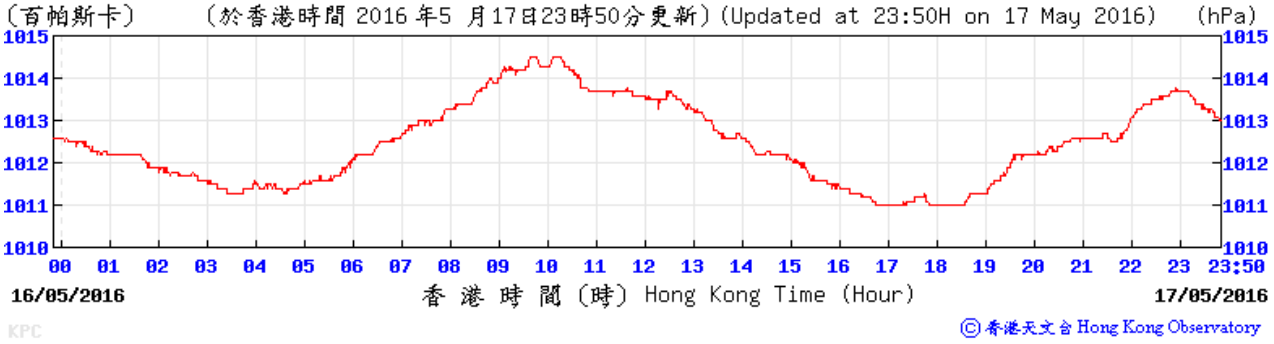
Wind Speed:



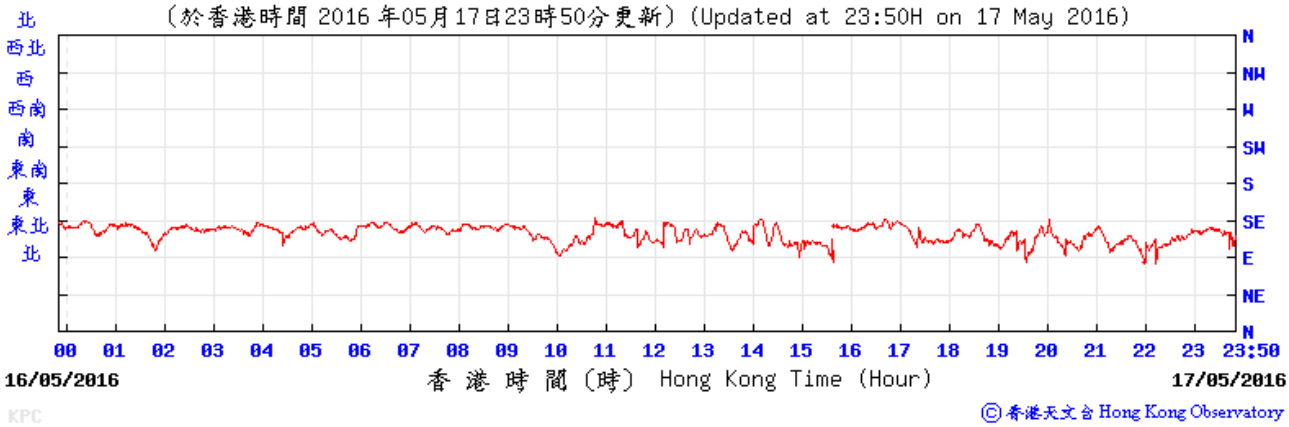
Temperature/Humidity:



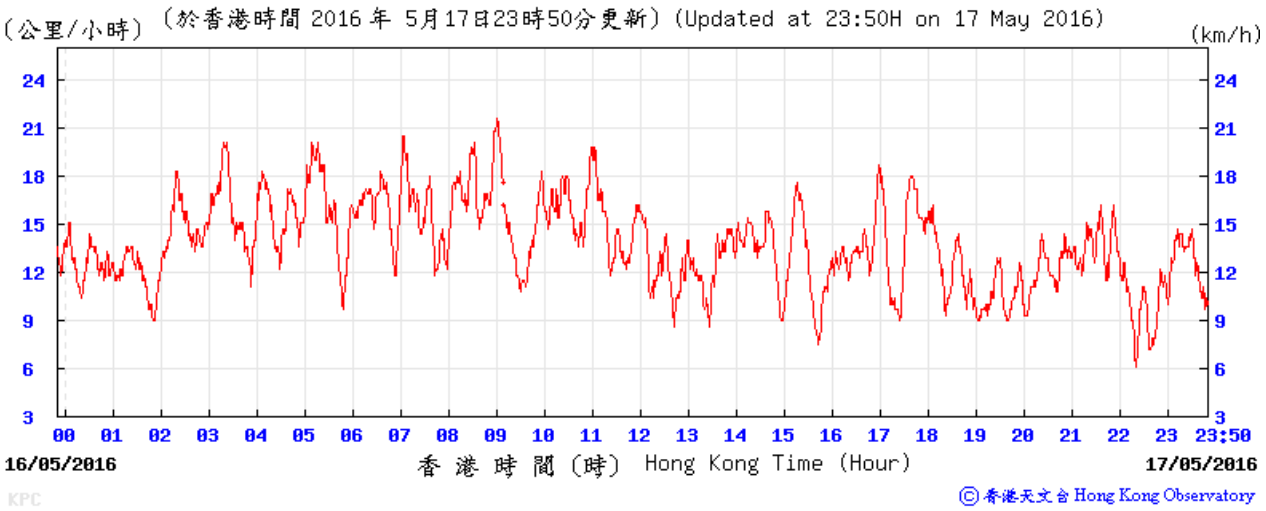
Pressure:



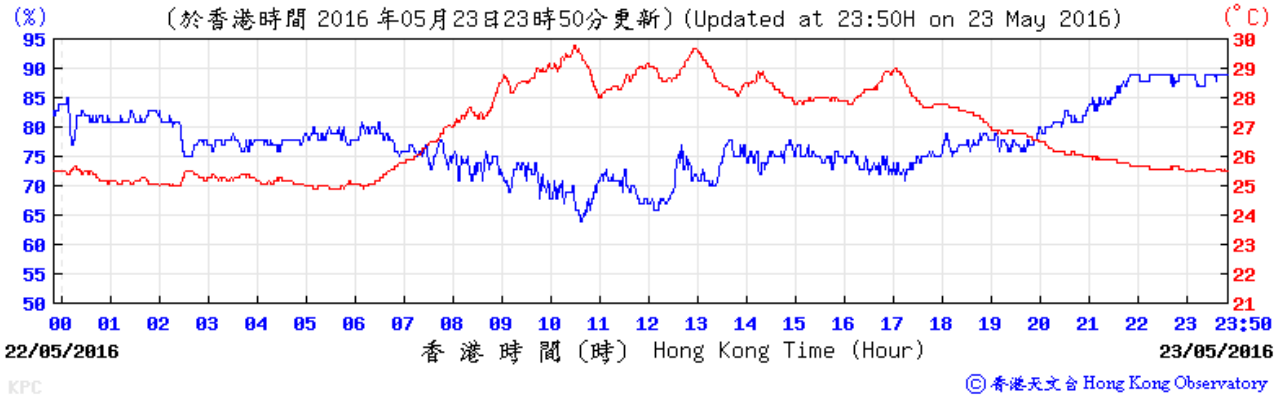
Wind Direction:



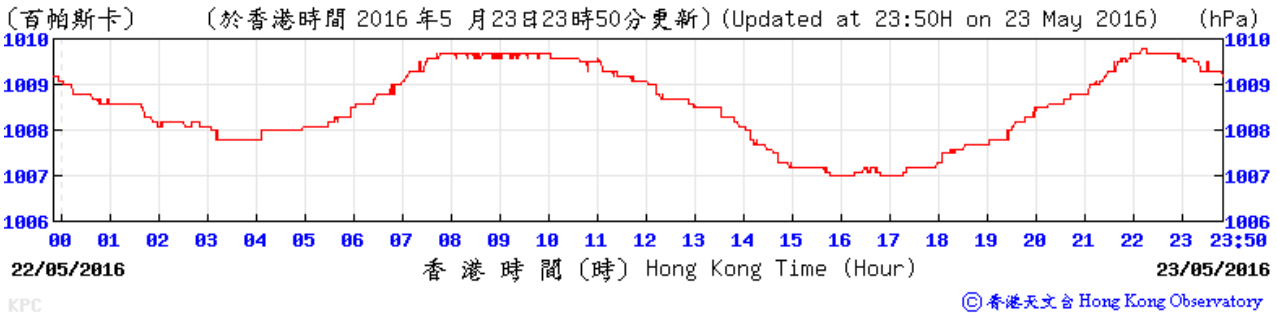
Wind Speed:



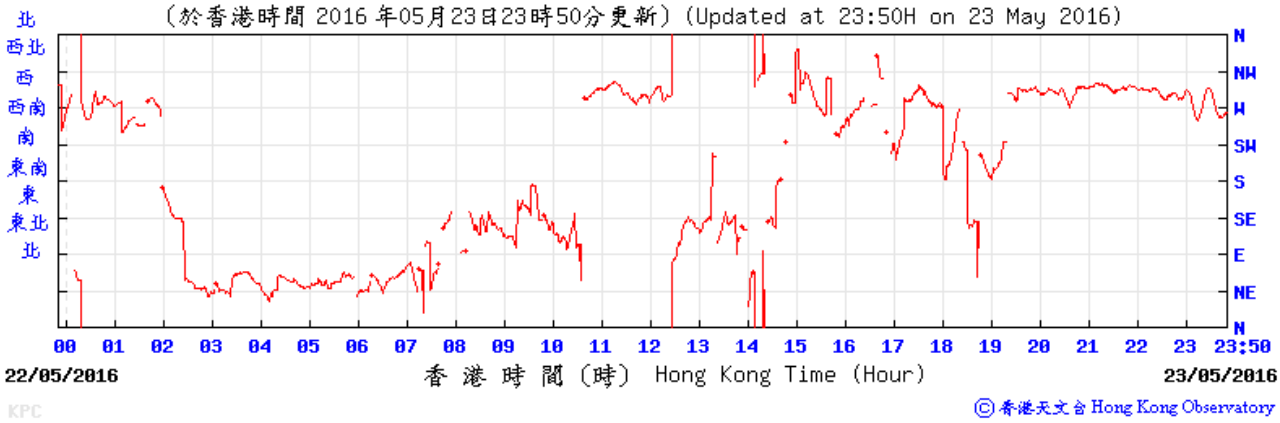
Temperature/Humidity:



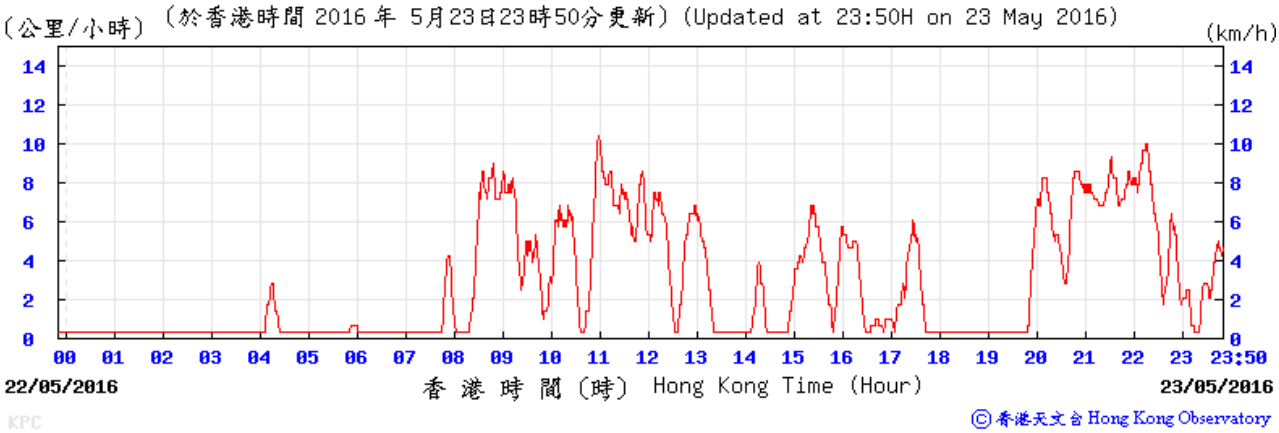
Pressure:



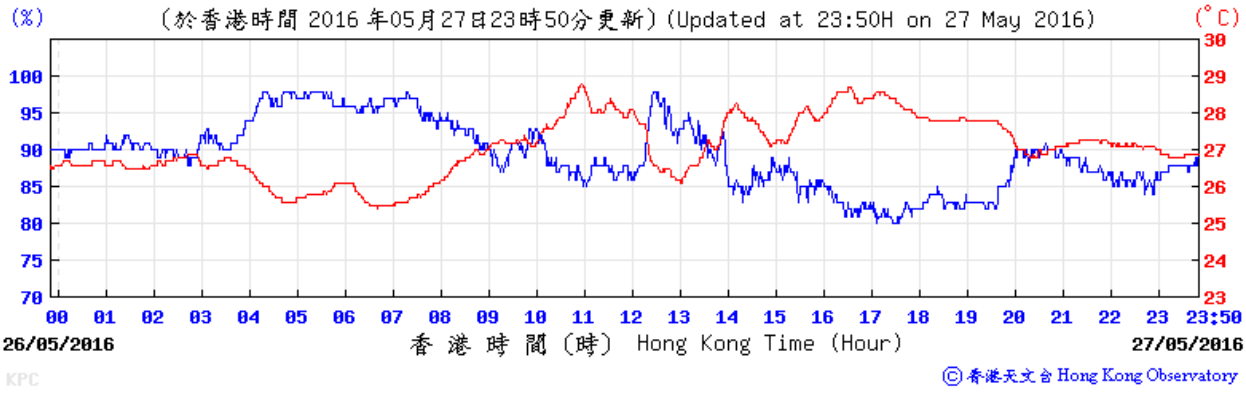
Wind Direction:



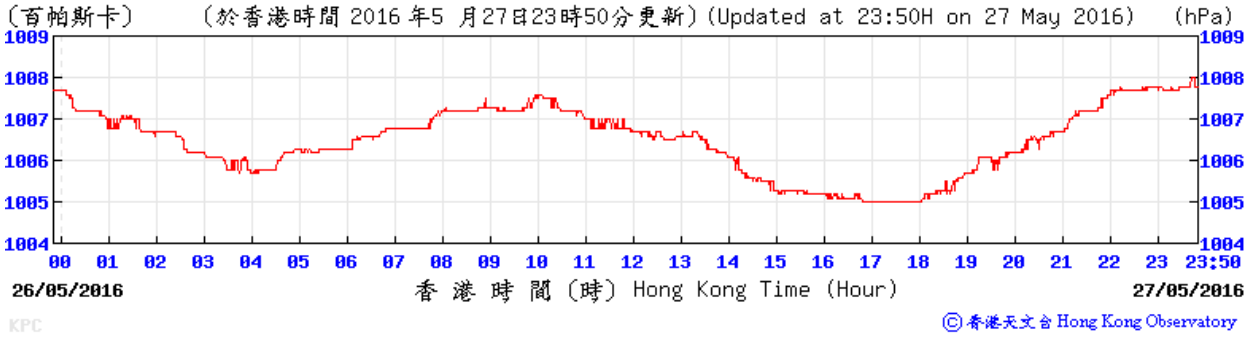
Wind Speed:



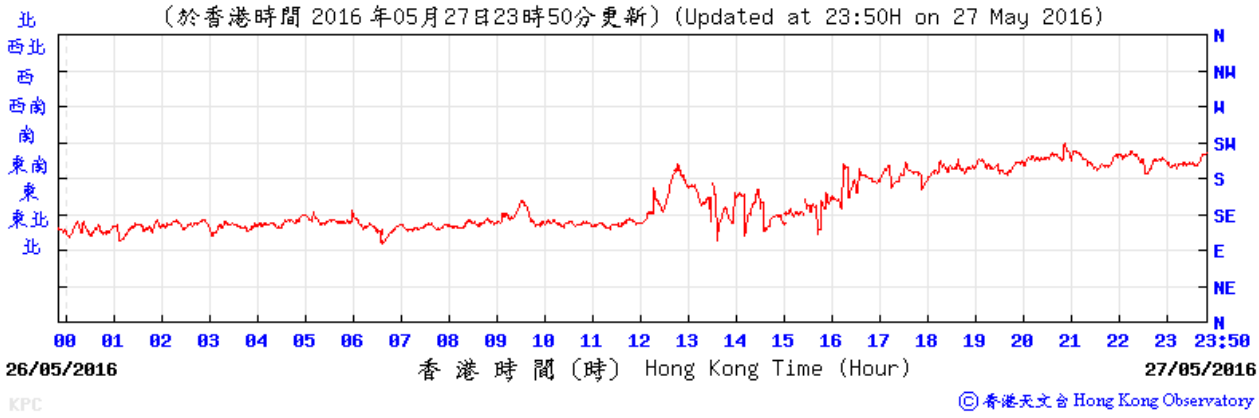
Temperature/Humidity:



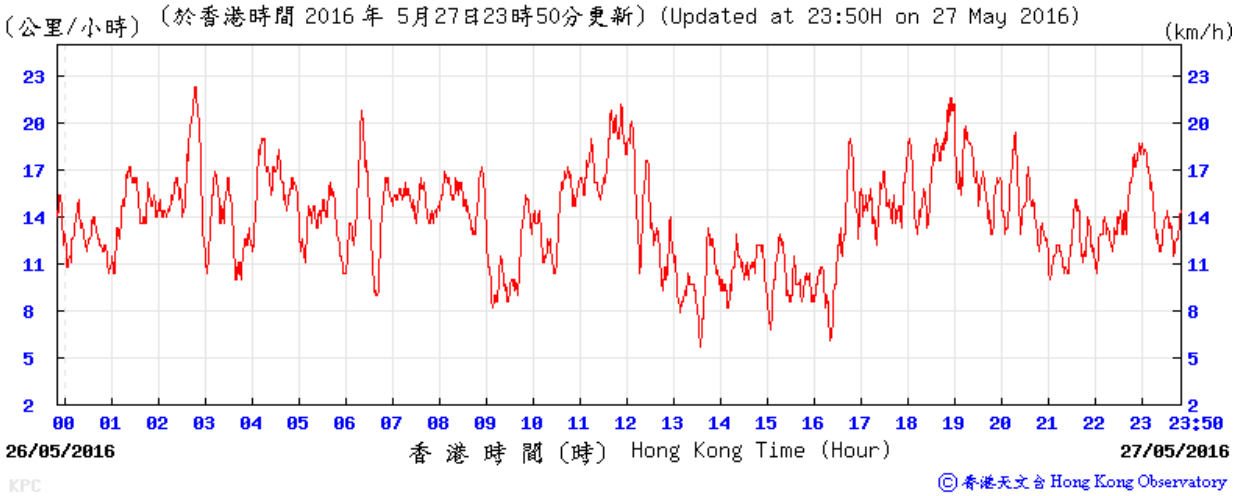
Pressure:



Wind Direction:



Wind Speed:



Appendix I. Waste Flow table

M+ Museum

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facilty	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2015													
Nov	46607.4	0.0	0.0	8240.0	38367.4	0.0	0.0	76.2	0.0	0.0	0.0	0.0	67.6
Dec	29652.9	0.0	0.0	29621.4	31.5	0.0	0.0	26.3	0.0	0.0	0.0	1.0	66.0
Sub-total (2015)	76260.3	0.0	0.0	37861.4	38398.9	0.0	0.0	102.5	0.0	0.0	0.0	1.0	133.6
2016													
Jan	21077.4	0.0	6352.0	14576.0	149.4	0.0	0.0	18.8	0.0	0.0	0.0	0.0	23.2
Feb	7626.2	0.0	3424.0	4048.0	154.2	0.0	0.0	59.8	0.0	0.0	0.0	0.0	20.5
Mar	10442.5	0.0	1600.0	7888.0	954.5	0.0	0.0	29.7	0.0	0.0	0.0	0.0	46.3
Apr	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													
Jul													
Aug													
Sep													
Oct													
Nov													
Dec													
Sub-total (2016)	93642.8	0.0	17840.0	73136.0	2666.8	0.0	0.0	195.6	0.5	0.0	61.4	0.0	186.8
Total	169903.1	0.0	17840.0	110997.4	41065.7	0.0	0.0	298.1	0.5	0.0	61.4	1.0	320.4

Note:
-67.4 ton and 688.1 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.

Lyric Theatre Complex

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facilty	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2016													
Mar	2702.1	0.0	0.0	0.0	2702.1	0.0	0.0	4.5	0.1	0.0	0.0	0.0	30.6
Apr	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	0.0												
Jul	0.0												
Aug	0.0												
Sep	0.0												
Oct	0.0												
Nov	0.0												
Dec	0.0												
Sub-total (2016)	23821.4	0.0	0.0	0.0	23821.4	0.0	0.0	54.4	0.1	0.0	0.0	0.7	110.3
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	23821.4	0.0	0.0	0.0	23821.4	0.0	0.0	54.4	0.1	0.0	0.0	0.7	110.3

Note:
-1098.7 ton and 11389.1 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 respectively in the reporting month.

Appendix J. Environmental Mitigation Measures – Implementation Status

Table J-1: Environmental Mitigation Measures Implementation Status

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
Air Quality Impact (Construction)			
2.1 & 10.3.1	**General Dust Control Measures** Frequent water spraying for active construction areas (12 times a day or once every one hour), including Heavy construction activities such as construction of buildings or roads, drilling, ground excavation, cut and fill operations (i.e., earth moving)	Rem	✓
2.1 & 10.3.1	**Best Practice For Dust Control** The relevant best practices for dust control as stipulated in the Air Pollution Control (construction Dust) Regulation should be adopted to further reduce the construction dust impacts from the Project. These best practices include:		
	Good Site Management		
	▪ Good site management is important to help reducing potential air quality impact down to an acceptable level. As a general guide, the Contractor should maintain high standard of housekeeping to prevent emission of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning.	✓	Rem
	Disturbed Parts of the Roads		
	▪ Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or	✓	✓
	▪ Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet.	✓	✓
	Exposed Earth		
	▪ Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies.	N/A	N/A
	Loading, Unloading or Transfer of Dusty Materials		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.	✓	✓
	Debris Handling		
	▪ Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides.	✓	✓
	▪ Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped.	✓	✓
	Transport of Dusty Materials		
	▪ Vehicle used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards.	✓	✓
	Wheel washing		
	▪ Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.	✓	✓
	Use of vehicles		
	▪ The speed of the trucks within the site should be controlled to about 10km/hour in order to reduce adverse dust impacts and secure the safe movement around the site.	✓	✓
	▪ Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.	✓	✓
	▪ Where a vehicle leaving the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle.	✓	✓
	Site hoarding		
	▪ Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit.	✓	✓
2.1 & 10.3.1	**Best Practicable Means for Cement Works (Concrete Batching Plant)** The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93) should be followed and implemented to further reduce the construction dust impacts of the Project. These best practices include: Exhaust from Dust Arrestment Plant		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ Wherever possible the final discharge point from particulate matter arrestment plant, where is not necessary to achieve dispersion from residual pollutants, should be at low level to minimise the effect on the local community in the case of abnormal emissions and to facilitate maintenance and inspection	✓	✓
	Emission Limits		
	▪ All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist or smoke	✓	✓
	Engineering Design/Technical Requirements		
	▪ As a general guidance, the loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to prevent the release of visible dust and/or other noxious or offensive emissions	✓	✓
-	**Non-Road Mobile Machinery (NRMM):**		
	All NRMMs operating on-site which are subject to emission control of Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation are approved/exempted (as the case may be) and affixed with the requisite approval/exemption labels.	✓	✓
Noise Impact (Construction)			
3.1 & 10.4.1	**Good Site Practice** Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:		
	▪ only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works;	✓	✓
	▪ machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum;	✓	✓
	▪ plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs;	✓	✓
	▪ mobile plant should be sited as far away from NSRs as possible; and	✓	✓
	▪ material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓	✓
3.1 & 10.4.1	**Adoption of Quieter PME** The recommended quieter PME adopted in the assessment were taken from the EPD's QPME Inventory and "*Sound Power Levels of Other Commonly Used PME*" are presented in **Table 4.26** in the EIA report. It	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	should be noted that the silenced PME selected for assessment can be found in Hong Kong.		
3.1 & 10.4.1	**Use of Movable Noise Barriers** Movable noise barriers can be very effective in screening noise from particular items of plant when constructing the Project. Noise barriers located along the active works area close to the noise generating component of a PME could produce at least 10 dB(A) screening for stationary plant and 5 dB(A) for mobile plant provided the direct line of sight between the PME and the NSRs is blocked.	✓	✓
3.1 & 10.4.1	**Use of Noise Enclosure/ Acoustic Shed** The use of noise enclosure or acoustic shed is to cover stationary PME such as air compressor and concrete pump. With the adoption of the noise enclosure, the PME could be completely screened, and noise reduction of 15 dB(A) can be achieved according to the EIAO Guidance Note No.9/2010.	N/A	N/A
3.1 & 10.4.1	**Use of Noise Insulating Fabric** Noise insulating fabric can also be adopted for certain PME (e.g. drill rig, pilling machine etc). The fabric should be lapped such that there are no openings or gaps on the joints. According to the approved Tsim Sha Tsui Station Northern Subway EIA report (AEIAR-127/2008), a noise reduction of 10 dB(A) can be achieved for the PME lapped with the noise insulating fabric.	✓	✓
3.1 & 10.4.1	**Scheduling of Construction Works outside School Examination Periods** During construction phase, the contractor should liaise with the educational institutions (including NSRs LCS and CRGPS) to obtain the examination schedule and avoid the noisy construction activities during school examination periods.	N/A	N/A
Water Quality Impact (Construction)			
4.1 & 10.5.1	**Construction site runoff and drainage** The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts: ▪ 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;	Rem	✓
	▪ 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.	✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	▪ All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Rem/ Obs	✓
	▪ Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities.	✓	✓
	▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Obs	Obs
	▪ 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.	✓	✓
	▪ Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and stormwater runoff being directed into foul sewers.	✓	✓
	▪ Precautions should be taken at any time of the year when rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	✓	✓
	▪ Bentonite slurries used in piling or slurry walling should be reconditioned and reused wherever practicable. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.	N/A	N/A
	Barging facilities and activities		
	Recommendations for good site practices during operation of the proposed barging point include:		
	▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	movement or propeller wash;	N/A	N/A
	▪ Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation;	N/A	N/A
	▪ All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and	N/A	N/A
	▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	N/A	N/A
4.1 & 10.5.1	**Sewage effluent from construction workforce** Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	✓	✓
4.1 & 10.5.1	**General construction activities** ▪ Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used.	✓	✓
	▪ Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.	Obs	Obs/Rem
Waste Management Implications (Construction)			
6.1 & 10.7.1	**Good Site Practices** Recommendations for good site practices during the construction activities include:		
	▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	✓	✓
	▪ Training of site personnel in proper waste management and chemical handling procedures	✓	✓
	▪ Provision of sufficient waste disposal points and regular collection of waste	✓	✓
	▪ Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	✓	✓
	▪ Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	introduction to public roads	Obs	Obs
	▪ Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the inert or non-inert C&D materials is not anticipated	✓	✓
6.1 & 10.7.1	**Waste Reduction Measures**		
	Recommendations to achieve waste reduction include:		
	▪ Sort inert C&D material to recover any recyclable portions such as metals	✓	✓
	▪ Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal	✓	✓
	▪ Encourage collection of recyclable waste such as waste paper and aluminium cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force	✓	✓
	▪ Proper site practices to minimise the potential for damage or contamination of inert C&D materials	✓	✓
	▪ Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	✓	✓
6.1 & 10.7.1	**Inert and Non-inert C&D Materials**		
	In order to minimise impacts resulting from collection and transportation of inert C&D material for off-site disposal, the excavated materials should be reused on-site as fill material as far as practicable. In addition, inert C&D material generated from excavation works could be reused as fill materials in local projects that require public fill for reclamation.	✓	✓
	▪ The surplus inert C&D material will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong.	✓	✓
	▪ Liaison with the CEDD Public Fill Committee (PFC) on the allocation of space for disposal of the inert C&D materials at PFRF is underway. No construction work is allowed to proceed until all issues on management of inert C&D materials have been resolved and all relevant arrangements have been endorsed by the relevant authorities including PFC and EPD.	✓	✓
	▪ The C&D materials generated from general site clearance should be sorted on site to segregate any inert materials for reuse or disposal of at PFRFs whereas the non-inert materials will be disposed of at the designated landfill site.	✓	✓
	▪ In order to monitor the disposal of inert and non-inert C&D materials at respectively PFRFs and the designated landfill site, and to control fly-tipping, it is recommended that the Contractor should follow the Technical Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition	✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	Materials issued by Development Bureau. In addition, it is also recommended that the Contractor should prepare and implement a Waste Management Plan detailing their various waste arising and waste management practices in accordance with the relevant requirements of the Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site.		
6.1 & 10.7.1	**Chemical Waste**		
	▪ If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the "Code of Practice on the Packaging Labelling and Storage of Chemical Wastes". Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Obs	Obs/Rem
	▪ 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.	✓	✓
6.1 & 10.7.1	**General Refuse**		
	General refuse should be stored in enclosed bins or compaction units separated from inert C&D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	✓	✓
Land Contamination (Construction)			
7.1 & 10.8.1	The potential for land contamination issues at the TST Fire Station due to its future relocation will be confirmed by site investigation after land acquisition. Where necessary, mitigation measures for minimising potential exposure to contaminated materials (if any) or remediation measures will be identified. If contaminated land is identified (e.g., during decommissioning of fuel oil storage tanks) after the commencement of works, mitigation measures are proposed in order to minimise the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially contaminated materials.		
	The following measures are proposed for excavation and transportation of contaminated material:		
	▪ To minimize the chance for construction workers to come into contact with any contaminated materials,		

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	bulk earth-moving excavation equipment should be employed;	N/A	N/A
	▪ Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when interacting directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site;	N/A	N/A
	▪ Stockpiling of contaminated excavated materials on site should be avoided as far as possible;	N/A	N/A
	▪ The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out;	N/A	N/A
	▪ Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater;	N/A	N/A
	▪ Truck bodies and tailgates should be sealed to stop any discharge;	N/A	N/A
	▪ Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping;	N/A	N/A
	▪ Speed control for trucks carrying contaminated materials should be exercised;	N/A	N/A
	▪ Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and	N/A	N/A
	▪ Maintain records of waste generation and disposal quantities and disposal arrangements.	N/A	N/A
Ecological Impact (Construction)			
	No mitigation measure is required.		
Landscape and Visual Impact (Construction)			
Table 9.1 & 10.8 (CM1)	Trees should be retained in situ on site as far as possible. Should tree removal be unavoidable due to construction impacts, trees will be transplanted or felled with reference to the stated criteria in the Tree Removal Applications to be submitted to relevant government departments for approval in accordance to ETWB TCW No. 29/2004 and 3/2006.	N/A	N/A
Table 9.1 & 10.8 (CM2)	Compensatory tree planting shall be incorporated to the proposed project and maximize the new tree, shrubs and other vegetation planting to compensate tree felled and vegetation removed. Also, implementation of compensatory planting should be of a ratio not less than 1:1 in terms of quality and quantity within the site.	N/A	N/A
Table 9.1 & 10.8 (CM3)	Buffer trees for screening purposes to soften the hard architectural and engineering structures and facilities.	N/A	N/A
Table 9.1 &	Softscape treatments such as vertical green wall panel /planting of climbing and/or weeping plants, etc, to	N/A	N/A

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

N/A - Not Applicable
✓ - Implemented
Obs - Observed
Rem - Reminder

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

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

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

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

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

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