



# **Development at West Kowloon Cultural District**

Monthly Environmental Monitoring and Audit  
(EM&A) Report for February 2017

March 2017



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

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

# **Development at West Kowloon Cultural District**

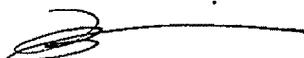
Monthly Environmental Monitoring and Audit  
(EM&A) Report for February 2017

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

**Certified by:**



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

Date

13.3.2017

**Verified by:**



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

Date

13 Mar 2017

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# Executive Summary

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

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

This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 February to 28 February 2017.

## **Exceedance of Action and Limit Levels**

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

## **Implementation of Mitigation Measures**

Construction phase weekly site inspections were carried out on 2, 9, 16 and 23 February 2017 for M+ Museum and 1, 8, 17 and 22 February 2017 for Lyric Theatre Complex to confirm the implementation measures undertaken by the Contractors in the reporting month. The outcomes are presented in Section 4 and the status of implementation of mitigation measures in the site is shown in **Appendix J**.

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

EPD site inspection with Contractor was conducted on 28 February 2017 at Lyric Theatre Complex. No adverse comments received.

## **Record of Complaints**

No environmental complaint was recorded in the reporting month.

## **Record of Notification of Summons and Successful Prosecutions**

Regarding the notification of summons received by the contractor of M+ Museum, Hsin Chong Construction Company Limited, in December 2016, the prosecution case for the muddy water discharge on 2 July 2016 was found not guilty after the trial hearing on 8 February 2017.

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:

- Construction of G/F, LGF, B1 and B2 slab
- Construction of column from B2 to B1, B1 to LGF and LGF to GF
- Installation of megastruss
- Construction of DCS structure from B1 to LGF
- Pile cap and sump pit construction at B2 and ICP
- Construction of B1 slab and beam at ICP
- Sheet Pile Installation for seawater outfall pipe between Ch0+66 to Ch0+108
- Storm Drainage at Portion M45

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

- Pipe Pile Construction
- Socket-H Pile Construction
- Bored Pile Construction
- Sheet Pile Construction

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

# 1 Introduction

## 1.1 Background

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

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

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

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

The Monthly EM&A Report is prepared in accordance with the Condition 3.4 of the Environmental Permit No. EP-453/2013/B. This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 February to 28 February 2017. The purpose of this report is to summarise the findings in the EM&A of the project over the reporting period.

## 1.2 Project Organisation

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

## 1.3 Environmental Status in the Reporting Period

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

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

- Construction of column from B2 to B1, B1 to LGF and LGF to GF
- Pile cap and sump pit construction at B2 and ICP
- Installation of megastruss
- Construction of B1 Beam and slab at ICP
- Sheet Pile Installation for seawater outfall pipe between Ch0+66 to Ch0+108
- Storm Drainage at Portion M45

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

- Installation of Monitoring Instrumentation
- Pre-grouting adjacent to Seawall
- Pipe Pile Construction
- Socket-H Pile Construction
- Bored Pile Construction
- Sheet Pile Construction

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

## 1.4 Summary of EM&A Requirements

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

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

**Table 1.1: Summary of Impact EM&A Requirements**

Parameters	Descriptions	Locations	Frequencies
Air Quality	24-Hour TSP	AM1 - International Commerce Centre	At least once every 6 days
	1-Hour TSP	AM1 - International Commerce Centre	At least 3 times every 6 days
	24-Hour TSP	AM2A – Austin Road West opposite to The Harbourside Tower 1	At least once every 6 days
	1-Hour TSP	AM2A – Austin Road West opposite to The Harbourside Tower 1	At least 3 times every 6 days
Noise	Leq, 30 minutes	NM1A- Podium level of The Harbourside Tower 1	Weekly
Landscape & Visual	Monitor implementation of proposed mitigation measures during the construction stage	As described in Table 9.1 and 9.2 of the EM&A Manual	Bi-weekly

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

The Harbourside management office formally rejected our proposal of setting up air quality and noise monitoring equipment on its premises at the podium level of Tower 1 (AM2/NM1) on 10 November 2015. Alternative noise monitoring location was identified at The Arch (NM2), however The Arch management office formally rejected our proposal of setting up noise monitoring equipment on its premises on 23 November 2015. Nevertheless, suitable air quality monitoring location at AM2 was identified on the ground floor in front of The Harbourside Tower 1, which is at the same location as

that of baseline monitoring for consistency. No management approval is required at the ground floor for conducting the air monitoring. However, the electricity supply at AM2 was suspended from 31 August 2016 and was no longer available. In order to have a more secure electricity supply, an alternative air monitoring location (AM2A) was identified at Austin Road West opposite to The Harbourside Tower 1, which is close to Lyric Theatre Complex site entrance. This alternative air monitoring location was approved by EPD on 28 September 2016. Noise monitoring at G/F of Harbourside will not be representative. Approval from the management office of the International Commerce Centre has been granted on 29 February 2016 for conducting noise monitoring at the alternative noise monitoring location identified at the podium floor (NM1A) which is free from screening to the construction activities. Therefore, 2 air quality monitoring stations and 1 noise impact monitoring station were confirmed for the impact monitoring.

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

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

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

## 2 Impact Monitoring Methodology

### 2.1 Introduction

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

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

### 2.2 Air Quality

#### 2.2.1 Monitoring Parameters, Frequency and Duration

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

**Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration**

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

#### 2.2.2 Monitoring Locations

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

**Table 2.2: Air Quality Monitoring Station**

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

#### 2.2.3 Monitoring Equipment

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

**Table 2.3: TSP Monitoring Equipment**

Equipment	Model
<b>24-hour TSP monitoring</b>	
High Volume Sampler	TE-5170 (Serial No.: 0767 and 8919)
Calibrator	TE-5025A (Orifice I.D.: 2454)
<b>1-hour TSP monitoring</b>	
Portable direct reading dust meter	Sibata LD-5R (Serial No.: 276020 and 2Z6240)

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

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

## 2.2.4 Monitoring Methodology

### 24-hour TSP Monitoring

#### **Installation**

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

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

#### **Preparation of Filter Papers**

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

#### **Field Monitoring Procedures**

- The power supply was checked to ensure the HVS works properly.
- The filter holder and the area surrounding the filter were cleaned.
- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- The shelter lid was closed and was secured with the aluminium strip.
- The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flow rate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.3 m<sup>3</sup>/min. The range specified in the EM&A Manual was between 0.6-1.7 m<sup>3</sup>/min.

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

### Maintenance and Calibration

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

### 1-hour TSP Monitoring

#### Field Monitoring

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

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

### Maintenance and Calibration

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

### Weather Condition

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

## 2.3 Noise

### 2.3.1 Monitoring Parameters, Frequency and Duration

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

**Table 2.4: Noise Monitoring Parameters, Period and Frequency**

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

### 2.3.2 Monitoring Location

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

**Table 2.5: Noise Monitoring Station**

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

### 2.3.3 Monitoring Equipment

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

**Table 2.6: Noise Monitoring Equipments**

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

### 2.3.4 Monitoring Methodology

#### Field Monitoring

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

#### Maintenance and Calibration

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

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

### Weather Condition

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

## 2.4 Landscape and Visual

### 2.4.1 Monitoring Program

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

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

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

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

## 3 Monitoring Results

### 3.1 Impact Monitoring

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

### 3.2 Air Quality Monitoring

#### 3.2.1 1-hour TSP

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

**Table 3.1: Summary of 1-hour TSP monitoring results**

Monitoring Station	Monitoring Date	Start Time	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )			Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
			1st Result	2nd Result	3rd Result			
AM1	1-Feb-17	10:50	45	52	56	45-100	273.7	500
	6-Feb-17	10:42	84	91	97			
	10-Feb-17	8:02	54	51	60			
	16-Feb-17	10:48	64	70	79			
	22-Feb-17	10:47	100	82	76			
	28-Feb-17	10:40	63	69	77			
AM2A	1-Feb-17	11:02	75	59	62	59-133	274.2	500
	6-Feb-17	10:55	85	93	99			
	10-Feb-17	8:14	59	61	65			
	16-Feb-17	11:02	86	90	76			
	22-Feb-17	11:00	112	119	133			
	28-Feb-17	10:54	82	71	89			

#### 3.2.2 24-hour TSP

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

**Table 3.2: Summary of 24-hour TSP monitoring results**

Monitoring Station	Monitoring Date	Start Time	Monitoring Results ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
AM1	1-Feb-17	10:52	37	37-50	143.6	260
	6-Feb-17	10:40	45			
	10-Feb-17	8:00	44			
	16-Feb-17	10:50	46			
	22-Feb-16	10:45	50			
	28-Feb-17	10:42	47			
AM2A	1-Feb-17	11:04	62	59-80	151.1	260
	6-Feb-17	10:52	59			
	10-Feb-17	8:12	80			

Monitoring Station	Monitoring Date	Start Time	Monitoring Results ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
	16-Feb-17	11:00	63			
	22-Feb-17	10:57	72			
	28-Feb-17	10:52	61			

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

### 3.3 Noise Monitoring

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

**Table 3.3: Summary of noise monitoring results during normal weekdays**

Monitoring Date	Start Time	End Time	Leq (30 mins), dB(A)	Limit Level for Leq (dB(A))
1-Feb-17	14:00	14:30	68	
6-Feb-17	14:00	14:30	69	
16-Feb-17	14:00	14:30	69	75
22-Feb-17	14:00	14:30	69	
28-Feb-17	14:00	14:30	69	

Remarks:

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

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

### 3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 2 and 16 February 2017 for M+ Museum and 1 and 17 February 2017 for Lyric Theatre Complex during the reporting month. As reviewed by the registered Landscape Architect, no adverse comment on landscape and visual aspects was made during these inspections.

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

## 4 Environmental Site Inspection

### 4.1 Site Inspection

#### 4.1.1 M+ Museum

Construction phase weekly site inspections were carried out on 2, 9, 16 and 23 February 2017. The joint site inspection with IEC, ET, ER and Contractor was held on 9 February 2017. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.1**.

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

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
26 Jan 2017	Waste management	Chemical container was found without drip tray near Gate 3. The contractor was reminded to provide drip tray for all chemicals.	The contractor has removed the chemical container previously observed without drip tray.	1 Feb 2017
26 Jan 2017	Air quality	Cement bag was found left open at B2. The contractor was reminded to cover the cement bag with impervious sheet to reduce dust impact.	The contractor has removed the uncovered cement bag previously found at B2.	1 Feb 2017
2 Feb 2017	Waste management	Construction waste was found accumulated in the site. The contractor was reminded to remove the construction waste regularly.	The contractor has removed the construction waste previously observed.	8 Feb 2017
2 Feb 2017	Air quality	Haul road was observed dry and dusty. The contractor was reminded to enhance water spraying to reduce dust impact.	The contractor has enhanced water spraying in site.	8 Feb 2017
2 Feb 2017	Waste management	Chemical waste was found in the drip tray of the generator near Gate 1. The contractor was reminded to clean up the drip tray more frequently.	The contractor has cleaned up the drip tray of the generator near Gate 1.	8 Feb 2017
2 Feb 2017	Waste management	Chemical containers and drums at NK11 were found without drip trays. The contractor was reminded to provide sufficient drip trays for the chemicals.	The contractor has removed the chemical containers and drums previously observed without drip tray.	8 Feb 2017
2 Feb 2017	Water quality	Algae was found accumulated in wetsep no.1. The contractor was reminded to clean up the wetsep and also check the chemical dosage to ensure the performance of the wetsep.	The contractor has cleaned up the wetsep to remove algae and checked the chemical dosage to ensure the performance of the wetsep no.1.	8 Feb 2017
2 Feb 2017	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. They were all visually clear when comparing with standard solution and within proper pH range.	N/A	N/A
9 Feb 2017	Waste management	Mixture of waste was found in the drip tray of generator near Gate 1. The contractor was reminded to clean up the drip tray regularly.	The contractor has arranged clean-up of the drip tray.	15 Feb 2017

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
9 Feb 2017	Waste management	Chemicals were found without drip trays in different areas of the site. The contractor was reminded to ensure sufficient drip trays are provided for the chemicals.	The contractor has removed the chemicals previously observed without drip trays.	13 Feb 2017
9 Feb 2017	Air quality	Overloaded truck was observed leaving the site. The contractor was reminded to ensure the truck are properly loaded and well covered.	The truck was observed properly loaded and covered.	16 Feb 2017
9 Feb 2017	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. They were all visually clear when comparing with standard solution and within proper pH range.	N/A	N/A
16 Feb 2017	Air quality	Stockpile was found uncovered. The contractor was reminded to cover the stockpile with impervious sheet to reduce dust impact.	The contractor has removed the stockpile that previously uncovered.	23 Feb 2017
16 Feb 2017	Waste management	Chemicals were found without drip trays. The contractor was reminded to provide drip trays for the chemicals.	The contractor has removed the chemicals that previously observed without drip trays.	23 Feb 2017
16 Feb 2017	Waste management	Construction waste was observed uncovered and accumulated in B2. The contractor was reminded to either remove it or well cover it.	The contractor has well covered the construction waste.	23 Feb 2017
16 Feb 2017	Waste management	Oil stain was found next to the generator and mixture of chemical waste was observed in drip trays. The contractor was reminded to rectify it and treat it as chemical waste.	The contractor has cleaned the drip tray and oil stain.	23 Feb 2017
16 Feb 2017	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. They were all visually clear and within proper pH range.	N/A	N/A
23 Feb 2017	Water quality	The contractor was reminded to provide sufficient pumps at B2 to remove the stagnant water.	Follow-up status will be provided in the next reporting month	On-going
23 Feb 2017	Waste management	The drip tray of the generator near Gate 1 was observed without plug and mixture of chemical waste. The contractor was reminded to provide plug and clean up the drip tray more frequently.	Follow-up status will be provided in the next reporting month	On-going
23 Feb 2017	Waste management	Chemicals without drip tray were found at ground level and gridline 4G. The contractor was reminded to provide sufficient drip trays for the chemicals.	Follow-up status will be provided in the next reporting month	On-going
23 Feb 2017	Waste management	Oil stain was found near gridline 4G. The contractor was reminded to rectify it as chemical waste.	Follow-up status will be provided in the next reporting month	On-going
23 Feb 2017	Water quality	Effluent quality at ICP sampling point and M+ wetseps was checked. They were all visually clear when comparing with standard solution and within proper pH range. Algae was found in wetsep no.1. The contractor was reminded to remove the algae more	Follow-up status will be provided in the next reporting month	On-going

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
		frequently.		

#### 4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 1, 8, 17 and 22 February 2017. The joint site inspection with IEC, ET, ER and Contractor was held on 17 February 2017. EPD site inspection was conducted on 28 February 2017. Chemical waste store and wastewater treatment facilities were inspected and photos at sea-front area were taken. No adverse comments received. 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)
1 Feb 2017	Air quality	The ground was observed dry and dusty. The contractor was reminded to enhance water spraying to reduce dust impact.	Water spraying on main site haul road was conducted regularly.	3 Feb 2017
1 Feb 2017	Waste management	Chemical containers were found without drip trays. The contractor was reminded to provide drip trays for all chemicals.	The contractor has removed the chemicals and placed in drip tray.	3 Feb 2017
1 Feb 2017	Waste management	Construction waste was found accumulated. The contractor was reminded to remove the construction waste regularly.	General refuse was cleared off site.	3 Feb 2017
8 Feb 2017	Waste management	The drip trays of air-compressor and welding machine at Area L06 was observed full of mud and water. The contractor was reminded to remove the mud and water and treated as chemical waste.	Mud was cleared from the drip tray of construction plant at Area L06.	13 Feb 2017
17 Feb 2017	Water quality	While no discharge was observed from Wetsep No. 2, the pH meter reading appeared to be abnormal. The Contractor should ensure that wastewater is properly treated by the Wetsep prior to discharge from the site.	Wastewater was filled into the Wetsep and value of pH sensor resumed to normal range.	22 Feb 2017
17 Feb 2017	Waste management	Drip tray for a site plant was filled with stagnant water. The Contractor should clear the stagnant water to prevent overspill.	The stagnant water inside drip tray was cleared.	22 Feb 2017
17 Feb 2017	Noise	The engine door of a powerpack was not closed. The Contractor should ensure that it is properly closed at all times while in operation.	The panel of powerpack was properly closed.	22 Feb 2017
22 Feb 2017	Water quality	Turbid wastewater was observed at the Wetsep No.2. The Contractor was reminded to ensure the discharge wastewater has good standard.	Wetsep No. 2 was maintained and de-sludged.	25 Feb 2017
22 Feb 2017	Waste management	A hole was observed at the drip tray of generator. The Contractor was reminded to prevent leakage of stagnant water from drip tray.	Drip tray of generator was plugged to prevent leakage of stagnant water.	25 Feb 2017

## 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, 15.52 ton and 110.12 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 81.4 ton of general refuse was disposed of at SENT landfill. 70.5 ton of metals, 0.6 ton of paper/cardboard packaging, 0 ton of plastic and 84.0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 768.0 ton of inert C&D materials were reused in other projects and 34.0 ton of inert C&D materials were disposed to sorting facility. 0 ton of chemical waste was collected by licensed contractors in the reporting period.

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

### 4.2.2 Lyric Theatre Complex

As advised by the Contractor, 1,142.06 ton and 7,966.1 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 9.8 ton of general refuse was disposed of at SENT landfill. 50.2 ton of metals, 0.2 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		
<b>Chemical Waste Producer Registration</b>				
5213-217-H2913-45	05-Nov-15	--	Valid	--
<b>Billing Account Construction Waste Disposal</b>				
7023393	13-Oct-15	--	Account Active	--
<b>Construction Noise Permit</b>				
GW-RE1058-16	4-Nov-16	3-May-17	Valid	--
<b>Wastewater Discharge License</b>				
WT00023633-2016	4-Mar-16	31-Mar-21	Valid	--
<b>Notification under Air Pollution Control (Construction Dust) Regulation</b>				
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		
<b>Chemical Waste Producer Registration</b>				
5213-217-G2347-39	17-Feb-16	--	Valid	--
<b>Billing Account Construction Waste Disposal</b>				
7024189	25-Jan-16	--	Account Active	--
<b>Construction Noise Permit</b>				
GW-RE1113-16	23-Nov-16	20-May-17	Valid	
<b>Wastewater Discharge License</b>				
WT00023648-2016	9-Mar-16	31-Mar-21	Valid	--
<b>Notification under Air Pollution Control (Construction Dust) Regulation</b>				
398075	18-Jan-16	--	Notified	--

## 4.4 Recommended Mitigation Measures

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

### 4.4.1 M+ Museum

#### Chemical and Waste Management

- All chemical drum/ containers stored on site should be provided with drip trays.
- Construction waste generated on site should be regularly removed.
- Maintain good condition of drip tray, such as plugs should be provided or ensure no leaks of drip trays to avoid leakage of chemical waste.
- Any oil leakage or stain should be properly rectified and treat it as chemical waste.

#### Air Quality

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

#### Water Quality

- Wetsep units should be regularly checked and maintained to ensure proper function of the system to treat wastewater or runoff before discharge.
- Sufficient pumps should be provided to avoid stagnant water, especially in rainy season.

#### 4.4.2 Lyric Theatre Complex

##### Chemical and Waste Management

- All chemical drum/ containers stored on site should be provided with drip trays.
- Drip trays should be regularly cleaned up to avoid accumulation of chemical waste.
- Maintain good condition of drip tray, such as plugs should be provided or ensure no leaks of drip trays to avoid leakage of chemical waste.
- Construction waste generated on site should be regularly removed.

##### Air Quality

- Enhance water spraying for haul roads to reduce dust impact.

##### Water Quality

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

##### Noise

- The engine door of the powerpack of the plants should be closed to reduce noise.

## 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 January 2017	14 February 2017

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

### 6.1 Record on Non-compliance of Action and Limit Levels

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

### 6.2 Record on Environmental Complaints Received

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

### 6.3 Record on Notifications of Summons and Successful Prosecution

Regarding the notification of summons received by the contractor of M+ Museum, Hsin Chong Construction Company Limited, in December 2016, the prosecution case for the muddy water discharge on 2 July 2016 was found not guilty after the trial hearing on 8 February 2017.

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:

- Construction of G/F, LGF, B1 and B2 slab
- Construction of column from B2 to B1, B1 to LGF and LGF to GF
- Installation of megastruss
- Construction of DCS structure from B1 to LGF
- Pile cap and sump pit construction at B2 and ICP
- Construction of B1 slab and beam at ICP
- Sheet Pile Installation for seawater outfall pipe between Ch0+66 to Ch0+108
- Storm Drainage at Portion M45

#### 7.1.2 Lyric Theatre Complex

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

- Pipe Pile Construction
- Socket-H Pile Construction
- Bored Pile Construction
- Sheet Pile Construction

### 7.2 Key Issues for the Coming Month

#### 7.2.1 M+ Museum

Key issues to be considered in the coming month include:

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

#### 7.2.2 Lyric Theatre Complex

Key issues to be considered in the coming month include:

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

### 7.3 Monitoring Schedule for the Coming Month

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

## 8 Conclusions and Recommendations

### 8.1 Conclusions

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

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

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.

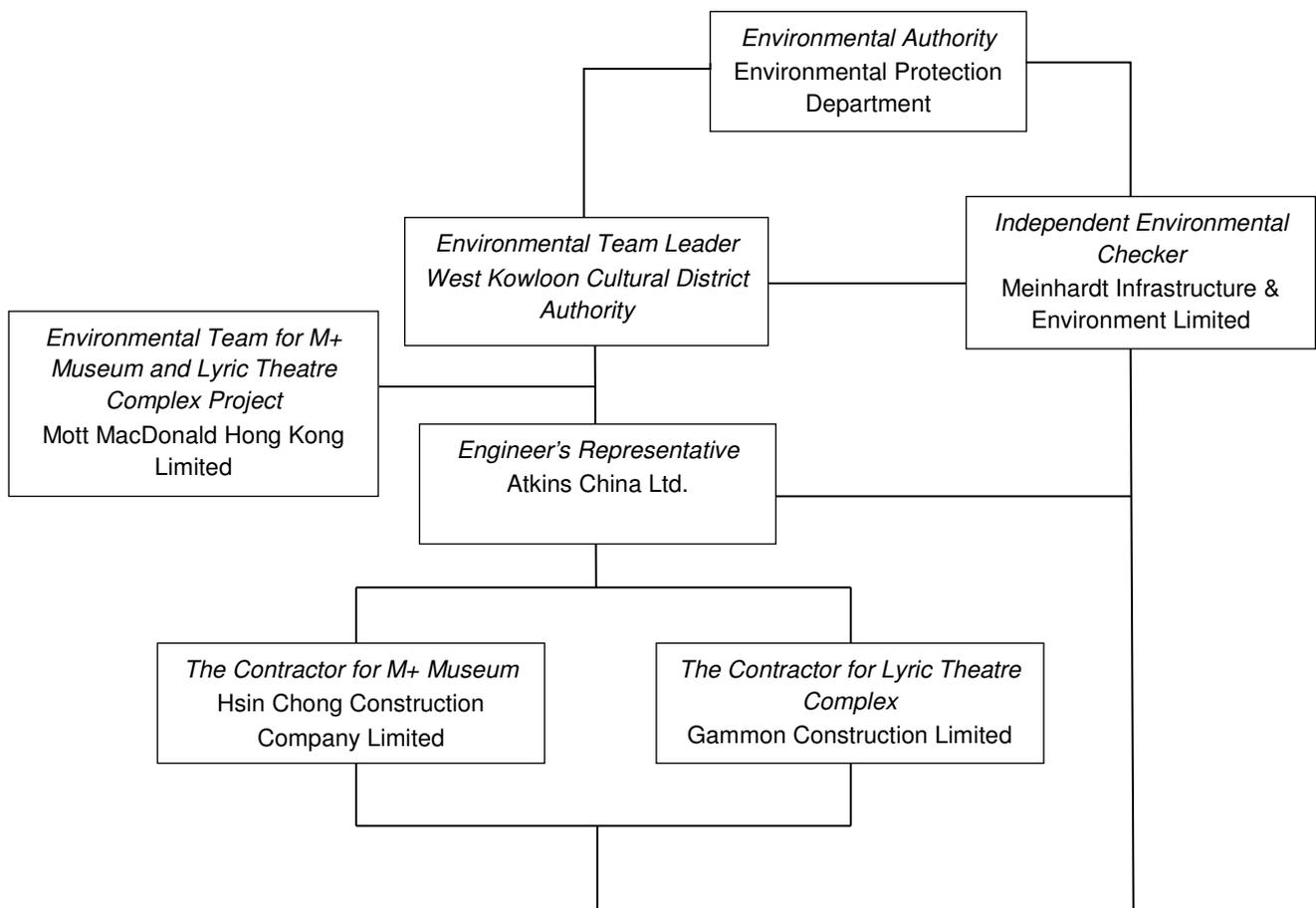
# Figure 1 Site Layout Plan and Monitoring Stations



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# A. Project Organisation



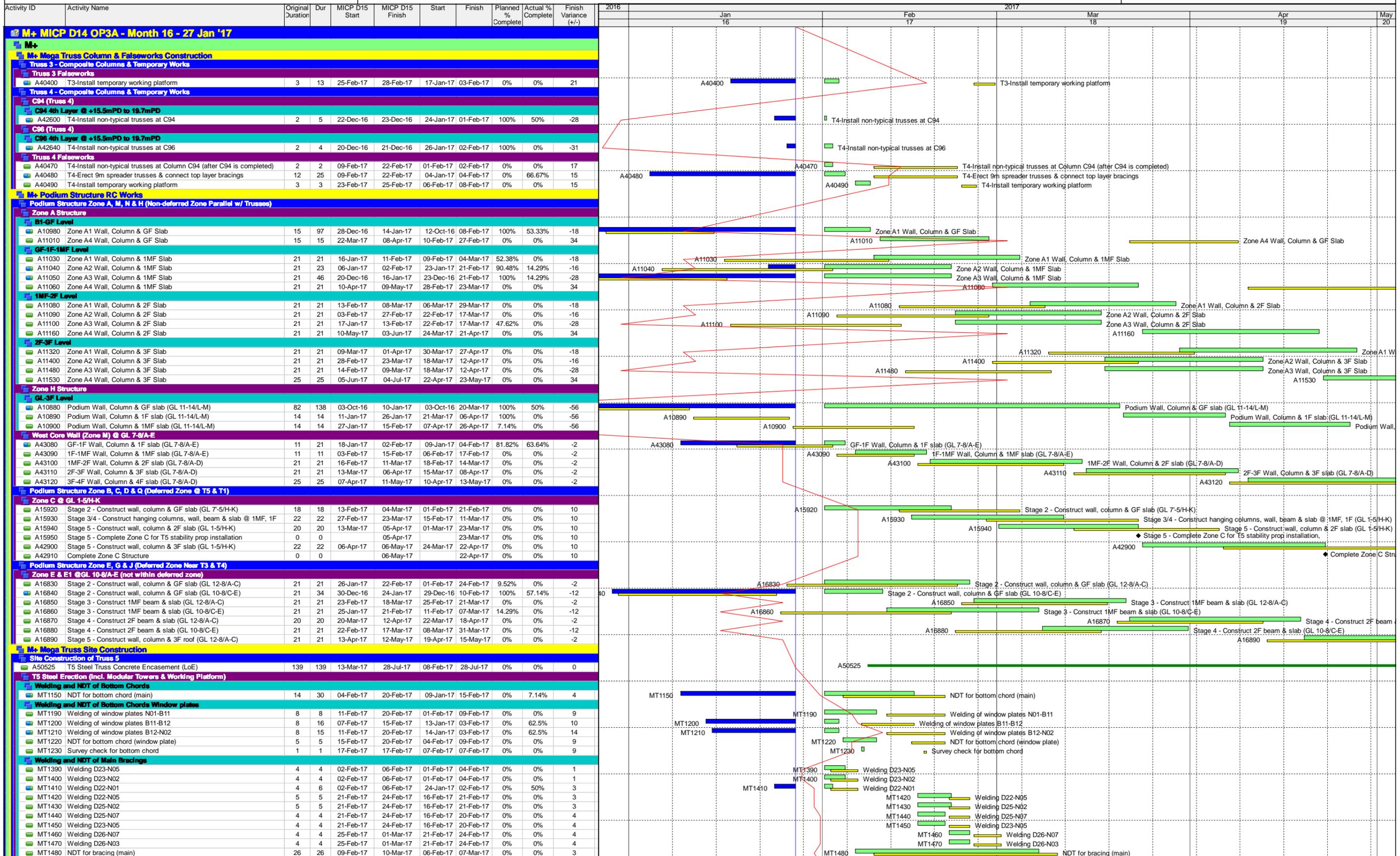
**Table A-1: Contact information**

Company Name	Role	Name	Telephone
Atkins China Ltd.	Resident Engineer	Mr. Benny Ip	9379 5614
Meinhardt Infrastructure & Environment Limited	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739
Hsin Chong Construction Company Limited	Environmental Manager	Mr. Leo Chow	9266 6855
Gammon Construction Limited	Environmental Manager	Ms. Michelle Tang	9267 8866
Mott MacDonald Hong Kong Ltd.	Contractor's Environmental Team Leader	Mr Brandon Wong	2828 5875
West Kowloon Cultural District Authority	Senior Environmental Specialist	Mr. Brian Tam	2200 0059

## B. Tentative Construction Programme

**M+ Museum**

# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)



West Kowloon Cultural District Authority  
 Three Months Rolling Programme (3MRP) - MTH16

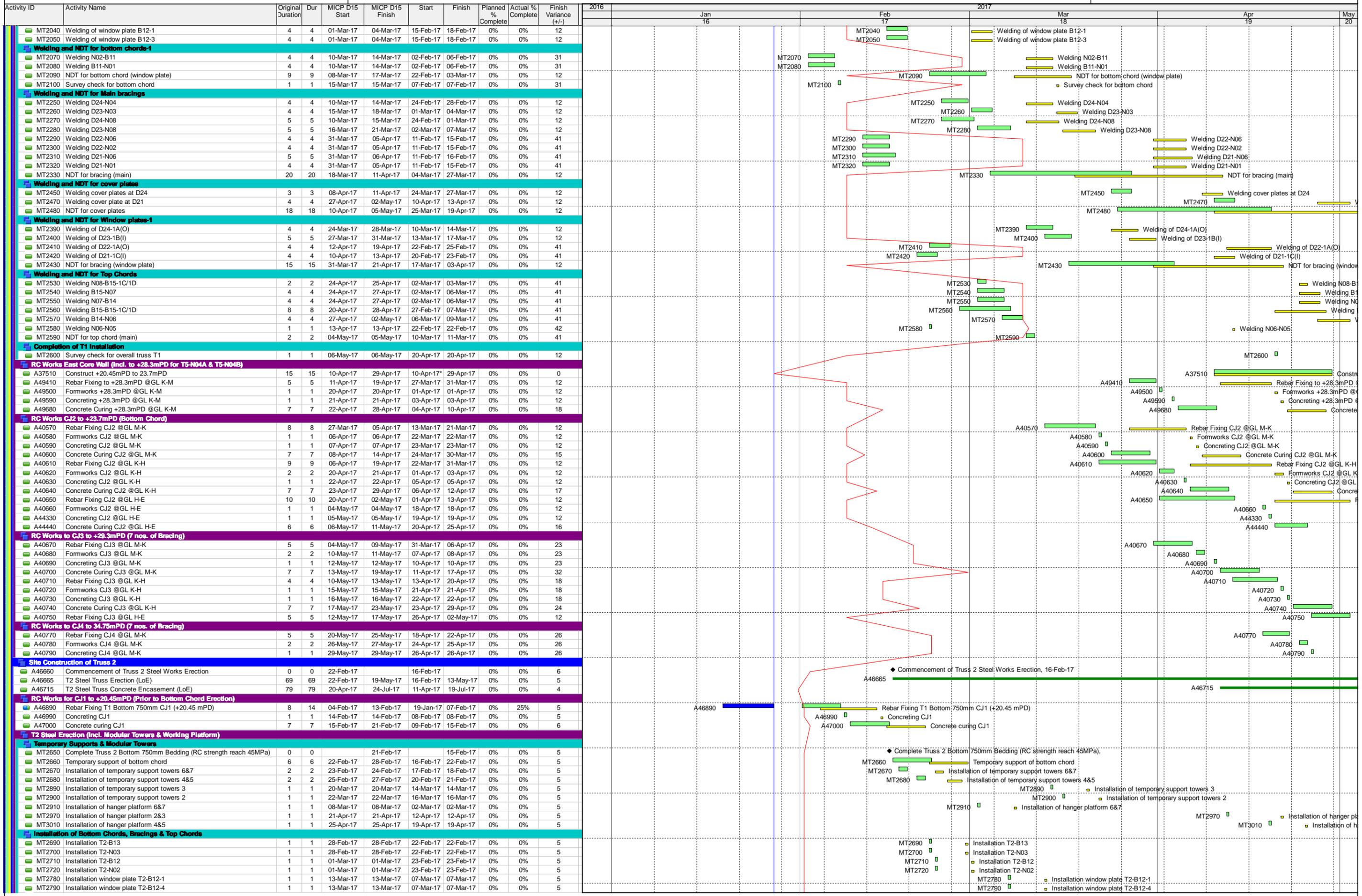


Date	Revision	Checked	Approved
30-Dec-16	3MRP_30 Dec 16	Chris Silcock	Ricky Lau / Chris Chau
27-Jan-17	3MRP_27 Jan 17	Chris Silcock	Ricky Lau / Chris Chau

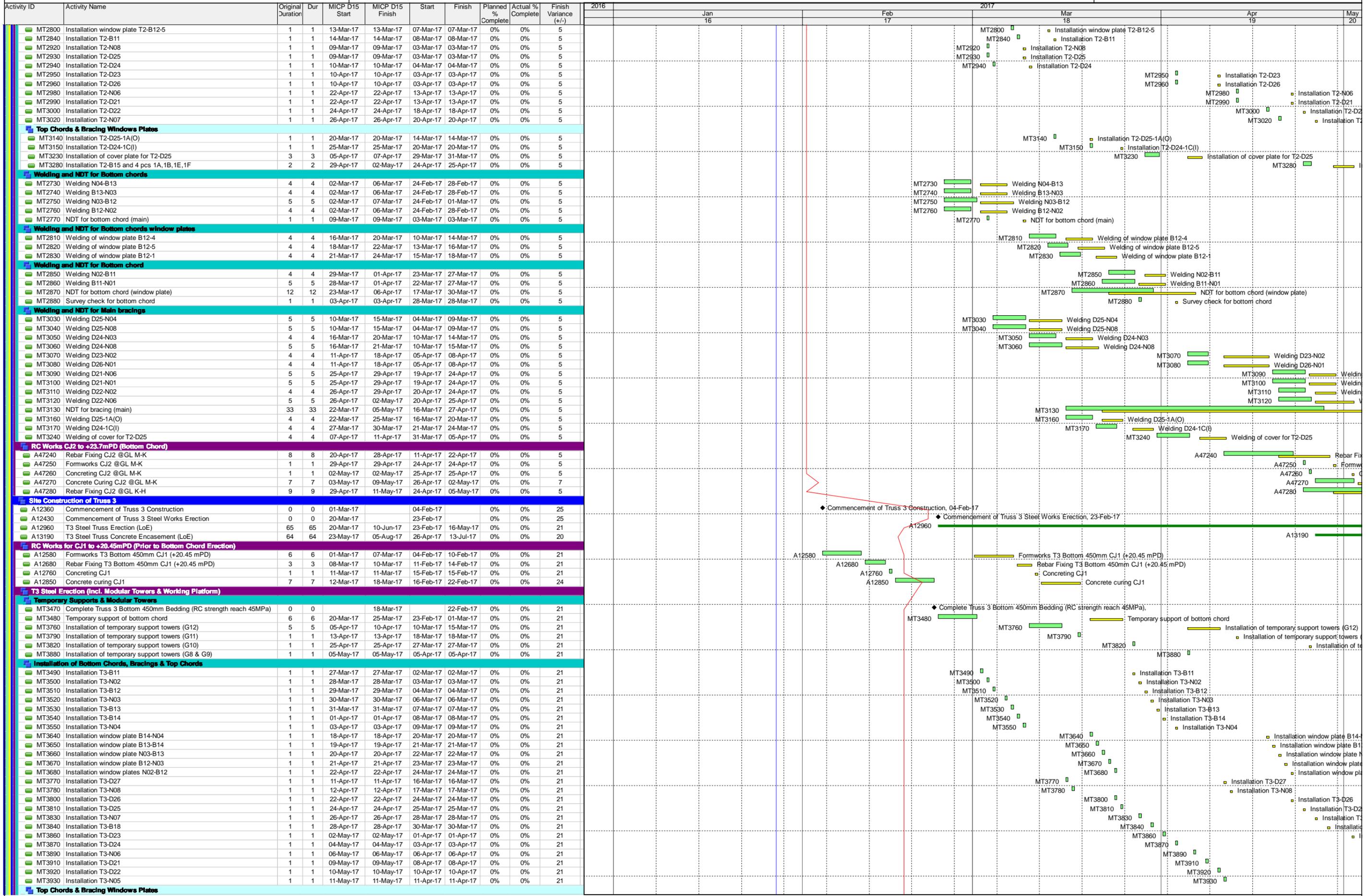
■ Remaining Level of Effort  
■ Actual Level of Effort  
◆ Milestone  
◆ Critical Milestone  
■ Actual Work  
■ Remaining Work  
◆ Critical Remaining Work  
◆ Actual Milestone  
■ Project Baseline



# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)



# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)





# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	MICP D15 Start	MICP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017					
											Jan 16	Feb 17	Mar 18	Apr 19	May 20	
MT4580	Welding N05-B13	4	4	06-Apr-17	10-Apr-17	16-Mar-17	20-Mar-17	0%	0%	17						
MT4590	Welding N04-B13	4	4	19-Apr-17	22-Apr-17	25-Mar-17	29-Mar-17	0%	0%	17						
MT4600	Welding N04-B12	4	4	20-Apr-17	24-Apr-17	27-Mar-17	30-Mar-17	0%	0%	17						
MT4610	Welding N03-B12	4	4	24-Apr-17	27-Apr-17	30-Mar-17	03-Apr-17	0%	0%	17						
MT4620	Welding B11-N03	4	4	06-May-17	10-May-17	11-Apr-17	18-Apr-17	0%	0%	17						
MT4630	Welding B11-N02	4	4	09-May-17	12-May-17	13-Apr-17	20-Apr-17	0%	0%	17						
MT4640	NDT for bottom chord (main)	24	24	13-Apr-17	16-May-17	23-Mar-17	24-Apr-17	0%	0%	17						
MT4650	Survey check for bottom chord	1	1	13-May-17	13-May-17	21-Apr-17	21-Apr-17	0%	0%	17						
<b>Welding and NDT of main Bracings and Top Chords</b>																
MT4850	Welding D24-N03	4	4	12-May-17	16-May-17	20-Apr-17	24-Apr-17	0%	0%	17						
MT4860	Welding N06-N02	5	5	17-May-17	22-May-17	25-Apr-17	29-Apr-17	0%	0%	17						
MT4920	Welding D26-N08	5	5	13-May-17	18-May-17	21-Apr-17	26-Apr-17	0%	0%	17						
MT5000	Welding N05-N09	4	4	11-May-17	15-May-17	19-Apr-17	22-Apr-17	0%	0%	17						
MT5010	Welding D26-N04	4	4	16-May-17	19-May-17	24-Apr-17	27-Apr-17	0%	0%	17						
MT5090	NDT for bracing and top chord (main)	20	20	18-May-17	10-Jun-17	26-Apr-17	20-May-17	0%	0%	17						
<b>Podium &amp; Tower FACADE Preliminaries</b>																
<b>VMU DESIGN SUBMISSION</b>																
<b>VMU - L3 Storefront</b>																
A51160	6th Shopdrawing Submission	18	18	17-Dec-16	03-Jan-17	28-Jan-17	14-Feb-17	100%	0%	-42						
A51170	6th Shopdrawing Submission - Review & Approval	21	21	04-Jan-17	24-Jan-17	15-Feb-17	07-Mar-17	100%	0%	-42						
<b>VMU SAMPLE SUBMISSION &amp; APPROVALS</b>																
<b>Visual Mock Up</b>																
<b>Tower Facade PC-CW-VMU</b>																
A18510	Production of Terracotta for Tower VMU	48	48	17-Dec-16	17-Feb-17	01-Feb-17	28-Mar-17	68.75%	0%	-33						
A18520	Delivery of Terracotta to precast Factory from Italy (by air) VMU 01	9	9	18-Feb-17	28-Feb-17	29-Mar-17	08-Apr-17	0%	0%	-33						
A18530	Precast Delivery Panel Concreting	10	10	01-Mar-17	11-Mar-17	10-Apr-17	24-Apr-17	0%	0%	-33						
A18540	Delivery of Precast to Inspection Area (in Factory)	1	1	13-Mar-17	13-Mar-17	25-Apr-17	25-Apr-17	0%	0%	-33						
A18550	Installation of Mock Up, Inspection & Approval of VMU-Tower (in Facto	5	5	14-Mar-17	18-Mar-17	26-Apr-17	02-May-17	0%	0%	-33						
<b>Concrete Shell - VMU</b>																
<b>Podium Facade-VMU</b>																
A18560	Production of Terracotta for Podium VMU	54	54	17-Dec-16	24-Feb-17	01-Feb-17	05-Apr-17	61.11%	0%	-33						
A18570	Delivery of Terracotta to precast Factory from Italy (by air) VMU 02	9	9	25-Feb-17	07-Mar-17	06-Apr-17	19-Apr-17	0%	0%	-33						
A18580	Production of Precast Panel & Delivery	32	32	08-Mar-17	18-Apr-17	20-Apr-17	29-May-17	0%	0%	-33						
<b>GF Ceramic Cladding, GW with Ceramic Mullion - VMU</b>																
A18610	Aluminium Perforated Panel Fabrication	27	27	17-Dec-16	20-Jan-17	01-Feb-17	03-Mar-17	100%	0%	-33						
A18620	Production of Terracotta	20	20	17-Dec-16	12-Jan-17	01-Feb-17	23-Feb-17	100%	0%	-33						
A18630	Delivery of Terracotta to Precast Factory from Italy (by air) VMU 03	9	9	13-Jan-17	23-Jan-17	24-Feb-17	06-Mar-17	100%	0%	-33						
A18640	Casting Ceramic Mullion	7	7	24-Jan-17	03-Feb-17	07-Mar-17	14-Mar-17	57.14%	0%	-33						
A18650	Delivery and Installation of Ceramic Mullion & Tube Mock Up	7	7	04-Feb-17	11-Feb-17	15-Mar-17	22-Mar-17	0%	0%	-33						
A18660	Glazing & Sealant Application	2	2	13-Feb-17	14-Feb-17	23-Mar-17	24-Mar-17	0%	0%	-33						
A18670	Inspection & Approval of Visual Mock Up	3	3	15-Feb-17	17-Feb-17	25-Mar-17	28-Mar-17	0%	0%	-33						
<b>Podium Facade-VMU-1</b>																
A18680	Inspection & Approval of VMU	3	3	17-Dec-16	20-Dec-16	01-Feb-17	03-Feb-17	100%	0%	-33						
<b>Hybrid with GW - VMU</b>																
<b>T Mullion with GW-VMU</b>																
A18690	Glass Door Frame Fabrication	40	40	17-Dec-16	08-Feb-17	01-Feb-17	18-Mar-17	82.5%	0%	-33						
A18700	Installation of Glass Door	3	3	09-Feb-17	11-Feb-17	20-Mar-17	22-Mar-17	0%	0%	-33						
A18710	Inspection & Approval of VMU	7	7	13-Feb-17	20-Feb-17	23-Mar-17	30-Mar-17	0%	0%	-33						
<b>Garden Gallery-VMU</b>																
A18720	Production of Terracotta	54	54	17-Dec-16	24-Feb-17	01-Feb-17	05-Apr-17	61.11%	0%	-33						
A18730	Delivery of Terracotta to Site from Italy (by air) VMU 08	9	9	25-Feb-17	07-Mar-17	06-Apr-17	19-Apr-17	0%	0%	-33						
A18740	Installation of Terracotta Mock Up	5	5	08-Mar-17	13-Mar-17	20-Apr-17	25-Apr-17	0%	0%	-33						
<b>EMBED SHOPDRAWINGS SUBMISSION</b>																
<b>EMBED - B1 Glass Wall with T Mullion</b>																
A51460	4th Shopdrawing Submission	46	88	02-Nov-16	17-Dec-16	02-Nov-16	28-Jan-17	100%	97.83%	-42						
A51470	4th Shopdrawing Submission - Review & Approval	21	21	18-Dec-16	07-Jan-17	29-Jan-17	18-Feb-17	100%	0%	-42						
A51480	5th Shopdrawing Submission	14	14	08-Jan-17	21-Jan-17	19-Feb-17	04-Mar-17	100%	0%	-42						
A51490	5th Shopdrawing Submission - Review & Approval	21	21	22-Jan-17	11-Feb-17	05-Mar-17	25-Mar-17	28.57%	0%	-42						
<b>SHOP DRAWING SUBMISSIONS FACADE SYSTEM &amp; EMBEDS</b>																
<b>SHOP DRAWING - Tower Facade Panel</b>																
A51230	Concept - 3rd Shopdrawing Submission - Review & Approval	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42						
<b>SHOP DRAWING - Podium Facade Panel</b>																
A51250	Concept - 2nd Shopdrawing Submission - Review & Approval	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42						
<b>SHOP DRAWING - Glass Wall with T Mullion</b>																
A51280	Concept - 2nd Shopdrawing Submission - Review & Approval	21	21	31-Dec-16	20-Jan-17	11-Feb-17	03-Mar-17	100%	0%	-42						
<b>SHOP DWG - Glass Wall with Ceramic/Precast Concrete Mullion, Ceramic Concrete Tube &amp; Perforated Clads</b>																
A51300	Concept - 1st Shopdrawing Submission (Embed)	24	66	07-Dec-16	30-Dec-16	07-Dec-16	10-Feb-17	100%	41.67%	-42						
A51310	Concept - 1st Shopdrawing Submission - Review & Approval	21	21	31-Dec-16	20-Jan-17	11-Feb-17	03-Mar-17	100%	0%	-42						
<b>SHOP DRAWING - Strip Glazing at Skylight Gallery</b>																
A51320	Concept - 2nd Shopdrawing Submission	76	118	05-Oct-16	19-Dec-16	05-Oct-16	30-Jan-17	100%	96.05%	-42						
A51330	Concept - 2nd Shopdrawing Submission - Review & Approval	21	21	20-Dec-16	09-Jan-17	31-Jan-17	20-Feb-17	100%	0%	-42						
<b>SHOP DRAWING - Plaza Skylight at L3</b>																
A51340	Concept - 2nd Shopdrawing Submission	83	125	28-Sep-16	19-Dec-16	28-Sep-16	30-Jan-17	100%	96.39%	-42						
A51350	Concept - 2nd Shopdrawing Submission - Review & Approval	21	21	20-Dec-16	09-Jan-17	31-Jan-17	20-Feb-17	100%	0%	-42						
<b>SHOP DRAWING - L3 Storefront</b>																
A51360	Concept - 3rd Shopdrawing Submission	40	82	08-Nov-16	17-Dec-16	08-Nov-16	28-Jan-17	100%	97.5%	-42						
A51370	Concept - 3rd Shopdrawing Submission - Review & Approval	21	21	18-Dec-16	07-Jan-17	29-Jan-17	18-Feb-17	100%	0%	-42						
<b>SHOP DRAWING - Garden Gallery Ceramic Cladding</b>																
A51380	Concept - 2nd Shopdrawing Submission	79	121	05-Oct-16	22-Dec-16	05-Oct-16	02-Feb-17	100%	92.41%	-42						
A51390	Concept - 2nd Shopdrawing Submission - Review & Approval	21	21	23-Dec-16	12-Jan-17	03-Feb-17	23-Feb-17	100%	0%	-42						
<b>SHOP DRAWING - Metal Cladding FAC-LV-01a/FAC-LV-01b (Additional Scope)</b>																
A51400	Concept - 1st Shopdrawing Submission	32	32	17-Dec-16	17-Jan-17	28-Jan-17	28-Feb-17	100%	0%	-42						
A51410	Concept - 1st Shopdrawing Submission - Review & Approval	21	21	18-Jan-17	07-Feb-17	01-Mar-17	21-Mar-17	47.62%	0%	-42						
A51420	Concept - 2nd Shopdrawing Submission	14	14	08-Feb-17	21-Feb-17	22-Mar-17	04-Apr-17	0%	0%	-42						
A51430	Concept - 2nd Shopdrawing Submission - Review & Approval	21	21	22-Feb-17	14-Mar-17	05-Apr-17	25-Apr-17	0%	0%	-42						
<b>SHOP DRAWING - Tower Facade Lighting</b>																
A51450	Concept - 3rd Shopdrawing Submission - Review & Approval	31	73	30-Nov-16	30-Dec-16	30-Nov-16	10-Feb-17	100%	54.84%	-42						
<b>SHOP DRAWING - Tower Facade Lighting, Electrical Works</b>																
A39330	Concept - 1st Shopdrawing Submission - Review & Approval	49	91	12-Nov-16	30-Dec-16	12-Nov-16	10-Feb-17	100%	71.43%	-42						
<b>BD SUBMISSIONS FACADE SYSTEM &amp; EMBEDS</b>																
<b>BD Submission - L3 Storefront</b>																
A51520	2nd Submission	28	70	26-Nov-16	23-Dec-16	26-Nov-16	03-Feb-17	100%	75%	-42						
A51530	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	24-Dec-16	06-Jan-17	04-Feb-17	17-Feb-17	100%	0%	-42						
A51540	L3 Storefront Embeds - Submission to BD	0	0		09-Jan-17	20-Feb-17	100%	0%	-33							
A51550	L3 Storefront Embeds - BD Approval	60	60	10-Jan-17	10-Mar-17	21-Feb-17	21-Apr-17	30%	0%	-42						
A51560	L3 Storefront Embeds - Concent	30	30	11-Mar-17	09-Apr-17	22-Apr-17	21-May-17	0%	0%	-42						

# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

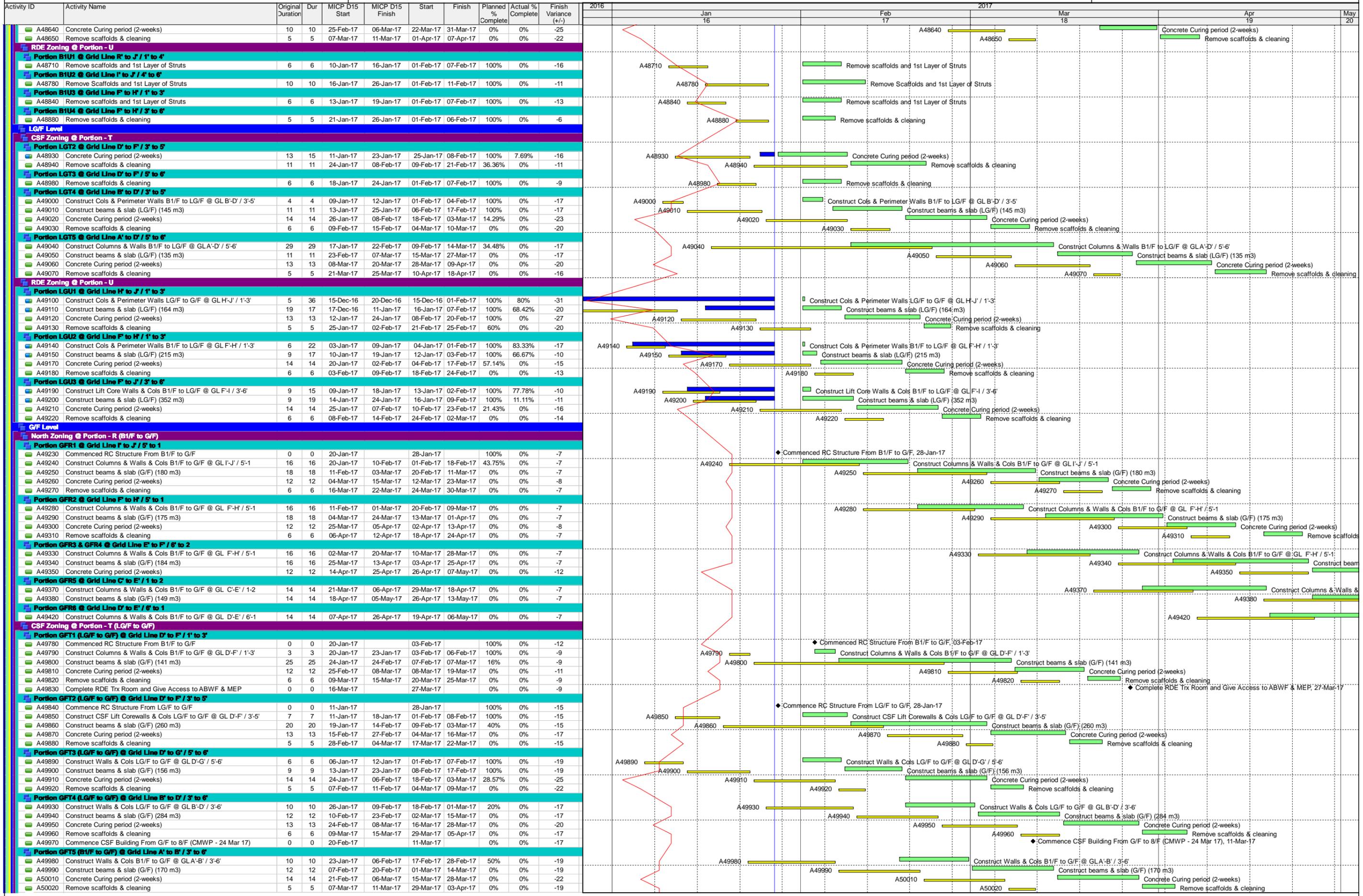
Activity ID	Activity Name	Original Duration	Dur	M1CP D15 Start	M1CP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017				
											Jan 16	Feb 17	Mar 18	Apr 19	May 20
<b>BD Submission - Tower Precast Facade Embed &amp; Shopdrawings</b>															
A51590	2nd Submission	7	7	17-Dec-16	23-Dec-16	28-Jan-17	03-Feb-17	100%	0%	-42					
A51600	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	24-Dec-16	06-Jan-17	04-Feb-17	17-Feb-17	100%	0%	-42					
<b>BD Submission - Podium Precast Facade Embed &amp; Shopdrawings</b>															
A51660	2nd Submission	7	7	17-Dec-16	23-Dec-16	28-Jan-17	03-Feb-17	100%	0%	-42					
A51670	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	24-Dec-16	06-Jan-17	04-Feb-17	17-Feb-17	100%	0%	-42					
A51680	Podium Precast Facade Embeds - Submission to BD	0	0		06-Jan-17		17-Feb-17	100%	0%	-33					
A51690	Podium Precast Facade Embeds - BD Approval	60	60	07-Jan-17	07-Mar-17	18-Feb-17	18-Apr-17	35%	0%	-42	A51690				
A51700	Podium Precast Facade Embeds - Conccent	30	30	08-Mar-17	06-Apr-17	19-Apr-17	18-May-17	0%	0%	-42		A51700			
<b>BD Submission - Garden Gallery Ceramic Cladding</b>															
A51750	2nd Submission	7	7	17-Dec-16	23-Dec-16	28-Jan-17	03-Feb-17	100%	0%	-42					
A51760	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	24-Dec-16	06-Jan-17	04-Feb-17	17-Feb-17	100%	0%	-42					
A51770	Garden Gallery Ceramic - Submission to BD	0	0		12-Jan-17		23-Feb-17	100%	0%	-33					
A51780	Garden Gallery Ceramic - BD Approval	60	60	13-Jan-17	13-Mar-17	24-Feb-17	24-Apr-17	25%	0%	-42	A51780				
A51790	Garden Gallery Ceramic - Conccent	30	30	14-Mar-17	12-Apr-17	25-Apr-17	24-May-17	0%	0%	-42		A51790			
<b>BD Submission - Glass Wall with T Mullion</b>															
A51800	1st Submission	6	6	17-Dec-16	22-Dec-16	28-Jan-17	02-Feb-17	100%	0%	-42					
A51810	1st Submission - Review & Approval by MJV	14	14	23-Dec-16	05-Jan-17	03-Feb-17	16-Feb-17	100%	0%	-42					
A51820	2nd Submission	7	7	06-Jan-17	12-Jan-17	17-Feb-17	23-Feb-17	100%	0%	-42	A51820				
A51830	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	13-Jan-17	26-Jan-17	24-Feb-17	09-Mar-17	100%	0%	-42	A51830				
A51850	Glass Wall with T Mullion - Submission to BD	0	0		26-Jan-17		09-Mar-17	100%	0%	-33					
A51860	Glass Wall with T Mullion - BD Approval	60	60	27-Jan-17	27-Mar-17	10-Mar-17	08-May-17	1.67%	0%	-42		A51860			
<b>BD Submission - Strip Glazing at Skylight Gallery &amp; Plaza Skylight at L3</b>															
A51900	2nd Submission	7	7	17-Dec-16	23-Dec-16	28-Jan-17	03-Feb-17	100%	0%	-42					
A51910	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	24-Dec-16	06-Jan-17	04-Feb-17	17-Feb-17	100%	0%	-42					
A51920	Strip Glazing at Skylight Gallery & Plaza Skylight - Submission to BD	0	0		09-Jan-17		20-Feb-17	100%	0%	-33					
A51930	Strip Glazing at Skylight Gallery & Plaza Skylight - BD Approval	60	60	10-Jan-17	10-Mar-17	21-Feb-17	21-Apr-17	30%	0%	-42	A51930				
A51950	Strip Glazing at Skylight Gallery & Plaza Skylight - Conccent	30	30	11-Mar-17	09-Apr-17	22-Apr-17	21-May-17	0%	0%	-42		A51950			
<b>BD Submission - Glass Wall with Ceramic/Precast Concrete Mullion, Concrete Tube &amp; Perforated Claddin</b>															
A51960	1st Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42					
A51970	1st Submission - Review & Approval by MJV	14	14	29-Dec-16	11-Jan-17	09-Feb-17	22-Feb-17	100%	0%	-42					
A51980	2nd Submission	7	7	12-Jan-17	18-Jan-17	23-Feb-17	01-Mar-17	100%	0%	-42	A51980				
A51990	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42	A51990				
A52000	Glass Wall with Ceramic & Precast Concrete Mullion - Submission to BD	0	0		01-Feb-17		15-Mar-17	0%	0%	-36					
A52010	Glass Wall with Ceramic & Precast Concrete Mullion - BD Approval	60	60	02-Feb-17	02-Apr-17	16-Mar-17	14-May-17	0%	0%	-42		A52010			
<b>BD Submission - Metal Cladding FAC-LV-01a/FAC-LV-01b (North Perimeter Rd)</b>															
A52040	1st Submission	40	40	17-Dec-16	25-Jan-17	28-Jan-17	08-Mar-17	100%	0%	-42					
A52050	1st Submission - Review & Approval by MJV	14	14	26-Jan-17	08-Feb-17	09-Mar-17	22-Mar-17	14.29%	0%	-42		A52050			
A52070	2nd Submission	7	7	09-Feb-17	15-Feb-17	23-Mar-17	29-Mar-17	0%	0%	-42		A52070			
A52080	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	16-Feb-17	01-Mar-17	30-Mar-17	12-Apr-17	0%	0%	-42		A52080			
A52090	Metal Cladding (North Perimeter Rd) - Submission to BD	0	0		14-Mar-17		25-Apr-17	0%	0%	-32					
A52100	Metal Cladding (North Perimeter Rd) - BD Approval	60	60	15-Mar-17	13-May-17	26-Apr-17	24-Jun-17	0%	0%	-42			A52100		
<b>SHOPDRAWING SUBMISSIONS - FACADE DOORS</b>															
<b>Facade Doors Package #1 - Glazed door between Ceramic Concrete Mullion - Total No. of Doors = 53</b>															
A52120	1st Shopdrawing Submission	67	67	17-Dec-16	21-Feb-17	28-Jan-17	04-Apr-17	62.69%	0%	-42					
A52130	1st Shopdrawing Submission - Review & Approval	21	21	22-Feb-17	14-Mar-17	05-Apr-17	25-Apr-17	0%	0%	-42		A52130			
A52140	2nd Shopdrawing Submission	14	14	15-Mar-17	28-Mar-17	26-Apr-17	09-May-17	0%	0%	-42			A52140		
<b>Facade Doors Package #2 - Sliding door at L3 Storefront - Total No. of Doors = 4</b>															
A52170	1st Shopdrawing Submission	67	67	17-Dec-16	21-Feb-17	28-Jan-17	04-Apr-17	62.69%	0%	-42					
A52180	1st Shopdrawing Submission - Review & Approval	21	21	22-Feb-17	14-Mar-17	05-Apr-17	25-Apr-17	0%	0%	-42		A52180			
A52190	2nd Shopdrawing Submission	14	14	15-Mar-17	28-Mar-17	26-Apr-17	09-May-17	0%	0%	-42			A52190		
<b>Facade Doors Package #3 - Swing Door at L3 Cafe - Total No. of Doors = 1</b>															
A52210	1st Shopdrawing Submission	74	74	17-Dec-16	28-Feb-17	28-Jan-17	11-Apr-17	56.76%	0%	-42					
A52220	1st Shopdrawing Submission - Review & Approval	21	21	01-Mar-17	21-Mar-17	12-Apr-17	02-May-17	0%	0%	-42		A52220			
<b>Facade Doors Package #4 - Swing Door mounted in GW with T Mullion - Total No. of Doors = 29</b>															
A52260	1st Shopdrawing Submission	74	74	17-Dec-16	28-Feb-17	28-Jan-17	11-Apr-17	56.76%	0%	-42					
A52270	1st Shopdrawing Submission - Review & Approval	21	21	01-Mar-17	21-Mar-17	12-Apr-17	02-May-17	0%	0%	-42		A52270			
<b>Facade Doors Package #5 - Large double door at B1 Transformer Room - Total No. of Doors = 1</b>															
A52300	1st Shopdrawing Submission	81	81	17-Dec-16	07-Mar-17	28-Jan-17	18-Apr-17	51.85%	0%	-42					
A52310	1st Shopdrawing Submission - Review & Approval	21	21	08-Mar-17	28-Mar-17	19-Apr-17	09-May-17	0%	0%	-42		A52310			
<b>Facade Doors Package #6 - B1 Exit Door - Total No. of Doors = 7 (7 x Manual)</b>															
A52350	1st Shopdrawing Submission	81	81	17-Dec-16	07-Mar-17	28-Jan-17	18-Apr-17	51.85%	0%	-42					
A52360	1st Shopdrawing Submission - Review & Approval	21	21	08-Mar-17	28-Mar-17	19-Apr-17	09-May-17	0%	0%	-42		A52360			
<b>Facade Doors Package #7 - Garden Gallery Door - Total No. of Doors = 2 (2 x Manual)</b>															
A52390	1st Shopdrawing Submission	88	88	17-Dec-16	14-Mar-17	28-Jan-17	25-Apr-17	47.73%	0%	-42					
A52400	1st Shopdrawing Submission - Review & Approval	21	21	15-Mar-17	04-Apr-17	26-Apr-17	16-May-17	0%	0%	-42		A52400			
<b>Facade Doors Package #8 - Doors located in Metal Cladding - Total No. of Doors = 20 (20 x Manual)</b>															
A52440	1st Shopdrawing Submission	88	88	17-Dec-16	14-Mar-17	28-Jan-17	25-Apr-17	47.73%	0%	-42					
A52450	1st Shopdrawing Submission - Review & Approval	21	21	15-Mar-17	04-Apr-17	26-Apr-17	16-May-17	0%	0%	-42		A52450			
<b>Facade Doors Package #9 - GF Lobby Access Door in Ceramic Tube - Total No. of Doors = 8</b>															
A52480	1st Shopdrawing Submission	88	88	17-Dec-16	14-Mar-17	28-Jan-17	25-Apr-17	47.73%	0%	-42					
A52490	1st Shopdrawing Submission - Review & Approval	21	21	15-Mar-17	04-Apr-17	26-Apr-17	16-May-17	0%	0%	-42		A52490			
<b>Facade Doors Package #10 - B1 Carriageway Access Panel &amp; Doors - Total No. of Doors = 24</b>															
A52530	1st Shopdrawing Submission	95	95	17-Dec-16	21-Mar-17	28-Jan-17	02-May-17	44.21%	0%	-42					
<b>Facade Doors Package #12 - B1 Smoke Vent Panel - Total No. of Doors = 1</b>															
A52580	1st Shopdrawing Submission	96	96	17-Dec-16	22-Mar-17	28-Jan-17	03-May-17	43.75%	0%	-42					
<b>PERFORMANCE TEST - SHOPDRAWING SUBMISSION, FABRICATION, INSTALLATION &amp; TEST</b>															
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Tower Facade Precast Panel</b>															
A52620	Perf MU - 2nd Shopdrawing Submission	14	56	05-Dec-16	18-Dec-16	05-Dec-16	29-Jan-17	100%	85.71%	-42					
A52630	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	63	07-Dec-16	27-Dec-16	07-Dec-16	07-Feb-17	100%	47.62%	-42					
A52650	Perf MU - 3rd Shopdrawing Submission	14	14	28-Dec-16	10-Jan-17	08-Feb-17	21-Feb-17	100%	0%	-42					
A52660	Perf MU - 3rd Shopdrawing Submission - Review & Approval	21	21	11-Jan-17	31-Jan-17	22-Feb-17	14-Mar-17	80.95%	0%	-42	A52660				
A54620	Perf MU - Precast Concrete Facade Ordering & Production	173	215	07-Dec-16	28-May-17	07-Dec-16	09-Jul-17	30.06%	5.78%	-42					
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Podium Facade Precast Panel</b>															
A52680	Perf MU - 1st Shopdrawing Submission - Review & Approval	22	64	06-Dec-16	27-Dec-16	06-Dec-16	07-Feb-17	100%	50%	-42					
A52690	Perf MU - 2nd Shopdrawing Submission	14	14	28-Dec-16	10-Jan-17	08-Feb-17	21-Feb-17	100%	0%	-42					
A52700	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	11-Jan-17	31-Jan-17	22-Feb-17	14-Mar-17	80.95%	0%	-42	A52700				
A54650	Perf MU - Podium Facade Precast Concrete + Curtain Wall Ordering &	187	187	17-Dec-16	21-Jun-17	28-Jan-17	02-Aug-17	22.46%	0%	-42					
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Kinked Glass with T Mullion</b>															
A52710	Perf MU - 1st Shopdrawing Submission	33	33	17-Dec-16	18-Jan-17	28-Jan-17	01-Mar-17	100%	0%	-42					
A52720	Perf MU - 1st Shopdrawing Submission - Review & Approval	21	21	19-Jan-17	08-Feb-17	02-Mar-17	22-Mar-17	42.86%	0%	-42		A52720			
A52730	Perf MU - 2nd Shopdrawing Submission	14	14	09-Feb-17	22-Feb-17	23-Mar-17	05-Apr-17	0%	0%	-42		A52730			
A52740	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	23-Feb-17	15-Mar-17	06-Apr-17	26-Apr-17	0%	0%	-42		A52740			
A54700	Perf MU - GW with T Mullion + Reflective Glass Ordering & Production	123	123	19-Jan-17	21-May-17	02-Mar-17	02-Jul-17	7.32%	0%	-42	A54700				
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Glass Wall with Ceramic Mullions at GF</b>															
A52750	Perf MU - 1st Shopdrawing Submission	33	33	17-Dec-16	18-Jan-17	28-Jan-17	01-Mar-17	100%	0%	-42					

# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	M1CP D15 Start	M1CP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017						
											Jan 16	Feb 17	Mar 18	Apr 19	May 20		
A52760	Perf MU - 1st Shopdrawing Submission - Review & Approval	21	21	19-Jan-17	08-Feb-17	02-Mar-17	22-Mar-17	42.86%	0%	-42							
A52770	Perf MU - 2nd Shopdrawing Submission	14	14	09-Feb-17	22-Feb-17	23-Mar-17	05-Apr-17	0%	0%	-42							
A52780	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42							
A54740	Perf MU - GW with Ceramic Mullion G/F Production & Fabrication	197	197	09-Feb-17	24-Aug-17	23-Mar-17	05-Oct-17	0%	0%	-42							
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Vertical Glass Wall at Skylight Gallery</b>																	
A52790	Perf MU - 1st Shopdrawing Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42							
A52800	Perf MU - 1st Shopdrawing Submission - Review & Approval	21	21	29-Dec-16	18-Jan-17	09-Feb-17	01-Mar-17	100%	0%	-42							
A52810	Perf MU - 2nd Shopdrawing Submission	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42							
A52820	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	02-Feb-17	22-Feb-17	16-Mar-17	05-Apr-17	0%	0%	-42							
A54820	Perf MU - Vertical Glass Wall Skylight Gallery Production & Fabrication	134	134	19-Jan-17	01-Jun-17	02-Mar-17	13-Jul-17	6.72%	0%	-42							
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Plaza Skylight 3/F Terrace</b>																	
A52830	Perf MU - 1st Shopdrawing Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42							
A52840	Perf MU - 1st Shopdrawing Submission - Review & Approval	21	21	29-Dec-16	18-Jan-17	09-Feb-17	01-Mar-17	100%	0%	-42							
A52850	Perf MU - 2nd Shopdrawing Submission	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42							
A52860	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	02-Feb-17	22-Feb-17	16-Mar-17	05-Apr-17	0%	0%	-42							
A54780	Perf MU - Plaza Skylight 3/F Terrace Production & Fabrication	117	117	19-Jan-17	15-May-17	02-Mar-17	26-Jun-17	7.69%	0%	-42							
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - Acoustic Mock up</b>																	
A52870	Perf MU - 2nd Shopdrawing Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42							
A52880	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	29-Dec-16	18-Jan-17	09-Feb-17	01-Mar-17	100%	0%	-42							
A52890	Perf MU - 3rd Shopdrawing Submission	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42							
A52900	Perf MU - 3rd Shopdrawing Submission - Review & Approval	21	21	02-Feb-17	22-Feb-17	16-Mar-17	05-Apr-17	0%	0%	-42							
<b>BIM MODEL SUBMISSION</b>																	
<b>BIM MODEL SUBMISSION - Tower Facade Precast Panel (MPLUS-BIM-D003)</b>																	
A52920	5th BIM Model Submission	149	191	20-Sep-16	15-Feb-17	20-Sep-16	29-Mar-17	87.25%	59.06%	-42							
A52930	5th BIM Model Submission - Review & Approval	21	21	16-Feb-17	08-Mar-17	30-Mar-17	19-Apr-17	0%	0%	-42							
A52940	6th BIM Model Submission	14	14	09-Mar-17	22-Mar-17	20-Apr-17	03-May-17	0%	0%	-42							
<b>BIM MODEL SUBMISSION - Podium Facade Panel (MPLUS-BIM-D004)</b>																	
A52960	3rd BIM Model Submission	209	251	15-Jul-16	08-Feb-17	15-Jul-16	22-Mar-17	94.26%	74.16%	-42							
A52970	3rd BIM Model Submission - Review & Approval	21	21	09-Feb-17	01-Mar-17	23-Mar-17	12-Apr-17	0%	0%	-42							
A52980	4th BIM Model Submission	14	14	02-Mar-17	15-Mar-17	13-Apr-17	26-Apr-17	0%	0%	-42							
<b>BIM MODEL SUBMISSION - Glass Wall with T Mullion</b>																	
A53000	1st BIM Model Submission	56	98	23-Nov-16	17-Jan-17	23-Nov-16	28-Feb-17	100%	42.86%	-42							
A53010	1st BIM Model Submission - Review & Approval	21	21	18-Jan-17	07-Feb-17	01-Mar-17	21-Mar-17	47.62%	0%	-42							
A53020	2nd BIM Model Submission	14	14	08-Feb-17	21-Feb-17	22-Mar-17	04-Apr-17	0%	0%	-42							
A53030	2nd BIM Model Submission - Review & Approval	21	21	22-Feb-17	14-Mar-17	05-Apr-17	25-Apr-17	0%	0%	-42							
<b>BIM MODEL SUBMISSION - Glass Wall with Ceramic Mullion &amp; Precast Concrete Mullion</b>																	
A53040	1st BIM Model Submission	46	46	17-Dec-16	31-Jan-17	28-Jan-17	14-Mar-17	91.3%	0%	-42							
A53050	1st BIM Model Submission - Review & Approval	21	21	01-Feb-17	21-Feb-17	15-Mar-17	04-Apr-17	0%	0%	-42							
A53060	2nd BIM Model Submission	14	14	22-Feb-17	07-Mar-17	05-Apr-17	18-Apr-17	0%	0%	-42							
A53070	2nd BIM Model Submission - Review & Approval	21	21	08-Mar-17	28-Mar-17	19-Apr-17	09-May-17	0%	0%	-42							
<b>BIM MODEL SUBMISSION - Ceramic Concrete Tubes &amp; Perforated Cladding</b>																	
A53080	1st BIM Model Submission	46	46	17-Dec-16	31-Jan-17	28-Jan-17	14-Mar-17	91.3%	0%	-42							
A53090	1st BIM Model Submission - Review & Approval	21	21	01-Feb-17	21-Feb-17	15-Mar-17	04-Apr-17	0%	0%	-42							
A53100	2nd BIM Model Submission	14	14	22-Feb-17	07-Mar-17	05-Apr-17	18-Apr-17	0%	0%	-42							
A53110	2nd BIM Model Submission - Review & Approval	21	21	08-Mar-17	28-Mar-17	19-Apr-17	09-May-17	0%	0%	-42							
<b>BIM MODEL SUBMISSION - Strip Glazing at Skylight Gallery &amp; Plaza Skylight at L3 (MPLUS-BIM-D006) &amp; (</b>																	
A53130	3rd BIM Model Submission - Review & Approval	21	21	21-Dec-16	10-Jan-17	01-Feb-17	21-Feb-17	100%	0%	-42							
A53140	4th BIM Model Submission	14	14	11-Jan-17	24-Jan-17	22-Feb-17	07-Mar-17	100%	0%	-42							
A53150	4th BIM Model Submission - Review & Approval	21	21	25-Jan-17	14-Feb-17	08-Mar-17	28-Mar-17	14.29%	0%	-42							
<b>BIM MODEL SUBMISSION - L3 Storefront (MPLUS-BIM-D001)</b>																	
A53170	5th BIM Model Submission - Review & Approval	21	21	21-Dec-16	10-Jan-17	01-Feb-17	21-Feb-17	100%	0%	-42							
A53180	6th BIM Model Submission	14	14	11-Jan-17	24-Jan-17	22-Feb-17	07-Mar-17	100%	0%	-42							
A53190	6th BIM Model Submission - Review & Approval	21	21	25-Jan-17	14-Feb-17	08-Mar-17	28-Mar-17	14.29%	0%	-42							
<b>BIM MODEL SUBMISSION - Garden Gallery Ceramic Cladding (MPLUS-BIM-D002)</b>																	
A53200	1st BIM Model Submission	76	118	06-Oct-16	20-Dec-16	06-Oct-16	31-Jan-17	100%	94.74%	-42							
A53210	1st BIM Model Submission - Review & Approval	21	21	21-Dec-16	10-Jan-17	01-Feb-17	21-Feb-17	100%	0%	-42							
A53220	2nd BIM Model Submission	14	14	11-Jan-17	24-Jan-17	22-Feb-17	07-Mar-17	100%	0%	-42							
A53230	2nd BIM Model Submission - Review & Approval	21	21	25-Jan-17	14-Feb-17	08-Mar-17	28-Mar-17	14.29%	0%	-42							
<b>BIM MODEL SUBMISSION - Metal Cladding FAC-LV-01a/FAC-LV-01b (Additional Scope)</b>																	
A53250	1st BIM Model Submission	70	70	17-Dec-16	24-Feb-17	28-Jan-17	07-Apr-17	60%	0%	-42							
A53260	1st BIM Model Submission - Review & Approval	21	21	25-Feb-17	17-Mar-17	08-Apr-17	28-Apr-17	0%	0%	-42							
<b>FABRICATION &amp; DELIVERY OF M+ TOWER &amp; PODIUM FACADE SYSTEM</b>																	
<b>01A Tower Facade PC+CW (Bulk)</b>																	
A54880	Production & Fabrication - Precast Panel for Tower - Summary	229	271	19-Nov-16	05-Jul-17	19-Nov-16	16-Aug-17	30.57%	12.23%	-42							
<b>Glass Production &amp; Fabrication</b>																	
A54450	Coated Glass Production	108	141	19-Nov-16	31-Mar-17	19-Nov-16	16-May-17	52.78%	22.22%	-33							
A54460	Fabrication of Glass Panel	206	206	18-Feb-17	27-Oct-17	18-Feb-17	27-Oct-17	0%	0%	0							
<b>CW Glazed Panel Production &amp; Fabrication</b>																	
A54900	Die Making - Bulk Production	68	101	22-Nov-16	15-Feb-17	22-Nov-16	25-Mar-17	80.88%	32.35%	-33							
A54910	Aluminium Extrusion Production	201	201	16-Feb-17	19-Oct-17	27-Mar-17	28-Nov-17	0%	0%	-33							
<b>Terracotta Production</b>																	
A54930	Die Making	36	69	19-Nov-16	03-Jan-17	19-Nov-16	14-Feb-17	100%	66.67%	-33							
A54940	Terracotta Production - Tower (Bulk)	222	222	04-Jan-17	03-Oct-17	15-Feb-17	13-Nov-17	9.46%	0%	-33							
A54950	Delivery to Precast Factory	212	212	10-Mar-17	24-Nov-17	22-Apr-17	05-Jan-18	0%	0%	-33							
<b>01B Tower Lighting (Bulk)</b>																	
<b>Procurement &amp; Production (2F to Roof) &amp; Shipment</b>																	
A55010	Procurement - Tower Lighting Bar	128	161	26-Oct-16	30-Mar-17	26-Oct-16	15-May-17	60.94%	35.16%	-33							
<b>02 Podium Facade PC + CW (Bulk)</b>																	
A54470	Production & Fabrication - Precast Panel for Podium	262	304	12-Nov-16	31-Jul-17	12-Nov-16	11-Sep-17	29.39%	13.36%	-42							
<b>Glass Production &amp; Fabrication</b>																	
A10020	Ordering of Coated Glass	106	139	12-Nov-16	22-Mar-17	12-Nov-16	06-May-17	59.43%	28.3%	-33							
<b>CW Glazed Panel Production &amp; Fabrication</b>																	
A10040	Die Making - Bulk Production	46	46	17-Feb-17	12-Apr-17	17-Feb-17	12-Apr-17	0%	0%	0							
A10050	Aluminium Extrusion Production	140	140	13-Apr-17	30-Sep-17	13-Apr-17	30-Sep-17	0%	0%	0							
<b>Terracotta Production</b>																	
A10080	Ordering of Terracotta - Podium (Bulk)	11	11	24-Dec-16	09-Jan-17	01-Feb-17	13-Feb-17	100%	0%	-27							
A10090	Die Making - Terracotta Production	55	55	10-Jan-17	17-Mar-17	14-Feb-17	22-Apr-17	29.09%	0%	-27							
A10100	Terracotta Production - Tower (Bulk)	165	165	16-Feb-17	05-Sep-17	20-Mar-17	09-Oct-17	0%	0%	-27							
<b>03 GW with T Mullion (Kinked &amp; Straight B1F to GF) (Bulk)</b>																	
A54490	Production & Fabrication - GW with T Mullion (Kinked & Straight B1F to GF)	187	187	25-Feb-17	30-Aug-17	25-Feb-17	30-Aug-17	0%	0%	0							
<b>Glass Production &amp; Fabrication</b>																	
A10190	Coated Glass Production	94	94	25-Feb-17	22-Jun-17	25-Feb-17	22-Jun-17	0%	0%	0							
<b>Alum Section Production &amp; Fabrication</b>																	
A10210	Die Making - Bulk Production	38	38	22-Apr-17	08-Jun-17	22-Apr-17	08-Jun-17	0%	0%	0							
<b>05 Ceramic Concrete Tubes &amp; Perforated Cladding (Bulk)</b>																	
A54600	Production & Fabrication - Ceramic Concrete Tubes & Perforated Cladding	229	229	25-Mar-17	08-Nov-17	25-Mar-17	08-Nov-17	0%	0%	0							



# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)



# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	MICP D15 Start	MICP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2016	Jan 16	Feb 17	2017	Mar 18	Apr 19	May 20										
<b>Portion GFT6 (B1/F to G/F) @ Grid Line A to A' / 5' to 6'</b>																											
A50030	Construct Walls & Cols B1/F to G/F @ GLA-A' / 5'-6'	7	7	06-Mar-17	13-Mar-17	28-Mar-17	05-Apr-17	0%	0%	-19				A50030													
A50040	Construct beams & slab (G/F) (216 m3)	18	18	14-Mar-17	03-Apr-17	06-Apr-17	29-Apr-17	0%	0%	-19				A50040													
<b>RDE Zoning @ Portion - U (LG/F to G/F)</b>																											
<b>Portion GFU1 (LG/F to G/F) @ Grid Line H to J' / 1' to 4'</b>																											
A50070	Commence RC Structure From LG/F to G/F	0	0	12-Jan-17		08-Feb-17		100%	0%	-23																	
A50090	Construct Columns & Walls LG/F to G/F @ GL H-J' / 1'-4'	6	6	12-Jan-17	18-Jan-17	08-Feb-17	14-Feb-17	100%	0%	-20				A50090													
A50100	Construct beams & slab (G/F) (206 m3)	25	25	19-Jan-17	20-Feb-17	15-Feb-17	15-Mar-17	32%	0%	-20				A50100													
A50110	Concrete Curing period (2-weeks)	12	12	21-Feb-17	04-Mar-17	16-Mar-17	27-Mar-17	0%	0%	-23				A50110													
A50120	Remove scaffolds & cleaning	6	6	06-Mar-17	11-Mar-17	28-Mar-17	03-Apr-17	0%	0%	-19				A50120													
<b>Portion GFU2 (LG/F to G/F) @ Grid Line I' to J' / 4' to 6'</b>																											
A50130	Construct Columns & Walls LG/F to G/F @ GL I'-J' / 4'-6'	7	7	03-Jan-17	10-Jan-17	01-Feb-17	08-Feb-17	100%	0%	-22				A50130													
A50140	Construct beams & slab (G/F) (178 m3)-Deferred due to hoisting steel	13	13	11-Jan-17	25-Jan-17	09-Feb-17	23-Feb-17	100%	0%	-22				A50140													
A50150	Concrete Curing period (2-weeks)	12	12	26-Jan-17	06-Feb-17	24-Feb-17	07-Mar-17	16.67%	0%	-29				A50150													
A50160	Remove scaffolds & cleaning	6	6	07-Feb-17	13-Feb-17	08-Mar-17	14-Mar-17	0%	0%	-25				A50160													
<b>Portion GFU3 (LG/F to G/F) @ Grid Line F' to I' / 1' to 3'</b>																											
A50170	Construct Columns & Walls LG/F to G/F @ GL F'-I' / 1'-3'	5	5	20-Jan-17	25-Jan-17	15-Feb-17	20-Feb-17	100%	0%	-19				A50170													
A50180	Construct beams & slab (G/F) (269 m3)	14	14	06-Feb-17	21-Feb-17	28-Feb-17	15-Mar-17	0%	0%	-19				A50180													
A50190	Concrete Curing period (2-weeks)	12	12	22-Feb-17	05-Mar-17	16-Mar-17	27-Mar-17	0%	0%	-22				A50190													
A50200	Remove scaffolds & cleaning	6	6	06-Mar-17	11-Mar-17	28-Mar-17	03-Apr-17	0%	0%	-19				A50200													
<b>Portion GFU4 (LG/F to G/F) @ Grid Line F' to I' / 3' to 5'</b>																											
A50210	Construct RDE Core walls & Cols LG/F to G/F @ GL F'-I' / 3'-5'	16	16	24-Jan-17	14-Feb-17	18-Feb-17	08-Mar-17	25%	0%	-19				A50210													
A50220	Construct beams & slab (G/F) (366 m3)	14	14	13-Feb-17	28-Feb-17	07-Mar-17	22-Mar-17	0%	0%	-19				A50220													
A50230	Concrete Curing period (2-weeks)	12	12	01-Mar-17	12-Mar-17	23-Mar-17	03-Apr-17	0%	0%	-22				A50230													
A50240	Remove scaffolds & cleaning	6	6	13-Mar-17	18-Mar-17	05-Apr-17	11-Apr-17	0%	0%	-19				A50240													
A50260	Commence RDE Building From G/F to 15M/F (CMWP-20 Mar 17)	0	0	02-Mar-17	24-Mar-17			0%	0%	-19																	
<b>CSF Super-Structure RC Works</b>																											
<b>CSF Building</b>																											
<b>CSF Structure @ Portion - T (G/F to 8/F)</b>																											
<b>Grid Line B' to F' / 4' to 6'</b>																											
A50700	Commence CSF Structure From G/F to 8/F	0	0	20-Feb-17		11-Mar-17		0%	0%	-17																	
A50710	CSF - Walls, Columns & 1/F Slab	24	24	20-Feb-17	18-Mar-17	11-Mar-17	08-Apr-17	0%	0%	-17				A50710													
A50720	CSF - Walls, Columns & 2/F Slab	20	20	20-Mar-17	12-Apr-17	10-Apr-17	08-May-17	0%	0%	-17				A50720													
<b>CSF Building FACADE Preliminaries</b>																											
<b>ENGINEERING &amp; APPROVAL - CSF</b>																											
<b>SHOPDRAWING - CSF Glass Wall (All Area)</b>																											
A19250	1st Shopdrawing Submission	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42																	
A19260	1st Shopdrawing Submission - Review & Approval	21	21	31-Dec-16	20-Jan-17	11-Feb-17	03-Mar-17	100%	0%	-42																	
A19270	2nd Shopdrawing Submission	14	14	21-Jan-17	03-Feb-17	04-Mar-17	17-Mar-17	50%	0%	-42																	
A19280	2nd Shopdrawing Submission - Review & Approval	21	21	04-Feb-17	24-Feb-17	18-Mar-17	07-Apr-17	0%	0%	-42																	
<b>SHOPDRAWING - Facade Doors Package #11 - CSF Doors - Total No. = 2</b>																											
A19290	1st Shopdrawing Submission	96	96	17-Dec-16	22-Mar-17	28-Jan-17	03-May-17	43.75%	0%	-42																	
<b>SHOPDRAWING - CSF Roof Louvre Wall</b>																											
A19330	1st Shopdrawing Submission & Comment	24	24	17-Dec-16	17-Jan-17	31-Feb-17	28-Feb-17	100%	0%	-33																	
A19340	2nd Shopdrawing Submission & Comment	18	18	18-Jan-17	10-Feb-17	01-Mar-17	21-Mar-17	50%	0%	-33																	
A19350	Aluminium Section Profile Approval	0	0		18-Jan-17		01-Mar-17	100%	0%	-33																	
A19360	3rd Shopdrawing Submission & Comment	18	18	11-Feb-17	03-Mar-17	22-Mar-17	12-Apr-17	0%	0%	-33																	
<b>BD SUBMISSION FACADE SYSTEM &amp; EMBEDS</b>																											
<b>CSF Glass Wall (All Area), Incl. CSF Louvre - FAC-LV-03 (Additional Scope)</b>																											
A19370	1st Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42																	
A19380	1st Submission - Review & Approval by MJV	14	14	29-Dec-16	11-Jan-17	09-Feb-17	22-Feb-17	100%	0%	-42																	
A19390	2nd Submission	7	7	12-Jan-17	18-Jan-17	23-Feb-17	01-Mar-17	100%	0%	-42																	
A19400	2nd Submission - Review & Approval by MJV (w/ RSE Endorsement)	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42																	
A19410	CSF Glass Wall (All Area) - Submission to BD	0	0		03-Mar-17		12-Apr-17	0%	0%	-33																	
A19420	CSF Glass Wall (All Area) - BD Approval	60	60	04-Mar-17	02-May-17	13-Apr-17	11-Jun-17	0%	0%	-40																	
<b>PERFORMANCE TEST - SHOPDRAWING SUBMISSION, FABRICATION, INSTALLATION &amp; TEST</b>																											
<b>PERFORMANCE TEST &amp; MOCK UP - CSF</b>																											
A19440	Shopdrawing Submission & Approval	70	70	17-Dec-16	15-Mar-17	31-Feb-17	27-Apr-17	47.14%	0%	-33																	
A19450	Ordering & Production of Material	107	107	18-Jan-17	02-Jun-17	01-Mar-17	12-Jul-17	8.41%	0%	-33																	
<b>PMU SHOPDRAWING SUBMISSION &amp; TEST - CSF Building</b>																											
A19480	Perf MU - 1st Shopdrawing Submission	26	26	17-Dec-16	11-Jan-17	28-Jan-17	22-Feb-17	100%	0%	-42																	
A19490	Perf MU - 1st Shopdrawing Submission - Review & Approval	21	21	12-Jan-17	01-Feb-17	23-Feb-17	15-Mar-17	76.19%	0%	-42																	
A19500	Perf MU - 2nd Shopdrawing Submission	14	14	02-Feb-17	15-Feb-17	16-Mar-17	29-Mar-17	0%	0%	-42																	
A19510	Perf MU - 2nd Shopdrawing Submission - Review & Approval	21	21	16-Feb-17	08-Mar-17	30-Mar-17	19-Apr-17	0%	0%	-42																	
A19520	Perf MU - CSF Facade Ordering & Production	147	147	02-Feb-17	28-Jun-17	16-Mar-17	09-Aug-17	0%	0%	-42																	
<b>BIM MODEL SUBMISSION</b>																											
<b>BIM MODEL SUBMISSION - CSF Glass Wall (All Area)</b>																											
A19740	1st BIM Model Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42																	
A19750	1st BIM Model Submission - Review & Approval	21	21	29-Dec-16	18-Jan-17	09-Feb-17	01-Mar-17	100%	0%	-42																	
A19760	2nd BIM Model Submission	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42																	
A19770	2nd BIM Model Submission - Review & Approval	21	21	02-Feb-17	22-Feb-17	16-Mar-17	05-Apr-17	0%	0%	-42																	
<b>BIM MODEL SUBMISSION - CSF Louvre FAC-LV-03 (Additional Scope)</b>																											
A19780	1st BIM Model Submission	12	12	17-Dec-16	28-Dec-16	28-Jan-17	08-Feb-17	100%	0%	-42																	
A19790	1st BIM Model Submission - Review & Approval	21	21	29-Dec-16	18-Jan-17	09-Feb-17	01-Mar-17	100%	0%	-42																	
A19800	2nd BIM Model Submission	14	14	19-Jan-17	01-Feb-17	02-Mar-17	15-Mar-17	64.29%	0%	-42																	
A19810	2nd BIM Model Submission - Review & Approval	21	21	02-Feb-17	22-Feb-17	16-Mar-17	05-Apr-17	0%	0%	-42																	
<b>Fabrication &amp; Delivery of CSF Facade System</b>																											
A19560	Glass Wall Production and Fabrication	221	221	15-Feb-17	11-Nov-17	15-Feb-17	11-Nov-17	0%	0%	0																	
A19570	Glass Production and Fabrication	127	127	23-Mar-17	26-Aug-17	23-Mar-17	26-Aug-17	0%	0%	0																	
A19580	Roof Louvre Wall Production & Fabrication	161	161	22-Apr-17	03-Nov-17	22-Apr-17	03-Nov-17	0%	0%	0																	
<b>Glass Production &amp; Fabrication</b>																											
A19590	Ordering of Coated Glass	68	68	23-Mar-17	17-Jun-17	23-Mar-17	17-Jun-17	0%	0%	0																	
<b>Glass Wall Production &amp; Fabrication</b>																											
A19610	Die Making	51	51	15-Feb-17	19-Apr-17	15-Feb-17	19-Apr-17	0%	0%	0																	
A19620	Aluminium Extrusion Production	24	24	20-Apr-17	19-May-17	20-Apr-17																					

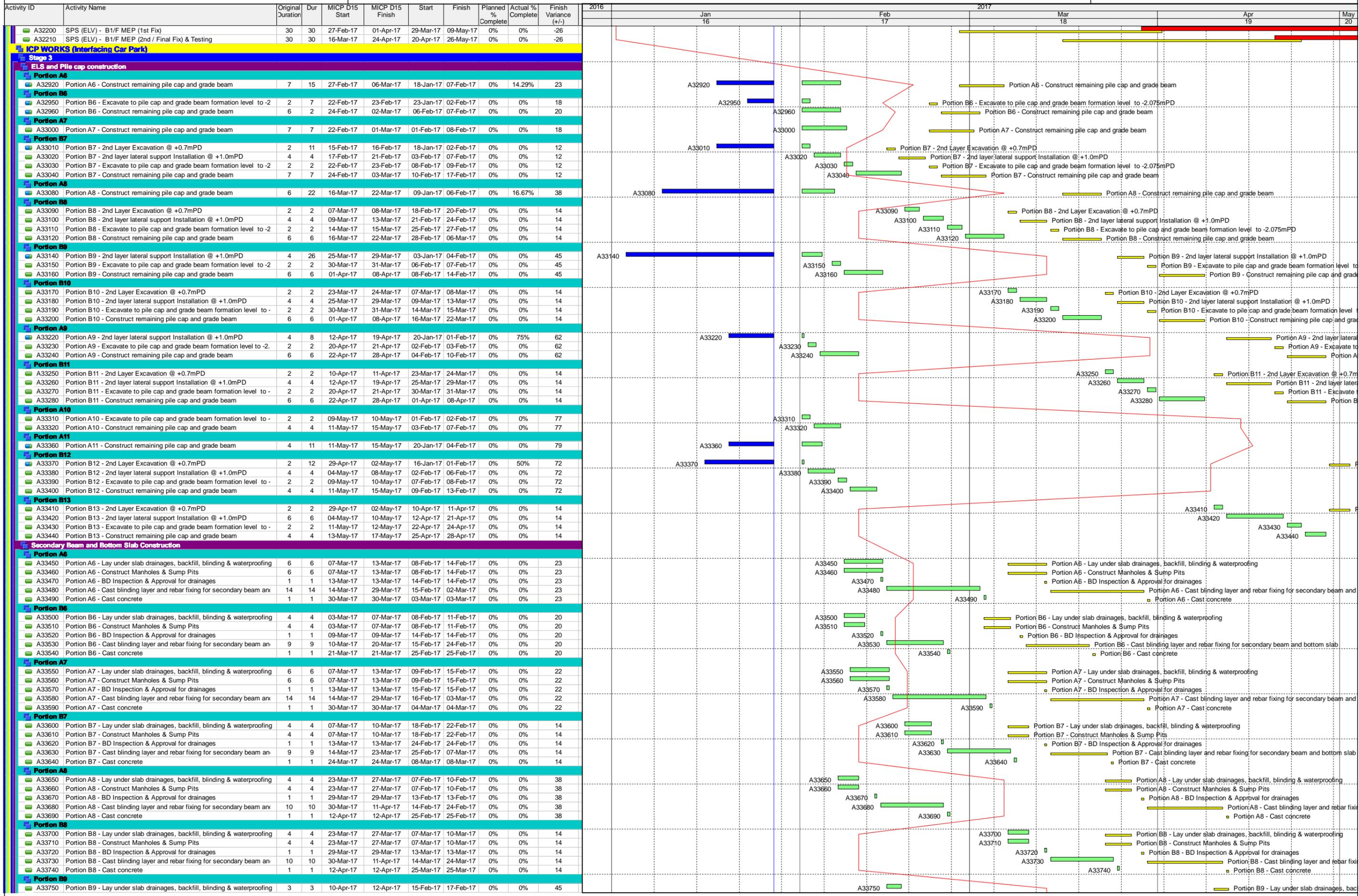
# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	M1CP D15 Start	M1CP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017						
											Jan 16	Feb 17	Mar 18	Apr 19	May 20		
A19970	Submission of Embeds survey report (G/F to 1/F)	7	7	28-Mar-17	04-Apr-17	18-Apr-17	25-Apr-17	0%	0%	-18							
A19980	Preparation of Remedial Method (G/F to 1/F)	14	14	05-Apr-17	20-Apr-17	26-Apr-17	11-May-17	0%	0%	-18							
<b>RDE Super-Structure RC Works</b>																	
<b>RDE Building</b>																	
<b>RDE Structure @ Portion - U (G/F to 15M/F)</b>																	
<b>Block A Grid Lines G' to J' / 1' to 8'</b>																	
A50830	Commence RDE Structure (Block-A) From G/F to 15M/F	0	0	02-Mar-17		24-Mar-17		0%	0%	-19							
A50840	RDE - Walls, Columns & 1/F Slab	24	24	02-Mar-17	29-Mar-17	25-Mar-17	26-Apr-17	0%	0%	-20							
<b>RDE Building FACADE Preliminaries</b>																	
<b>SCHEMATIC DRAWINGS</b>																	
<b>SCHEMATIC DRAWING SUBMISSION - by Redland</b>																	
A53290	1st Schematic Drawing for PreCast Tubes, Columns and Roof Panel (F)	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53300	1st Schematic Drawing for PreCast Tubes, Columns and Roof Panel (F)	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53310	2nd Schematic Drawing for PreCast Tubes, Columns and Roof Panel (F)	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53320	2nd Schematic Drawing for PreCast Tubes, Columns and Roof Panel (F)	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
<b>SCHEMATIC DRAWING SUBMISSION - by PISA</b>																	
A53330	1st Schematic Drawing for Window Wall, Façade Window, Louvre and	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53340	1st Schematic Drawing for Window Wall, Façade Window, Louvre and	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53350	2nd Schematic Drawing for Window Wall, Façade Window, Louvre and	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53360	2nd Schematic Drawing for Window Wall, Façade Window, Louvre and	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
A53370	1st Schematic Drawing for Window Wall & Louvre at 2F to 14F	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53380	1st Schematic Drawing for Window Wall & Louvre at 2F to 14F - Review	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53390	2nd Schematic Drawing for Window Wall & Louvre at 2F to 14F	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53400	2nd Schematic Drawing for Window Wall & Louvre at 2F to 14F - Review	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
A53410	1st Schematic Drawing for Window Wall & Louvre at 15F to RF	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53420	1st Schematic Drawing for Window Wall & Louvre at 15F to RF - Review	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53430	2nd Schematic Drawing for Window Wall & Louvre at 15F to RF	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53440	2nd Schematic Drawing for Window Wall & Louvre at 15F to RF - Review	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
<b>SHOP DRAWINGS + DESIGN CALCULATION</b>																	
<b>SHOPDRAWING + DESIGN CALCULATION - by Redland</b>																	
A53450	1st Shopdrawing for PreCast Tubes, Columns and Roof Panel (FC-PC)	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53460	1st Shopdrawing for PreCast Tubes, Columns and Roof Panel (FC-PC)	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53470	2nd Shopdrawing for PreCast Tubes, Columns and Roof Panel (FC-PC)	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53480	2nd Shopdrawing for PreCast Tubes, Columns and Roof Panel (FC-PC)	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
A53490	3rd Shopdrawing for PreCast Tubes, Columns and Roof Panel (FC-PC)	14	14	11-Feb-17	24-Feb-17	25-Mar-17	07-Apr-17	0%	0%	-42							
A53500	3rd Shopdrawing for PreCast Tubes, Columns and Roof Panel (FC-PC)	14	14	25-Feb-17	10-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-42							
<b>SHOPDRAWING + DESIGN CALCULATION - by PISA</b>																	
A53510	1st Shopdrawing Cast-in Embed for Window Wall, Façade Window, Lo	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53520	1st Shopdrawing Cast-in Embed for Window Wall, Façade Window, Lo	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53530	2nd Shopdrawing Cast-in Embed for Window Wall, Façade Window, Lo	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53540	2nd Shopdrawing Cast-in Embed for Window Wall, Façade Window, Lo	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
A53550	3rd Shopdrawing Cast-in Embed for Window Wall, Façade Window, Lo	14	14	11-Feb-17	24-Feb-17	25-Mar-17	07-Apr-17	0%	0%	-42							
A53560	3rd Shopdrawing Cast-in Embed for Window Wall, Façade Window, Lo	14	14	25-Feb-17	10-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-42							
A53570	1st Shopdrawing Cast-in Embed for Window Wall & Louver at 2F to 14F	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53580	1st Shopdrawing Cast-in Embed for Window Wall & Louver at 2F to 14F	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53590	2nd Shopdrawing Cast-in Embed for Window Wall & Louver at 2F to 14F	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53600	2nd Shopdrawing Cast-in Embed for Window Wall & Louver at 2F to 14F	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
A53610	3rd Shopdrawing Cast-in Embed for Window Wall & Louver at 2F to 14F	14	14	11-Feb-17	24-Feb-17	25-Mar-17	07-Apr-17	0%	0%	-42							
A53620	3rd Shopdrawing Cast-in Embed for Window Wall & Louver at 2F to 14F	14	14	25-Feb-17	10-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-42							
A53630	1st Shopdrawing Cast-in Embed for Window Wall & Louver at 15F to RF	14	14	02-Jan-17	15-Jan-17	28-Jan-17	10-Feb-17	100%	0%	-26							
A53640	1st Shopdrawing Cast-in Embed for Window Wall & Louver at 15F to RF	14	14	16-Jan-17	29-Jan-17	11-Feb-17	24-Feb-17	85.71%	0%	-26							
A53650	2nd Shopdrawing Cast-in Embed for Window Wall & Louver at 15F to RF	14	14	30-Jan-17	12-Feb-17	25-Feb-17	10-Mar-17	0%	0%	-26							
A53660	2nd Shopdrawing Cast-in Embed for Window Wall & Louver at 15F to RF	14	14	13-Feb-17	26-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-26							
A53670	3rd Shopdrawing Cast-in Embed for Window Wall & Louver at 15F to RF	14	14	27-Feb-17	12-Mar-17	25-Mar-17	07-Apr-17	0%	0%	-26							
A53680	3rd Shopdrawing Cast-in Embed for Window Wall & Louver at 15F to RF	14	14	13-Mar-17	26-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-26							
A53690	1st Shopdrawing for Window Wall, Façade Window, Louver and operab	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42							
A53700	1st Shopdrawing for Window Wall, Façade Window, Louver and operab	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42							
A53710	2nd Shopdrawing for Window Wall, Façade Window, Louver and operab	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42							
A53720	2nd Shopdrawing for Window Wall, Façade Window, Louver and operab	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42							
A53730	3rd Shopdrawing for Window Wall, Façade Window, Louver and operab	14	14	11-Feb-17	24-Feb-17	25-Mar-17	07-Apr-17	0%	0%	-42							
A53740	3rd Shopdrawing for Window Wall, Façade Window, Louver and operab	14	14	25-Feb-17	10-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-42							
A53750	1st Shopdrawing for Window Wall & Louver at 2F to 14F	14	14	28-Dec-16	10-Jan-17	28-Jan-17	10-Feb-17	100%	0%	-31							
A53760	1st Shopdrawing for Window Wall & Louver at 2F to 14F - Review & A	14	14	11-Jan-17	24-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-31							
A53770	2nd Shopdrawing for Window Wall & Louver at 2F to 14F	14	14	25-Jan-17	07-Feb-17	10-Mar-17	21-Apr-17	21.43%	0%	-31							
A53780	2nd Shopdrawing for Window Wall & Louver at 2F to 14F - Review & A	14	14	08-Feb-17	21-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-31							
A53790	3rd Shopdrawing for Window Wall & Louver at 2F to 14F	14	14	22-Feb-17	07-Mar-17	25-Mar-17	07-Apr-17	0%	0%	-31							
A53800	3rd Shopdrawing for Window Wall & Louver at 2F to 14F - Review & A	14	14	08-Mar-17	21-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-31							
A53810	1st Shopdrawing for Window Wall & Louver at 15F to RF	14	14	21-Jan-17	03-Feb-17	28-Jan-17	10-Feb-17	50%	0%	-7							
A53820	1st Shopdrawing for Window Wall & Louver at 15F to RF - Review & A	14	14	04-Feb-17	17-Feb-17	11-Feb-17	24-Feb-17	0%	0%	-7							
A53830	2nd Shopdrawing for Window Wall & Louver at 15F to RF	14	14	18-Feb-17	03-Mar-17	25-Feb-17	10-Mar-17	0%	0%	-7							
A53840	2nd Shopdrawing for Window Wall & Louver at 15F to RF - Review & A	14	14	04-Mar-17	17-Mar-17	11-Mar-17	24-Mar-17	0%	0%	-7							
A53850	3rd Shopdrawing for Window Wall & Louver at 15F to RF	14	14	18-Mar-17	31-Mar-17	25-Mar-17	07-Apr-17	0%	0%	-7							
A53860	3rd Shopdrawing for Window Wall & Louver at 15F to RF - Review & A	14	14	01-Apr-17	14-Apr-17	08-Apr-17	21-Apr-17	0%	0%	-7							
<b>PERFORMANCE MOCK UP TEST</b>																	
<b>PERFORMANCE MOCK UP TEST - by PISA</b>																	
A53870	1st Performance Mock Up Test Design Submission of Window Wall (F)	14	14	19-Dec-16	01-Jan-17	28-Jan-17	10-Feb-17	100%	0%	-40							
A53880	1st Performance Mock Up Test Design Submission of Window Wall (F)	14	14	02-Jan-17	15-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-40							
A53890	2nd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	16-Jan-17	29-Jan-17	25-Feb-17	10-Mar-17	85.71%	0%	-40							
A53900	2nd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	30-Jan-17	12-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-40							
A53910	3rd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	13-Feb-17	26-Feb-17	25-Mar-17	07-Apr-17	0%	0%	-40							
A53920	3rd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	27-Feb-17	12-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-40							
A53930	1st Performance Mock Up Test Design Submission of Window Wall (F)	14	14	31-Jan-17	13-Feb-17	31-Jan-17	13-Feb-17	0%	0%	0							
A53940	1st Performance Mock Up Test Design Submission of Window Wall (F)	14	14	14-Feb-17	27-Feb-17	14-Feb-17	27-Feb-17	0%	0%	0							
A53950	2nd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	28-Feb-17	13-Mar-17	28-Feb-17	13-Mar-17	0%	0%	0							
A53960	2nd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	14-Mar-17	27-Mar-17	14-Mar-17	27-Mar-17	0%	0%	0							
A53970	3rd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	28-Mar-17	10-Apr-17	28-Mar-17	10-Apr-17	0%	0%	0							
A53980	3rd Performance Mock Up Test Design Submission of Window Wall (F)	14	14	11-Apr-17	24-Apr-17	11-Apr-17	24-Apr-17	0%	0%	0							
A53990	1st Performance Mock Up Test Design Submission of Window Wall (F)	14	14	04-Feb-17	17-Feb-17	14-Feb-17	17-Feb-1										

# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	MICP D15 Start	MICP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017					
											Jan 16	Feb 17	Mar 18	Apr 19	May 20	
A54060	1st BD submission for PreCast Tubes, Columns and Roof Panel (FC-F)	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42						
A54070	2nd BD Submission for PreCast Tubes, Columns and Roof Panel (FC-F)	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42						
A54080	2nd BD Submission for PreCast Tubes, Columns and Roof Panel (FC-F)	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42						
<b>BD DRAWING + DESIGN CALCULATION - by PISA</b>																
A54090	1st BD Submission Cast-in Embed for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	17-Dec-16	30-Dec-16	28-Jan-17	10-Feb-17	100%	0%	-42						
A54100	1st BD Submission Cast-in Embed for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	31-Dec-16	13-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-42						
A54110	2nd BD Submission Cast-in Embed for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	14-Jan-17	27-Jan-17	25-Feb-17	10-Mar-17	100%	0%	-42						
A54120	2nd BD Submission Cast-in Embed for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	28-Jan-17	10-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-42						
A54130	3rd BD Submission Cast-in Embed for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	11-Feb-17	24-Feb-17	25-Mar-17	07-Apr-17	0%	0%	-42						
A54140	3rd BD Submission Cast-in Embed for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	25-Feb-17	10-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-42						
A54150	1st BD Submission Cast-in Embed for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	28-Dec-16	10-Jan-17	28-Jan-17	10-Feb-17	100%	0%	-31						
A54160	1st BD Submission Cast-in Embed for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	11-Jan-17	24-Jan-17	11-Feb-17	24-Feb-17	100%	0%	-31						
A54170	2nd BD Submission Cast-in Embed for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	25-Jan-17	07-Feb-17	25-Feb-17	10-Mar-17	21.43%	0%	-31						
A54180	2nd BD Submission Cast-in Embed for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	08-Feb-17	21-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-31						
A54190	3rd BD Submission Cast-in Embed for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	22-Feb-17	07-Mar-17	25-Mar-17	07-Apr-17	0%	0%	-31						
A54200	3rd BD Submission Cast-in Embed for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	08-Mar-17	21-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-31						
A54210	1st BD Submission Cast-in Embed for Window Wall & Louver at 15F to RF - Review & Approval	14	14	31-Jan-17	13-Feb-17	31-Jan-17	13-Feb-17	0%	0%	0						
A54220	1st BD Submission Cast-in Embed for Window Wall & Louver at 15F to RF - Review & Approval	14	14	14-Feb-17	27-Feb-17	14-Feb-17	27-Feb-17	0%	0%	0						
A54230	2nd BD Submission Cast-in Embed for Window Wall & Louver at 15F to RF - Review & Approval	14	14	28-Feb-17	13-Mar-17	28-Feb-17	13-Mar-17	0%	0%	0						
A54240	2nd BD Submission Cast-in Embed for Window Wall & Louver at 15F to RF - Review & Approval	14	14	14-Mar-17	27-Mar-17	14-Mar-17	27-Mar-17	0%	0%	0						
A54250	3rd BD Submission Cast-in Embed for Window Wall & Louver at 15F to RF - Review & Approval	14	14	28-Mar-17	10-Apr-17	28-Mar-17	10-Apr-17	0%	0%	0						
A54260	3rd BD Submission Cast-in Embed for Window Wall & Louver at 15F to RF - Review & Approval	14	14	11-Apr-17	24-Apr-17	11-Apr-17	24-Apr-17	0%	0%	0						
A54270	1st BD Submission for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	03-Jan-17	16-Jan-17	28-Jan-17	10-Feb-17	100%	0%	-25						
A54280	1st BD Submission for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	17-Jan-17	30-Jan-17	11-Feb-17	24-Feb-17	78.57%	0%	-25						
A54290	2nd BD Submission for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	31-Jan-17	13-Feb-17	25-Feb-17	10-Mar-17	0%	0%	-25						
A54300	2nd BD Submission for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	14-Feb-17	27-Feb-17	11-Mar-17	24-Mar-17	0%	0%	-25						
A54310	3rd BD Submission for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	28-Feb-17	13-Mar-17	25-Mar-17	07-Apr-17	0%	0%	-25						
A54320	3rd BD Submission for Window Wall, Facade Window, Louver and operable panel at GF to 1F - Review & Approval	14	14	14-Mar-17	27-Mar-17	08-Apr-17	21-Apr-17	0%	0%	-25						
A54330	1st BD Submission for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	25-Feb-17	10-Mar-17	25-Feb-17	10-Mar-17	0%	0%	0						
A54340	1st BD Submission for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	11-Mar-17	24-Mar-17	11-Mar-17	24-Mar-17	0%	0%	0						
A54350	2nd BD Submission for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	25-Mar-17	07-Apr-17	25-Mar-17	07-Apr-17	0%	0%	0						
A54360	2nd BD Submission for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	08-Apr-17	21-Apr-17	08-Apr-17	21-Apr-17	0%	0%	0						
A54370	3rd BD Submission for Window Wall & Louver at 2F to 14F - Review & Approval	14	14	22-Apr-17	05-May-17	22-Apr-17	05-May-17	0%	0%	0						
A54390	1st BD Submission for Window Wall & Louver at 15F to RF - Review & Approval	14	14	15-Mar-17	28-Mar-17	15-Mar-17	28-Mar-17	0%	0%	0						
A54400	1st BD Submission for Window Wall & Louver at 15F to RF - Review & Approval	14	14	29-Mar-17	11-Apr-17	29-Mar-17	11-Apr-17	0%	0%	0						
A54410	2nd BD Submission for Window Wall & Louver at 15F to RF - Review & Approval	14	14	12-Apr-17	25-Apr-17	12-Apr-17	25-Apr-17	0%	0%	0						
A54420	2nd BD Submission for Window Wall & Louver at 15F to RF - Review & Approval	14	14	26-Apr-17	09-May-17	26-Apr-17	09-May-17	0%	0%	0						
<b>ICP &amp; SPS Construction</b>																
<b>Key Dates</b>																
A31570	SPS Structure Complete	0	0		15-Mar-17		19-Apr-17	0%	0%	-26						
<b>SPS WORKS (Sewerage Pumping Station)</b>																
<b>RC Structures</b>																
<b>Portion E2 - Pump Station B2/F &amp; B1/F</b>																
A37880	SPS - Construct Walls & Cols (B1/F to G/F) @ Lvl +10.00mPD	12	12	16-Jan-17	01-Feb-17	01-Feb-17	14-Feb-17	91.67%	0%	-11						
A37890	SPS - Erect falseworks for Roof Slab	3	3	02-Feb-17	04-Feb-17	15-Feb-17	17-Feb-17	0%	0%	-11						
A37950	SPS - Construct Roof Beam & Slab	10	10	06-Feb-17	16-Feb-17	18-Feb-17	01-Mar-17	0%	0%	-11						
A37960	SPS - Dismantle Falseworks & Clean area Below Roof Slab	4	4	24-Feb-17	28-Feb-17	09-Mar-17	13-Mar-17	0%	0%	-11						
A37970	SPS - Complete E2 Structure to G/F Level +10.00mPD	0	0		28-Feb-17		13-Mar-17	0%	0%	-11						
<b>Portion E1 - Plant Room B1/F</b>																
A31790	SPS - Construct Walls & Cols From (B1/F to G/F) @ Lvl +10.00mPD	20	20	28-Dec-16	20-Jan-17	01-Feb-17	23-Feb-17	100%	0%	-26						
A31800	SPS - Construct Staircase @ GL 3-5 / A1-A2	6	6	14-Jan-17	20-Jan-17	17-Feb-17	23-Feb-17	100%	0%	-26						
A31810	SPS - Erect falseworks for Roof Slab	3	3	21-Jan-17	24-Jan-17	24-Feb-17	27-Feb-17	100%	0%	-26						
A31820	SPS - Construct Roof Beam & Slab	15	15	25-Jan-17	14-Feb-17	28-Feb-17	16-Mar-17	20%	0%	-26						
A31830	SPS - Construct Concrete Vent Duct Above Roof Slab	17	17	15-Feb-17	06-Mar-17	17-Mar-17	06-Apr-17	0%	0%	-26						
A31840	SPS - Dismantle Falseworks & Clean area Below Roof Slab	4	4	22-Feb-17	25-Feb-17	24-Mar-17	28-Mar-17	0%	0%	-26						
A31850	SPS - Construct Sprinkler Tank and FS Water Tank	15	15	27-Feb-17	15-Mar-17	29-Mar-17	19-Apr-17	0%	0%	-26						
A31860	SPS - Complete Structure	0	0		15-Mar-17		19-Apr-17	0%	0%	-26						
A31870	SPS - Complete Internal FS Tank & Give Access to PIW Contractor's	0	0		16-Mar-17		20-Apr-17	0%	0%	-26						
<b>SPS - ABWF Works</b>																
<b>Pump Station</b>																
A37980	Pump Station - Ceiling / Wall Plastering (Wet Trades)	30	30	27-Feb-17	01-Apr-17	11-Mar-17	19-Apr-17	0%	0%	-11						
A37990	Pump Station - Ceiling & Wall Painting	27	27	16-Mar-17	20-Apr-17	29-Mar-17	05-May-17	0%	0%	-11						
A38000	Pump Station - Install doors, grated drains, & Misc. Items	18	18	27-Mar-17	20-Apr-17	10-Apr-17	05-May-17	0%	0%	-11						
<b>General Area</b>																
A31880	Ceiling / Wall Plastering (Wet Trades)	30	30	27-Feb-17	01-Apr-17	29-Mar-17	09-May-17	0%	0%	-26						
A31890	Ceiling & Wall Painting	30	30	16-Mar-17	24-Apr-17	20-Apr-17	26-May-17	0%	0%	-26						
<b>CLP Meter Cabinet Room</b>																
A31920	CLP Cabinet Room - Ceiling & Wall Plastering (Wet Trades)	7	7	27-Feb-17	06-Mar-17	29-Mar-17	06-Apr-17	0%	0%	-26						
A31930	CLP Cabinet Room - Ceiling & Wall Painting	3	3	07-Mar-17	09-Mar-17	07-Apr-17	10-Apr-17	0%	0%	-26						
A31940	CLP Cabinet Room - Install doors, grated drains, & Misc. Items	7	7	22-Mar-17	29-Mar-17	26-Apr-17	05-May-17	0%	0%	-26						
A31950	CLP Cabinet Room - Floor Fitout	3	3	10-Mar-17	13-Mar-17	11-Apr-17	13-Apr-17	0%	0%	-26						
<b>SPS - Building Services</b>																
<b>Electrical Works</b>																
<b>CLP Meter and Power-On</b>																
A31960	Install CLP Electrical Meter Cabinet	7	7	14-Mar-17	21-Mar-17	18-Apr-17	25-Apr-17	0%	0%	-26						
A31970	Inspection for Handover to CLP	7	7	22-Mar-17	29-Mar-17	26-Apr-17	05-May-17	0%	0%	-26						
<b>Interface Lead-In Cables From PIW</b>																
A32000	Interface Lead-In Cable Laying From PIW and Backfill	21	21	17-Mar-17	11-Apr-17	21-Apr-17	17-May-17	0%	0%	-26						
<b>LV Switchboard</b>																
A32050	LV Switch room - Install Equipment & BS Works	12	12	16-Mar-17	29-Mar-17	20-Apr-17	05-May-17	0%	0%	-26						
<b>Electrical General Works</b>																
A32080	Electrical - Install MEP (1st/Fix)	30	30	16-Mar-17	24-Apr-17	20-Apr-17	26-May-17	0%	0%	-26						
<b>Mechanical Works</b>																
A32100	MVAC - Install MEP (1st/Fix)	30	30	27-Feb-17	01-Apr-17	29-Mar-17	09-May-17	0%	0%	-26						
A32110	MVAC - Install MEP (2nd/Final Fix) & Testing	30	30	16-Mar-17	24-Apr-17	20-Apr-17	26-May-17	0%	0%	-26						
<b>Storm Drain / Sewerage Pipes (Outside SPS)</b>																
A32130	Sewerage - Install 450 / 300 Drainage Pipes & Testing	31	21	09-Jan-17	16-Feb-17	09-Jan-17	04-Feb-17	54.84%	87.1%	10						
A32140	Sewerage - Install 2x200 dia Raising Main Pipes & Testing	31	25	09-Jan-17	16-Feb-17	09-Jan-17	09-Feb-17	54.84%	74.19%	6						
A32150	Sewerage - Final Connection to PIW Main Pipes	14	14	17-Feb-17	04-Mar-17	10-Feb-17	25-Feb-17	0%	0%	6						
<b>Plumbing and Drainage</b>																
A32160	SPS (P															

# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)









# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	MICP D15 Start	MICP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017									
											Jan 16	Feb 17	Mar 18	Apr 19	May 20					
A12420	Zone A2 - Complete B1F @ GL 4-5/A-C	0	0		19-Jan-17		27-Jan-17	100%	0%	-8										
<b>Sector C4 Access</b>																				
A12010	Zone A4 - Complete B1F @ GL 2-4/E-H	0	0		26-Apr-17		13-Mar-17	0%	0%	44										
A12460	Zone A1 - Complete B1F @ GL 2-4/C-E	0	0		01-Feb-17		22-Feb-17	0%	0%	-21										
A12470	Zone A2 - Complete B1F @ GL 4-5/C-E	0	0		19-Jan-17		27-Jan-17	100%	0%	-8										
<b>Sector A3 Access</b>																				
A12020	Zone E - Complete B1F @ GL 8-11/A-C	0	0		10-Feb-17		24-Feb-17	0%	0%	-14										
<b>Sector B2 Access</b>																				
A12080	Zone H - Complete B1F @ GL 11-14/K-M	0	0		24-Jan-17		03-Apr-17	100%	0%	-69										
<b>Sector D3 Access</b>																				
A12110	Zone A4 - Complete B1F @ GL 2-4/F-H	0	0		26-Apr-17		13-Mar-17	0%	0%	44										
<b>Sector F2 Access</b>																				
A12170	Zone GFT5 - Complete B1F @ GL 4-6/A-B	0	0		25-Mar-17		21-Apr-17	0%	0%	-27										
A12190	Zone GFT4 - Complete B1F @ GL 4-6/B-D	0	0		04-Mar-17		24-Mar-17	0%	0%	-20										
<b>Sector F4 Access</b>																				
A12220	Zone GFT5 - Complete B1F @ GL 3-5/A-B	0	0		25-Mar-17		21-Apr-17	0%	0%	-27										
A12230	Zone GFT4 - Complete B1F @ GL 2-6/B-D	0	0		29-Mar-17		22-Apr-17	0%	0%	-24										
<b>Sector G1 Access</b>																				
A12240	Zone GFT3 - Complete B1F @ GL 5-6/D-G	0	0		25-Feb-17		23-Mar-17	0%	0%	-26										
A12250	Zone GFT2 - Complete B1F @ GL 4-5/D-F	0	0		18-Mar-17		06-Apr-17	0%	0%	-19										
<b>Sector G2 Access</b>																				
A12280	Zone GFU2 - Complete B1F @ GL 4-6/I-J	0	0		27-Feb-17		28-Mar-17	0%	0%	-29										
A12300	Zone GFR1 - Complete B1F @ GL 5-1/I-J	0	0		06-Apr-17		18-Apr-17	0%	0%	-12										
<b>Sector G3 Access</b>																				
A12320	Zone GFT1 - Complete B1F @ GL 1-3/D-F	0	0		29-Mar-17		10-Apr-17	0%	0%	-12										
A12330	Zone GFT2 - Complete B1F @ GL 3-5/D-F	0	0		18-Mar-17		06-Apr-17	0%	0%	-19										
A12340	Zone GFU3 - Complete B1F @ GL 1-3/F-H	0	0		25-Mar-17		21-Apr-17	0%	0%	-27										
<b>Sector G4 Access</b>																				
A12370	Zone GFU1 - Complete B1F @ GL 1-4/H-J	0	0		25-Mar-17		21-Apr-17	0%	0%	-27										
A12380	Zone GFU2 - Complete B1F @ GL 4/I-J	0	0		27-Feb-17		28-Mar-17	0%	0%	-29										
A12700	Zone GFU3 - Complete B1F @ GL 1-3/F-H	0	0		25-Mar-17		21-Apr-17	0%	0%	-27										
<b>GF-1F Access</b>																				
<b>Sector C1 Access</b>																				
A12720	Zone M - Complete GF @ GL 7-8/A-C	0	0		16-Feb-17		18-Feb-17	0%	0%	-2										
A12730	Zone A2 - Complete GF @ GL 4-6/A-C	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
A12740	Zone A3 - Complete GF @ GL 5-7/A-C	0	0		02-Feb-17		07-Mar-17	0%	0%	-33										
A12750	Zone E - Complete GF @ GL 8-9/A-C	0	0		21-Mar-17		07-Mar-17	0%	0%	-14										
<b>Sector C2 Access</b>																				
A12770	Zone M - Complete GF @ GL 7-8/C-D	0	0		16-Feb-17		18-Feb-17	0%	0%	-2										
A12780	Zone A2 - Complete GF @ GL 4-5/C-E	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
A12790	Zone A3 - Complete GF @ GL 5-7/C-E	0	0		02-Feb-17		07-Mar-17	0%	0%	-33										
<b>Sector C3 Access</b>																				
A12830	Zone A1 - Complete GF @ GL 2-4/A-C	0	0		25-Feb-17		18-Mar-17	0%	0%	-21										
A12840	Zone A2 - Complete GF @ GL 4-5/A-C	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
<b>Sector C4 Access</b>																				
A12860	Zone A1 - Complete GF @ GL 2-4/C-E	0	0		25-Feb-17		18-Mar-17	0%	0%	-21										
A12870	Zone A2 - Complete GF @ GL 4-5/C-E	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
A12880	Zone A4 - Complete GF @ GL 2-4/E-H	0	0		23-May-17		07-Apr-17	0%	0%	46										
<b>Sector A3 Access</b>																				
A12920	Zone E - Complete GF @ GL 8-11/A-C	0	0		07-Mar-17		21-Mar-17	0%	0%	-14										
<b>Sector B2 Access</b>																				
A13010	Zone H - Complete GF @ GL 11-14/K-M	0	0		13-Feb-17		24-Apr-17	0%	0%	-70										
<b>Sector D3 Access</b>																				
A13140	Zone A4 - Complete GF @ GL 2-4/F-H	0	0		23-May-17		07-Apr-17	0%	0%	46										
<b>1F-1MF Access</b>																				
<b>Sector C1 Access</b>																				
A13290	Zone M - Complete 1F @ GL 7-8/A-C	0	0		01-Mar-17		03-Mar-17	0%	0%	-2										
A13300	Zone A2 - Complete 1F @ GL 4-6/A-C	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
A13310	Zone A3 - Complete 1F @ GL 5-7/A-C	0	0		02-Feb-17		07-Mar-17	0%	0%	-33										
<b>Sector C2 Access</b>																				
A13340	Zone M - Complete 1F @ GL 7-8/C-D	0	0		01-Mar-17		03-Mar-17	0%	0%	-2										
A13350	Zone A2 - Complete 1F @ GL 4-5/C-E	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
A13360	Zone A3 - Complete 1F @ GL 5-7/C-E	0	0		02-Feb-17		07-Mar-17	0%	0%	-33										
<b>Sector C3 Access</b>																				
A13410	Zone A1 - Complete 1F @ GL 2-4/A-C	0	0		25-Feb-17		18-Mar-17	0%	0%	-21										
A13420	Zone A2 - Complete 1F @ GL 4-5/A-C	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
<b>Sector C4 Access</b>																				
A13440	Zone A1 - Complete 1F @ GL 2-4/C-E	0	0		25-Feb-17		18-Mar-17	0%	0%	-21										
A13450	Zone A2 - Complete 1F @ GL 4-5/C-E	0	0		16-Feb-17		07-Mar-17	0%	0%	-19										
A13460	Zone A4 - Complete 1F @ GL 2-4/E-H	0	0		23-May-17		07-Apr-17	0%	0%	46										
<b>Sector D3 Access</b>																				
A13720	Zone A4 - Complete 1F @ GL 2-4/F-H	0	0		23-May-17		07-Apr-17	0%	0%	46										
<b>1MF-2F Access</b>																				
<b>Sector C1 Access</b>																				
A13800	Zone M - Complete 1MF @ GL 7-8/A-C	0	0		25-Mar-17		28-Mar-17	0%	0%	-3										
A13810	Zone A2 - Complete 1MF @ GL 4-6/A-C	0	0		13-Mar-17		31-Mar-17	0%	0%	-18										
A13830	Zone A3 - Complete 1MF @ GL 5-7/A-C	0	0		27-Feb-17		31-Mar-17	0%	0%	-32										
A13840	Zone E - Complete 1MF @ GL 8-9/A-C	0	0		31-Mar-17		19-Apr-17	0%	0%	-19										
<b>Sector C2 Access</b>																				
A13850	Zone M - Complete 1MF @ GL 7-8/C-D	0	0		25-Mar-17		28-Mar-17	0%	0%	-3										
A13860	Zone A2 - Complete 1MF @ GL 4-5/C-E	0	0		13-Mar-17		31-Mar-17	0%	0%	-18										
A13870	Zone A3 - Complete 1MF @ GL 5-7/C-E	0	0		27-Feb-17		31-Mar-17	0%	0%	-32										
<b>Sector C3 Access</b>																				
A13930	Zone A1 - Complete 1MF @ GL 2-4/A-C	0	0		22-Mar-17		13-Apr-17	0%	0%	-22										
A13940	Zone A2 - Complete 1MF @ GL 4-5/A-C	0	0		13-Mar-17		31-Mar-17	0%	0%	-18										
<b>Sector C4 Access</b>																				
A13950	Zone A1 - Complete 1MF @ GL 2-4/C-E	0	0		22-Mar-17		13-Apr-17	0%	0%	-22										
A13960	Zone A2 - Complete 1MF @ GL 4-5/C-E	0	0		13-Mar-17		31-Mar-17	0%	0%	-18										
<b>Sector A3 Access</b>																				
A14020	Zone E - Complete 1MF @ GL 8-11/A-C	0	0		31-Mar-17		19-Apr-17	0%	0%	-19										
<b>2F-3F Access (Incl. Podium Roof)</b>																				
<b>Sector C1 Access</b>																				
A14310	Zone M - Complete 2F @ GL 7-8/A-C	0	0		24-Apr-17		26-Apr-17	0%	0%	-2										
<b>Sector C2 Access</b>																				
A14350	Zone M - Complete 2F @ GL 7-8/C-D	0	0		24-Apr-17		26-Apr-17	0%	0%	-2										

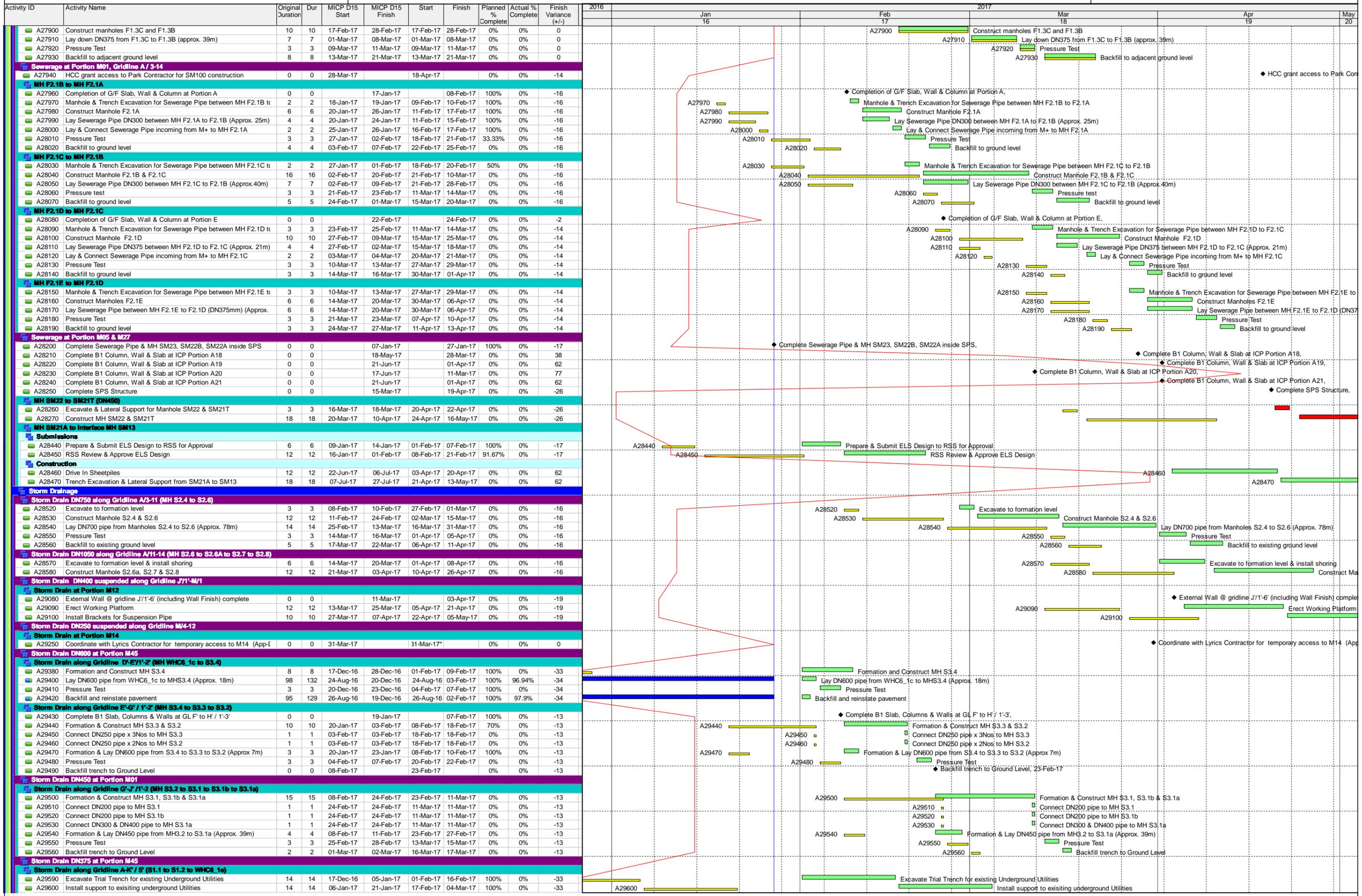
Key Milestone Date

# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	M1CP D15 Start	M1CP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017									
											Jan 16	Feb 17	Mar 18	Apr 19	May 20					
A20260	Instruction issuance - commencement of works for M+ Podium ABWF	0	0	17-Dec-16		29-Jan-17*		100%	0%	-39										
<b>Pre-construction Works</b>																				
A20290	Shop drawings Submission & Approval	210	249	02-Oct-16	12-May-17	02-Oct-16	21-Jun-17	54.29%	35.71%	-39										
A20300	Method Statement & ITP Submission & Approval	210	249	02-Oct-16	12-May-17	02-Oct-16	21-Jun-17	54.29%	35.71%	-39										
A20310	Materials Submission & Approval	210	249	02-Oct-16	12-May-17	02-Oct-16	21-Jun-17	54.29%	35.71%	-39										
<b>Long Lead Materials Procurement &amp; Delivery</b>																				
A20320	Long Lead Materials Procurement & Delivery Start	0	0	17-Dec-16		29-Jan-17		100%	0%	-39										
A20330	Others	270	270	06-Jan-17	15-Oct-17	29-Jan-17	07-Nov-17	8.15%	0%	-22										
<b>Interfacing - Take Over Zone Areas Access</b>																				
<b>M+ Basement</b>																				
<b>B2/F</b>																				
<b>First Access</b>																				
A20360	Sector B	0	0		17-Dec-16		29-Jan-17	100%	0%	-39										
A20370	Sector C	0	0		27-Jan-17		27-Jan-17	100%	0%	0										
A20380	Sector D	0	0		27-Jan-17		27-Jan-17	100%	0%	0										
A20390	Sector A	0	0		13-Jan-17		27-Jan-17	100%	0%	-14										
A20400	Sector G	0	0		13-Feb-17		25-Feb-17	0%	0%	-12										
A20410	Sector F	0	0		09-Mar-17		22-Mar-17	0%	0%	-13										
<b>B1/F</b>																				
A20470	Sector G	0	0		27-Feb-17		28-Mar-17	0%	0%	-29										
A20480	Sector F	0	0		25-Mar-17		21-Apr-17	0%	0%	-23										
<b>LG/F</b>																				
A20520	Sector G	0	0		27-Feb-17		28-Mar-17	0%	0%	-29										
A20530	Sector F	0	0		25-Mar-17		21-Apr-17	0%	0%	-23										
<b>M+ Podium</b>																				
<b>G/F</b>																				
A20550	Sector B	0	0		13-Feb-17		24-Apr-17	0%	0%	-66										
A20560	Sector C	0	0		23-May-17		07-Apr-17	0%	0%	41										
<b>1/F &amp; 1M/F</b>																				
A20590	Sector C	0	0		31-Mar-17		19-Apr-17	0%	0%	-15										
<b>3/F</b>																				
A20700	Sector A, B, C & D - External Area	0	0		16-Dec-16		27-Jan-17	100%	0%	-39										
<b>CSF</b>																				
<b>Structure Completion Preparation for Builders' Work Access</b>																				
A23720	G/F Curing & Falseworks Stripping	30	30	19-Mar-17	21-Apr-17	09-Apr-17	13-May-17	0%	0%	-20										
<b>ABWF Works Summary</b>																				
<b>M+ Basement ABWF &amp; Building Services</b>																				
<b>Builders' Works</b>																				
<b>B2/F</b>																				
A23240	B2/F Sector C Builder's Works	60	60	29-Jan-17	31-Mar-17	29-Jan-17	31-Mar-17	0%	0%	0										
A23260	B2/F Sector B Builder's Works	60	60	17-Dec-16	20-Feb-17	29-Jan-17	31-Mar-17	65%	0%	-39										
A23270	B2/F Sector A Builder's Works	60	60	14-Jan-17	17-Mar-17	29-Jan-17	31-Mar-17	23.33%	0%	-14										
A23290	B2/F Sector D Builder's Works	60	60	29-Jan-17	31-Mar-17	29-Jan-17	31-Mar-17	0%	0%	0										
A24500	B2/F Sector F Builder's Works	60	60	10-Mar-17	14-May-17	23-Mar-17	27-May-17	0%	0%	-13										
<b>B1/F</b>																				
A24510	B1/F Sector G Builder's Works	60	60	28-Feb-17	04-May-17	29-Mar-17	03-Jun-17	0%	0%	-29										
A24520	B1/F Sector F Builder's Works	60	60	26-Mar-17	31-May-17	22-Apr-17	23-Jun-17	0%	0%	-23										
<b>Building Services Installation</b>																				
<b>B1/F</b>																				
A23490	B1/F Sector C Building Services (late access area)	40	40	17-Dec-16	29-Jan-17	29-Jan-17	11-Mar-17	97.5%	0%	-39										
<b>Lifts and Escalators</b>																				
<b>Podium</b>																				
<b>Freight Lift (LT17)</b>																				
LT10050	Start of Freight Lift Installation (podium weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10060	Freight Lift LT17 Installation Period	22	22	16-Dec-16	13-Jan-17	27-Jan-17	25-Feb-17	100%	0%	-34										
<b>Art Lifts (LT11 &amp; 13)</b>																				
LT10020	Start of Art Lift Installation (podium weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10030	Art Lifts LT11 & 13 Installation Period	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Passenger Lifts, with disabled access (LT15, 16, 19, 22 &amp; 23)</b>																				
LT10080	Start of Lift Installation (podium weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10090	Passenger Lifts LT 15, 16, 19, 22 & 23 Installation Period	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Passenger Lifts, FS (LT12, 14, 20 &amp; 21)</b>																				
LT10120	Start of Lift Installation (podium weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10130	Passenger Lifts LT12, 14, 20&21 Installation Period	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Escalators (A, B, C, D &amp; E)</b>																				
LT10140	Start of Escalators Installation (podium weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10150	Escalators A,B,C,D&E Installation Period	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Tower</b>																				
<b>Service Lifts (LT01 &amp; 02)</b>																				
LT10180	Commence LT01 & 02 Lift Installation (tower weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10190	Lift Installation Period (LT01 & 02)	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Staff Lifts (LT03 &amp; 04)</b>																				
LT10210	Start of Lift Installation (tower weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10220	Lift Installation Period (LT03 & 04)	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Public Lifts (LT05 to 08, 4nos, pit in B2/F)</b>																				
LT10240	Start of Lift Installation (tower weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10250	Lift Installation Period, LT05 & 06, LT05 - 08	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
LT10260	Earliest lift installation for LT07 & 08, if necessary	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10270	Lift Installation Period, LT07 & 08	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Public Lifts (LT09 &amp; 10, pit in GF)</b>																				
LT10290	Start of Lift Installation (tower weathertight + lead time)	0	0		16-Dec-16		27-Jan-17	100%	0%	-34										
LT10300	Lift Installation Period, LT09 & 10	44	44	16-Dec-16	11-Feb-17	27-Jan-17	23-Mar-17	77.27%	0%	-34										
<b>Co-ordinated External Works &amp; Utilities Services Installation</b>																				
<b>Interface Dates</b>																				
<b>Access Dates</b>																				
A24720	M12 - Lyric Interface North (2nd access) (30Nov16)	0	0	13-Jan-17		28-Jan-17*		100%	0%	-15										
A25000	M43 - At-grade Road Footpath at ICP / SPS Entrance Portal (from PIW)	0	0	15-Feb-17		15-Feb-17*		0%	0%	0										
A25010	M44 - At-grade Road Footpath at ICP / SPS Frontage (from PIW) (1Jun2016)	0	0	17-Dec-16		28-Jan-17		100%	0%	-42										
A25020	M45 - At-grade Road Footpath along M+ Basement (from PIW) (1Jun2016)	0	0	17-Dec-16		28-Jan-17		100%	0%	-42										
A25130	M70 - Arts Pavilion Area on M+ side of M+ / Park Interface (t.b.a.)	0	0	17-Dec-16		28-Jan-17		100%	0%	-42										
<b>Vacation Date</b>																				
A25840	M71 - Area Within Initial M+ Hoarding, but on Park Side of M+/Park Int	0	0		16-Dec-16		27-Jan-17*	100%	0%	-42										
<b>Interface Schedule (Appendix D1 - 16 December 2015)</b>																				
<b>Lyric Theatre Complex and Extended Basement (Lyric)</b>																				
<b>Along Interface North of AEL</b>																				
A25950	Complete excavation north of AEL for B2/F slab and vacate M12	0	0		16-Dec-16		27-Jan-17*	100%	0%	-33										



# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)



# Three Months Rolling Programme (3MRP) - 27 Jan 2017 (MTH16)

Activity ID	Activity Name	Original Duration	Dur	MICP D15 Start	MICP D15 Finish	Start	Finish	Planned % Complete	Actual % Complete	Finish Variance (+/-)	2017						
											Jan 16	Feb 17	Mar 18	Apr 19	May 20		
A29610	Excavate trench for DN375 and install shoring	50	83	03-Nov-16	03-Jan-17	03-Nov-16	14-Feb-17	100%	76%	-33							
A29620	Construct Manhole S1.1 & S1.2	41	74	07-Nov-16	23-Dec-16	07-Nov-16	07-Feb-17	100%	85.37%	-33							
A29630	Lay down DN375 pipe between WHC6_1e to S1.1 to S1.2 (Approx.55m)	40	73	12-Nov-16	30-Dec-16	12-Nov-16	11-Feb-17	100%	74.75%	-33							
A29640	Pressure Test	29	62	16-Nov-16	19-Dec-16	16-Nov-16	02-Feb-17	100%	92.98%	-34							
A29650	Backfill and reinstate pavement	24	57	22-Nov-16	19-Dec-16	22-Nov-16	02-Feb-17	100%	91.67%	-33							
<b>Storm Drain DN150 at Portion M04</b>																	
<b>Storm Drain for MH WHC6_1f</b>																	
A29660	PIW allow access to WHC6_1f for M+ connection	0	0	06-Jan-17		31-Feb-17*		100%	0%	-19							
A29670	Fence off work area for DN150 storm drain excavation	1	1	06-Jan-17	06-Jan-17	01-Feb-17	01-Feb-17	100%	0%	-19							
A29680	Excavate Trial Trench for existing Underground Utilities	14	14	06-Jan-17	21-Jan-17	01-Feb-17	16-Feb-17	100%	0%	-19							
A29690	Excavate trench for DN150 and install shoring	7	7	23-Jan-17	02-Feb-17	17-Feb-17	24-Feb-17	71.43%	0%	-19							
A29700	Lay down DN150 and connect to WHC6_1f (approx. 11m)	4	4	03-Feb-17	07-Feb-17	25-Feb-17	01-Mar-17	0%	0%	-19							
A29710	Backfill and reinstate pavement	3	3	08-Feb-17	10-Feb-17	02-Mar-17	04-Mar-17	0%	0%	-19							
<b>Storm Drain DN300 at Portion M44 (MH6_2a.1 to DM65)</b>																	
<b>Adjacent SPS to Center of At Grade Road</b>																	
A29720	Agreed with PIW dates for Pipe Laying	0	0		03-Jan-17		27-Jan-17*	100%	0%	-21							
A29730	Excavate trial trench for existing underground utilities	6	6	04-Jan-17	10-Jan-17	01-Feb-17	07-Feb-17	100%	0%	-21							
A29740	Drive In Sheet Piles	3	3	11-Jan-17	13-Jan-17	08-Feb-17	10-Feb-17	100%	0%	-21							
A29750	Excavate to invert level and install struts	6	6	14-Jan-17	20-Jan-17	11-Feb-17	17-Feb-17	100%	0%	-21							
A29760	Construct Manhole DM65	6	6	21-Jan-17	27-Jan-17	18-Feb-17	24-Feb-17	100%	0%	-21							
A29770	Laydown DN300 between DM65 to Center of at Grade Road (Approx. 12m)	3	3	21-Jan-17	24-Jan-17	18-Feb-17	21-Feb-17	100%	0%	-21							
A29780	Pressure Test	3	3	01-Feb-17	03-Feb-17	25-Feb-17	28-Feb-17	0%	0%	-21							
A29790	Backfill, Extract Sheet Piles and Reinstall Pavement	6	6	04-Feb-17	10-Feb-17	01-Mar-17	07-Mar-17	0%	0%	-21							
<b>Center of At Grade Road to MH 2a.1</b>																	
A38030	Excavate trial trench for existing underground utilities	6	6	13-Feb-17	18-Feb-17	08-Mar-17	14-Mar-17	0%	0%	-20							
A38040	Drive In Sheet Piles	3	3	20-Feb-17	22-Feb-17	15-Mar-17	17-Mar-17	0%	0%	-20							
A38050	Excavate to invert level and install struts	6	6	23-Feb-17	01-Mar-17	18-Mar-17	24-Mar-17	0%	0%	-20							
A38060	Laydown DN300 between MH6_2a.1 to Center of at Grade Road (Approx. 12m)	3	3	02-Mar-17	04-Mar-17	25-Mar-17	28-Mar-17	0%	0%	-20							
A38070	Pressure Test	3	3	06-Mar-17	08-Mar-17	29-Mar-17	31-Mar-17	0%	0%	-20							
A38080	Backfill, Extract Sheet Piles and Reinstall Pavement	6	6	09-Mar-17	15-Mar-17	01-Apr-17	08-Apr-17	0%	0%	-20							
A55050	Agreed with PIW dates for Pipe Laying	0	0		13-Feb-17		07-Mar-17*	0%	0%	-20							
<b>WSD</b>																	
<b>Water Main Works at Portion M01 (Refer to M+ MEP Programme)</b>																	
A29800	PIW Contractor Allow Access to Portion M45 to HCC (IS Appendix D1, item 36; 31 July16), 01-Feb-17*	0	0	17-Dec-16		31-Feb-17*		100%	0%	-33							
A29810	Complete Master Meter Room Structure B1 Slab, Wall & Column (Refer to MICP)	0	0		21-Mar-17		21-Mar-17*	0%	0%	0							
A29820	Remove existing hoarding fixed to Sheet pile	6	6	22-Mar-17	28-Mar-17	22-Mar-17	28-Mar-17	0%	0%	0							
A29830	Install a new hoarding with 500mm clearance from roadside	6	6	29-Mar-17	05-Apr-17	29-Mar-17	05-Apr-17	0%	0%	0							
A29840	Excavate Trench in footway to expose PIW watermain & Cut Down St	2	2	06-Apr-17	07-Apr-17	06-Apr-17	07-Apr-17	0%	0%	0							
A29850	Lay 2Nos of DN150 DI Fresh Water Pipe & 1 No of DN100 DI Salt Wat	5	5	08-Apr-17	13-Apr-17	08-Apr-17	13-Apr-17	0%	0%	0							
A29860	Pressure test (By PIW Contractor)	6	6	18-Apr-17	24-Apr-17	18-Apr-17	24-Apr-17	0%	0%	0							
A29870	Remove the Blank Flanges & Make Final Connection	2	2	25-Apr-17	26-Apr-17	25-Apr-17	26-Apr-17	0%	0%	0							
<b>SPS External - Grd Lvl - Watermain (Outside SPS) to PIW</b>																	
A30040	Complete SPS Structure & Give Access to Park Contractor	0	0		15-Mar-17		19-Apr-17	0%	0%	-26							
A30050	Excavation Across Main Road From SPS Site to PIW Main pipes	12	12	16-Mar-17	29-Mar-17	20-Apr-17	05-May-17	0%	0%	-26							
<b>Power</b>																	
<b>Power Cable 11kV at Footpath adjacent to Entrance Portal (Interface with PIW)</b>																	
A30260	Excavate trench in footway for the 11kV direct buried cables	15	15	01-Feb-17	17-Feb-17	31-Feb-17*	17-Feb-17	0%	0%	0							
A30270	Lay Lead-in Cable (by CLP) & Inspection	30	30	18-Feb-17	19-Mar-17	18-Feb-17	19-Mar-17	0%	0%	0							
A30280	Backfilling footway to adjacent ground level	3	3	20-Mar-17	22-Mar-17	20-Mar-17	22-Mar-17	0%	0%	0							
<b>Power Cable 11kV at Gridline A/ 1-3</b>																	
A30290	Complete Riser Room Structure at Adjacent to Transformer Room A	0	0	13-Feb-17		06-Mar-17		0%	0%	-18							
A30300	Construct 2600mm x 1500mm cable trench & Install Cable Ducts	5	5	13-Feb-17	17-Feb-17	06-Mar-17	10-Mar-17	0%	0%	-18							
A30310	Lay Lead-in Cable (by CLP) & connect to district-wide system	30	30	18-Feb-17	19-Mar-17	11-Mar-17	09-Apr-17	0%	0%	-21							
A30320	Backfilling	3	3	20-Mar-17	22-Mar-17	10-Apr-17	12-Apr-17	0%	0%	-17							
<b>Power Cable 11kV at Gridline A/ 3-14</b>																	
<b>Construction at Drawpit E1 to Drawpit E2</b>																	
A30330	Construct Drawpits E1 & E2	8	8	23-Mar-17	31-Mar-17	12-Apr-17	24-Apr-17	0%	0%	-16							
A30340	Construct Cable Tunnel from Drawpits E1 to E2 & Install Cable Ducts (	19	19	01-Apr-17	27-Apr-17	25-Apr-17	18-May-17	0%	0%	-16							
<b>Gas</b>																	
<b>Gas Main at Portion M01</b>																	
<b>Gas Main RDE connection along Gridline E' - F' / 1'</b>																	
A30700	Trial Trench for Underground Utilities	10	10	08-Feb-17	18-Feb-17	23-Feb-17	06-Mar-17	0%	0%	-13							
A30710	Install support for existing Underground Utilities	6	6	20-Feb-17	25-Feb-17	07-Mar-17	13-Mar-17	0%	0%	-13							
A30720	Excavate Trench for Main Gas 100mm and install shoring	8	8	27-Feb-17	07-Mar-17	22-Mar-17	02-Apr-17	0%	0%	-13							
A30730	Lay down Main Gas 100mm (by Towngas Specialist Contractor)	14	14	08-Mar-17	23-Mar-17	23-Mar-17	08-Apr-17	0%	0%	-13							
A30740	Backfill Trench to Ground Level	4	4	24-Mar-17	28-Mar-17	10-Apr-17	13-Apr-17	0%	0%	-13							
A30750	Testing and Inspection	5	5	29-Mar-17	03-Apr-17	18-Apr-17	22-Apr-17	0%	0%	-13							
<b>Fuel Tank</b>																	
A31200	Prepare & Submit Method Statement for Fuel Tank Construction to RS	18	18	14-Mar-17	03-Apr-17	07-Apr-17	02-May-17	0%	0%	-20							

# **Lyric Theatre Complex**





## **C. Action and Limit Levels for Construction Phase**

## Air Quality

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

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

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

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

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

## Noise

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

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

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

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

## Air Quality

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

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

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

**Event****Action**

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

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

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

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

## Landscape and Visual Impact

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

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

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

## E. Monitoring Schedule

# FEBRUARY 2017

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

# MARCH 2017

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

## F. Calibration Certifications

High-Volume TSP Sampler  
5-Point Calibration Record

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

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

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

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

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

Sampler Calibration Relationship

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

Checked by:   
 Magnum Fan

Date: 19/12/2016

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AM1(ICC)  
 Calibrated by : K.T.Ho  
 Date : 16/02/2017

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa) : 1021  
 Ta(K) : 290

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	10.2	3.250	1.577	59	60.04
2   13 holes	8.4	2.950	1.434	52	52.92
3   10 holes	6.2	2.534	1.237	44	44.78
4   7 holes	4.4	2.135	1.047	36	36.64
5   5 holes	2.6	1.641	0.812	26	26.46

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

Sampler Calibration Relationship

Slope(m): 43.452 Intercept(b): -8.903

Correlation Coefficient(r): 0.9997

Checked by:   
 Magnum Fan

Date: 18/02/2017

High-Volume TSP Sampler  
5-Point Calibration Record

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

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

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

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

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

Sampler Calibration Relationship

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

Checked by:   
 Magnum Fan

Date: 19/12/2016

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AM2A (Harbourside)  
 Calibrated by : K.T.Ho  
 Date : 16/02/2017

Sampler

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

Calibration Orifice and Standard Calibration Relationship

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

Standard Condition

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

Calibration Condition

Pa (hpa) : 1021  
 Ta(K) : 290

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.2	3.555	1.722	60	61.06
2   13 holes	9.2	3.087	1.499	52	52.92
3   10 holes	7.2	2.731	1.330	44	44.78
4   7 holes	4.6	2.183	1.070	34	34.60
5   5 holes	2.6	1.641	0.812	24	24.42

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

Sampler Calibration Relationship

Slope(m): 40.647      Intercept(b): -8.741      Correlation Coefficient(r): 0.9994

Checked by:   
 Magnum Fan

Date: 18/02/2017



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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

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

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

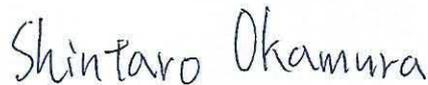
**CALIBRATION CERTIFICATE**

Date: December 21, 2016

Equipment Name	: Digital Dust Indicator, Model LD-3B
Code No.	: 080000-42
Quantity	: 1 unit
Serial No.	: 276020
Sensitivity	: 0.001 mg/m <sup>3</sup>
Sensitivity Adjustment	: 787CPM
Scale Setting	: December 16, 2016

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

Sincerely

**SIBATA SCIENTIFIC TECHNOLOGY LTD.**

---

Shintaro Okamura

Overseas Sales Division

# TEST CERTIFICATE

Report No. 16-1879-1.

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.



**SIBATA SCIENTIFIC TECHNOLOGY LTD.**  
DATE 19/ December /2016

APPROVE BY 	VERIFIED BY 	ISSUED BY 
----------------	-----------------	---------------

PRODUCT NAME	: Digital Dust Indicator
MODEL NUMBER	: LD-3B
SERIAL NUMBER	: 276020
CALIBRATION DATE	: 16- December -2016

Testing Category	Judging Standard	Judgment		
		Reading of Master	Reading of this Instrument	Correction
Function Test	Switch, Display, Wiring will normally function	OK		
Sensitivity Calibration	Count is $\pm 2\%$ accurate to the master by the standard calibration particle	799 CPM	795 CPM	-0.5 %
Dust Concentration Measuring	Count is $\pm 10\%$ accurate to the master under the 3 different concentration.	2053 CPM	1979 CPM	-3.6 %
		978 CPM	957 CPM	-2.1 %
Reproducibility	The difference between maximum and minimum value of sensitivity adjustment scale setting must be 5.0 % or less of maximum value. (The results of measurement of sensitivity adjustment in 5 times are within this range.)	516 CPM	507 CPM	-1.7 %
		OK		
Synthetic Judgment		Good		
		Reference Value(S)		
		787 CPM		
		Test atmosphere		
		Temperature	Humidity	
		23 °C	45 %	


**REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION**

REPORT NO. : HK1710039  
 PROJECT NAME : PERFORMANCE CHECK / CALIBRATION OF DUST METER  
 DATE OF ISSUE : 17/01/2017  
 CUSTOMER : Envirotech Services Company  
 ADDRESS : Rm. 113, 1/F., MY LOFT, 9 HOI WING ROAD, TUEN MUN, N.T.

REPORT NO. : HK1710039  
 PROJECT ITEM NO. : HK1710039-01  
**PERFORMANCE CHECK / CALIBRATED EQUIPMENT**  
 TYPE : Digital Dust Indicator  
 MANUFACTURER : SIBATA  
 MODEL NO. : LD-3B  
 SERIAL NO. : 276020  
 EQUIPMENT NO. : ---  
 RECEIPT DATE : 11/01/2017  
 PERFORMANCE CHECK / CALIBRATION DATE : 12/01/2017

**PERFORMANCE CHECK / CALIBRATION Information**

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

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

Approved Signatory

Issue Date:

17/01/2017

\_\_\_\_\_  
 Wong Po Yan Pauline  
 (Testing Engineer)


**REPORT OF PERFORMANCE CHECK / CALIBRATION**

PROJECT NAME : PERFORMANCE CHECK / CALIBRATION OF DUST METER  
 DATE OF ISSUE : 17/01/2017  
 REPORT NO. : HK1710039

**PERFORMANCE CHECK / CALIBRATED EQUIPMENT**

TYPE : Digital Dust Indicator  
 MANUFACTURER : SIBATA  
 MODEL NO. : LD-3B  
 SERIAL NO. : 276020  
 EQUIPMENT NO. : ---  
 SENSITIVITY ADJUSTMENT : ---  
 PERFORMANCE CHECK / CALIBRATION DATE : 12/01/2017

**STANDARD EQUIPMENT**

TYPE : HIGH VOLUME AIR SAMPLER  
 MANUFACTURER : TISCH  
 MODEL NO. : TE-5170  
 EQUIPMENT REF NO. : PTL\_HV002  
 LAST CALIBRATION DATE : 23/11/2016

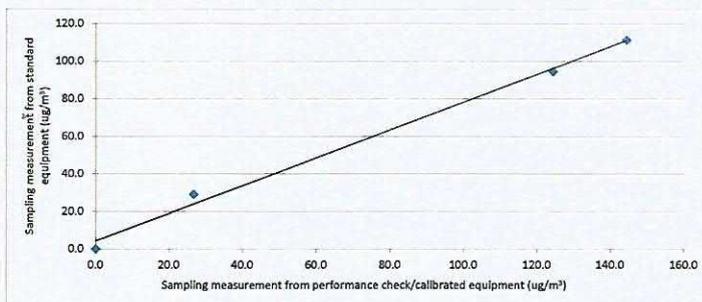
**EQUIPMENT PERFORMANCE CHECK / CALIBRATION RESULTS:**

Sensitivity Adjustment Scale Setting (Before Performance check / Calibration): 787 CPM  
 Sensitivity Adjustment Scale Setting (After Performance check / Calibration): 787 CPM

Trial no. in 1-hr period	Time	Mean Temp (°C)	Mean Pressure (hPa)	Concentration in ug/m <sup>3</sup> (Standard equipment) (Y - Axis)	Total Count <sup>2</sup> (Performance Check / Calibrated equipment)	Concentration in Count/Minute <sup>3</sup> (Performance Check / Calibrated equipment) (X - Axis)
Zero Check <sup>1</sup>	12/01/2017,10:00:00 AM	19	1016	0	0	0
1	12/01/2017,11:10:00 AM	19	1016	95	7462	124
2	12/01/2017,2:30:00 PM	19	1016	111	8670	145
3	12/01/2017,3:34:00 PM	19	1016	29	1600	27

**Linear Regression of Y on X**

Slope (K- factor) : 0.7  
 Correlation Coefficient : 0.9972  
 Validity of Performance Check / Calibration Record : 12/01/2018



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

Operator: MA Ching Him, Jackey Signature: [Signature] Date: 12/01/2017

Checked by: Wong Po Yan, Pauline Signature: [Signature] Date: 17/01/2017

## CALIBRATION CERTIFICATE

Date: December 21, 2016

Equipment Name	:	Digital Dust Indicator, Model LD-3B
Code No.	:	080000-42
Quantity	:	1 unit
Serial No.	:	2Z6240
Sensitivity	:	0.001 mg/m <sup>3</sup>
Sensitivity Adjustment	:	565CPM
Scale Setting	:	December 16, 2016

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

Sincerely

**SIBATA SCIENTIFIC TECHNOLOGY LTD.**

Shintaro Okamura

Shintaro Okamura

Overseas Sales Division

# TEST CERTIFICATE

Report No. 16-1879-2  
**SIBATA SCIENTIFIC TECHNOLOGY LTD.**  
 DATE 19/ December /2016

**CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.**



APPROVE BY 	VERIFIED BY 	ISSUED BY 
---	--	--

PRODUCT NAME : Digital Dust Indicator
MODEL NUMBER : LD-3B
SERIAL NUMBER : 2Z6240
CALIBRATION DATE : 16-- December --2016

Testing Category	Judging Standard	Judgment		
		Reading of Master	Reading of this Instrument	Correction
Function Test	Switch, Display, Wiring will normally function	OK		
Sensitivity Calibration	Count is $\pm 2\%$ accurate to the master by the standard calibration particle	798 CPM	796 CPM	$-0.3\%$
Dust Concentration Measuring	Count is $\pm 10\%$ accurate to the master under the 3 different concentration.	2053 CPM	1989 CPM	$-3.1\%$
		978 CPM	966 CPM	$-1.2\%$
Reproducibility	The difference between maximum and minimum value of sensitivity adjustment scale setting must be 5.0 % or less of maximum value. (The results of measurement of sensitivity adjustment in 5 times are within this range.)	516 CPM	515 CPM	$-0.2\%$
		OK		
Synthetic Judgment		Good		
		Reference Value(S)		565 CPM
		Test atmosphere		Temperature Humidity
		23 °C		45 %


**REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION**

**REPORT NO.** : HK1710040  
**PROJECT NAME** : PERFORMANCE CHECK / CALIBRATION OF DUST METER  
**DATE OF ISSUE** : 17/01/2017

**CUSTOMER** : Envirotech Services Company  
**ADDRESS** : Rm. 113, 1/F., MY LOFT, 9 HOI WING ROAD, TUEN MUN, N.T.

**REPORT NO.** : HK1710040  
**PROJECT ITEM NO.** : HK1710040-01  
**PERFORMANCE CHECK / CALIBRATED EQUIPMENT**  
**TYPE** : Digital Dust Indicator  
**MANUFACTURER** : SIBATA  
**MODEL NO.** : LD-3B  
**SERIAL NO.** : 2Z6240  
**EQUIPMENT NO.** : ---  
**RECEIPT DATE** : 11/01/2017  
**PERFORMANCE CHECK / CALIBRATION DATE** : 12/01/2017

**PERFORMANCE CHECK / CALIBRATION Information**

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

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

Approved Signatory :

Issue Date: 17/01/2017

 Wong Po Yan Pauline  
 (Testing Engineer)


**REPORT OF PERFORMANCE CHECK / CALIBRATION**

PROJECT NAME : PERFORMANCE CHECK / CALIBRATION OF DUST METER  
 DATE OF ISSUE : 17/01/2017  
 REPORT NO. : HK1710040

**PERFORMANCE CHECK / CALIBRATED EQUIPMENT**

TYPE : Digital Dust Indicator  
 MANUFACTURER : SIBATA  
 MODEL NO. : LD-3B  
 SERIAL NO. : 2Z6240  
 EQUIPMENT NO. : ---  
 SENSITIVITY ADJUSTMENT : ---  
 PERFORMANCE CHECK / CALIBRATION DATE : 12/01/2017

**STANDARD EQUIPMENT**

TYPE : HIGH VOLUME AIR SAMPLER  
 MANUFACTURER : TISCH  
 MODEL NO. : TE-5170  
 EQUIPMENT REF NO. : PTL\_HV002  
 LAST CALIBRATION DATE : 23/11/2016

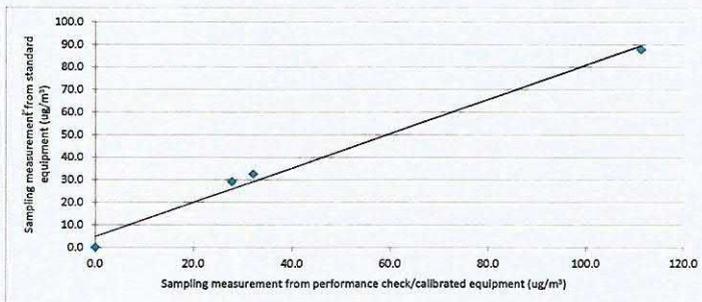
**EQUIPMENT PERFORMANCE CHECK / CALIBRATION RESULTS:**

Sensitivity Adjustment Scale Setting (Before Performance check / Calibration): 565 CPM  
 Sensitivity Adjustment Scale Setting (After Performance check / Calibration): 565 CPM

Trial no. in 1-hr period	Time	Mean Temp (°C)	Mean Pressure (hPa)	Concentration in ug/m <sup>3</sup> (Standard equipment) (Y - Axis)	Total Count <sup>2</sup> (Performance Check / Calibrated equipment)	Concentration in Count/Minute <sup>3</sup> (Performance Check / Calibrated equipment) (X - Axis)
Zero Check <sup>1</sup>	12/01/2017, 10:00:00 AM	19	1016	0	0	0
1	12/01/2017, 12:15:00 PM	19	1016	88	6680	111
2	12/01/2017, 1:25:00 PM	19	1016	33	1924	32
3	12/01/2017, 3:34:00 PM	19	1016	29	1664	28

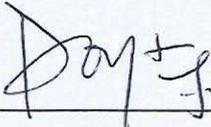
**Linear Regression of Y on X**

Slope (K- factor) : 0.8  
 Correlation Coefficient : 0.9940  
 Validity of Performance Check / Calibration Record : 12/01/2018



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

Operator: MA Ching Him, Jackey Signature: \_\_\_\_\_ Date: 12/01/2017

Checked by: Wong Po Yan, Pauline Signature:  Date: 17/01/2017



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C164166  
證書編號

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

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

## TEST CONDITIONS / 測試條件

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

## TEST SPECIFICATIONS / 測試規範

Calibration check

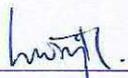
DATE OF TEST / 測試日期 : 29 July 2016

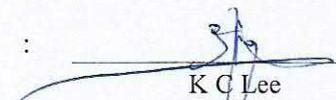
## TEST RESULTS / 測試結果

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

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

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

Tested By :   
測試 : \_\_\_\_\_  
H T Wong  
Technical Officer

Certified By :   
核證 : \_\_\_\_\_  
K C Lee  
Project Engineer

Date of Issue : 1 August 2016  
簽發日期

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

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

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

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# Certificate of Calibration

## 校正證書

Certificate No. : C164166  
證書編號

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

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

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

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

- 6.1.2 Linearity

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

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

- 6.2 Time Weighting

- 6.2.1 Continuous Signal

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

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

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

# Certificate of Calibration

## 校正證書

Certificate No. : C164166  
證書編號

### 6.2.2 Tone Burst Signal (2 kHz)

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

### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

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

#### 6.3.2 C-Weighting

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

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

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

# Certificate of Calibration

## 校正證書

Certificate No. : C164166

證書編號

### 6.4 Time Averaging

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

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

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

- Uncertainties of Applied Value :

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

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

#### Note :

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



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C163248

證書編號

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

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

### TEST CONDITIONS / 測試條件

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

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 June 2016

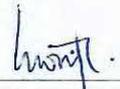
### TEST RESULTS / 測試結果

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

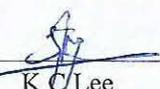
The test equipment used for calibration are traceable to National Standards via :

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

Tested By  
測試

  
H T Wong  
Technical Officer

Certified By  
核證

  
K C Lee  
Project Engineer

Date of Issue  
簽發日期

17 June 2016

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

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

Sun Creation Engineering Limited - Calibration & Testing Laboratory

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

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606

Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Page 1 of 2

# Certificate of Calibration

## 校正證書

Certificate No. : C163248  
證書編號

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

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

- Test procedure : MA100N.

- Results :

### 5.1 Sound Level Accuracy

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

### 5.2 Frequency Accuracy

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

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

### Note :

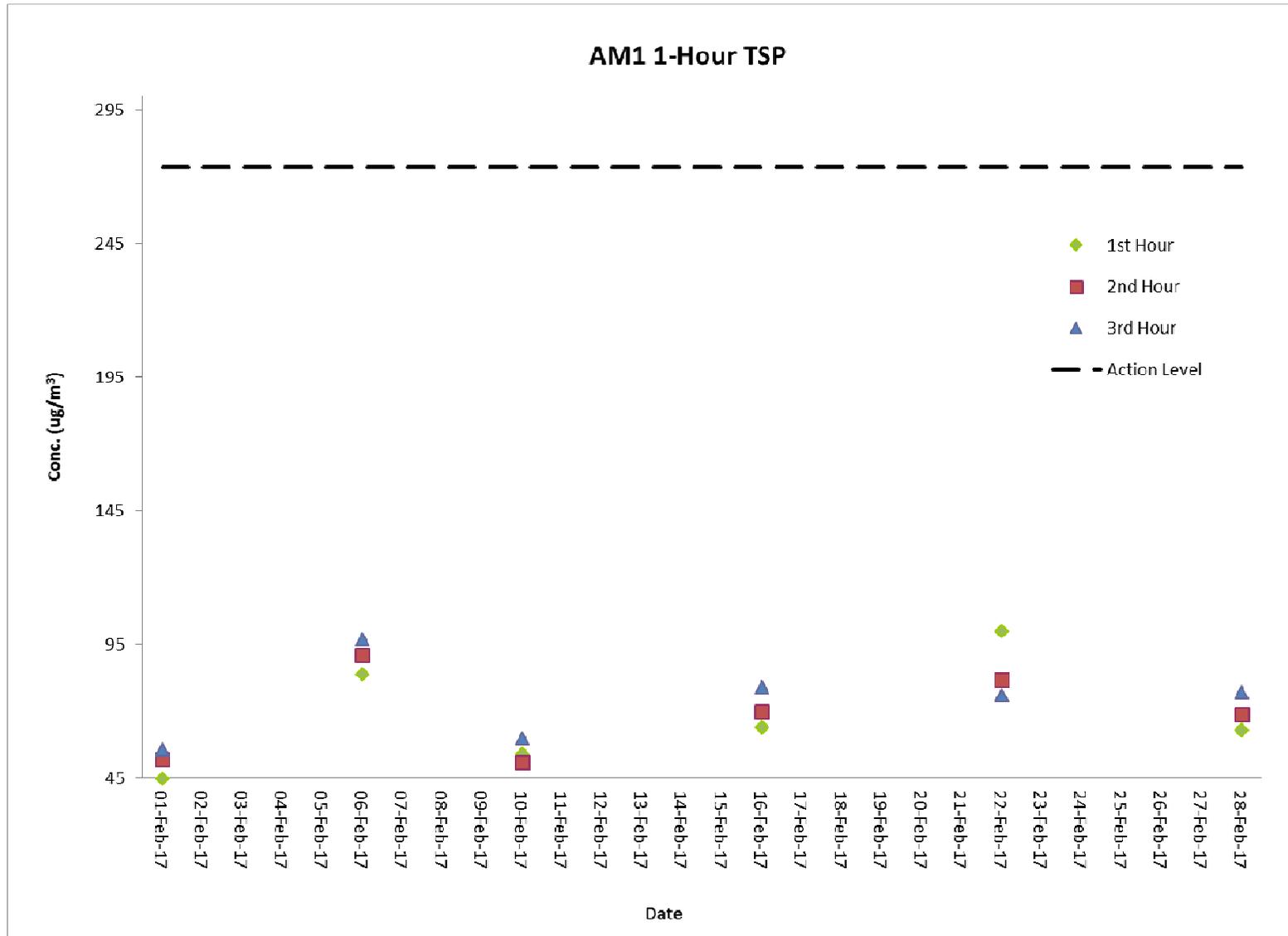
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the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

## G. Graphical Plots of the Monitoring Results

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

Date	Weather Condition	Time	Conc. ( $\mu\text{g}/\text{m}^3$ )			Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
			1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour		
01-Feb-17	Fine	10:50 - 16:00	45	52	56	273.7	500
06-Feb-17	Fine	10:42 - 16:00	84	91	97	273.7	500
10-Feb-17	Cloudy	8:02 - 11:02	54	51	60	273.7	500
16-Feb-17	Sunny	10:48 - 16:00	64	70	79	273.7	500
22-Feb-17	Cloudy	10:47 - 16:00	100	82	76	273.7	500
28-Feb-17	Sunny	10:40 - 16:00	63	69	77	273.7	500

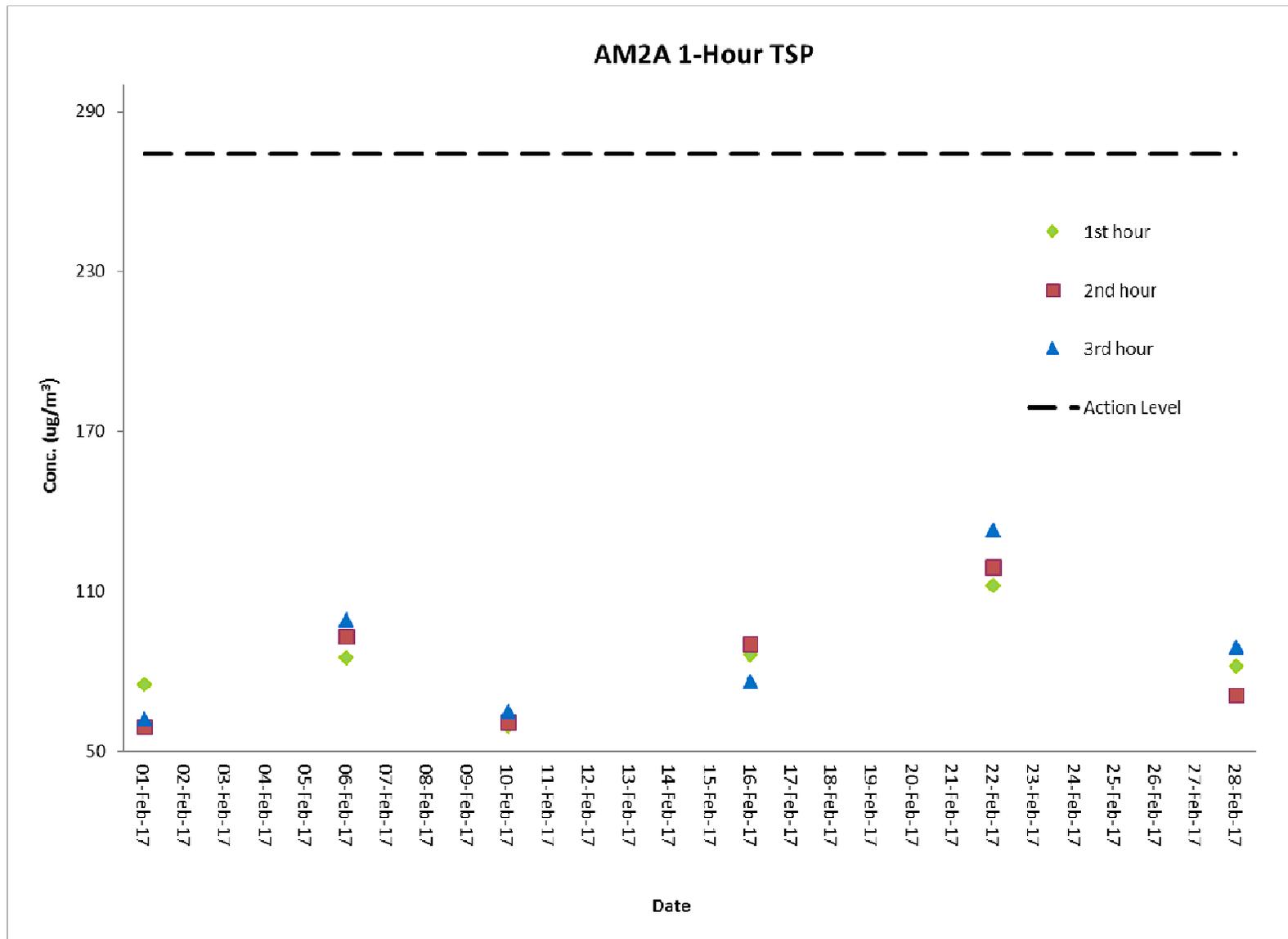
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



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

Date	Weather Condition	Time	Conc. ( $\mu\text{g}/\text{m}^3$ )			Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
			1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour		
01-Feb-17	Fine	11:02 - 16:10	75	59	62	274.2	500
06-Feb-17	Fine	10:55 - 16:10	85	93	99	274.2	500
10-Feb-17	Cloudy	8:14 - 11:14	59	61	65	274.2	500
16-Feb-17	Sunny	11:02 - 16:10	86	90	76	274.2	500
22-Feb-17	Cloudy	11:00 - 16:10	112	119	133	274.2	500
28-Feb-17	Sunny	10:54 - 16:10	82	71	89	274.2	500

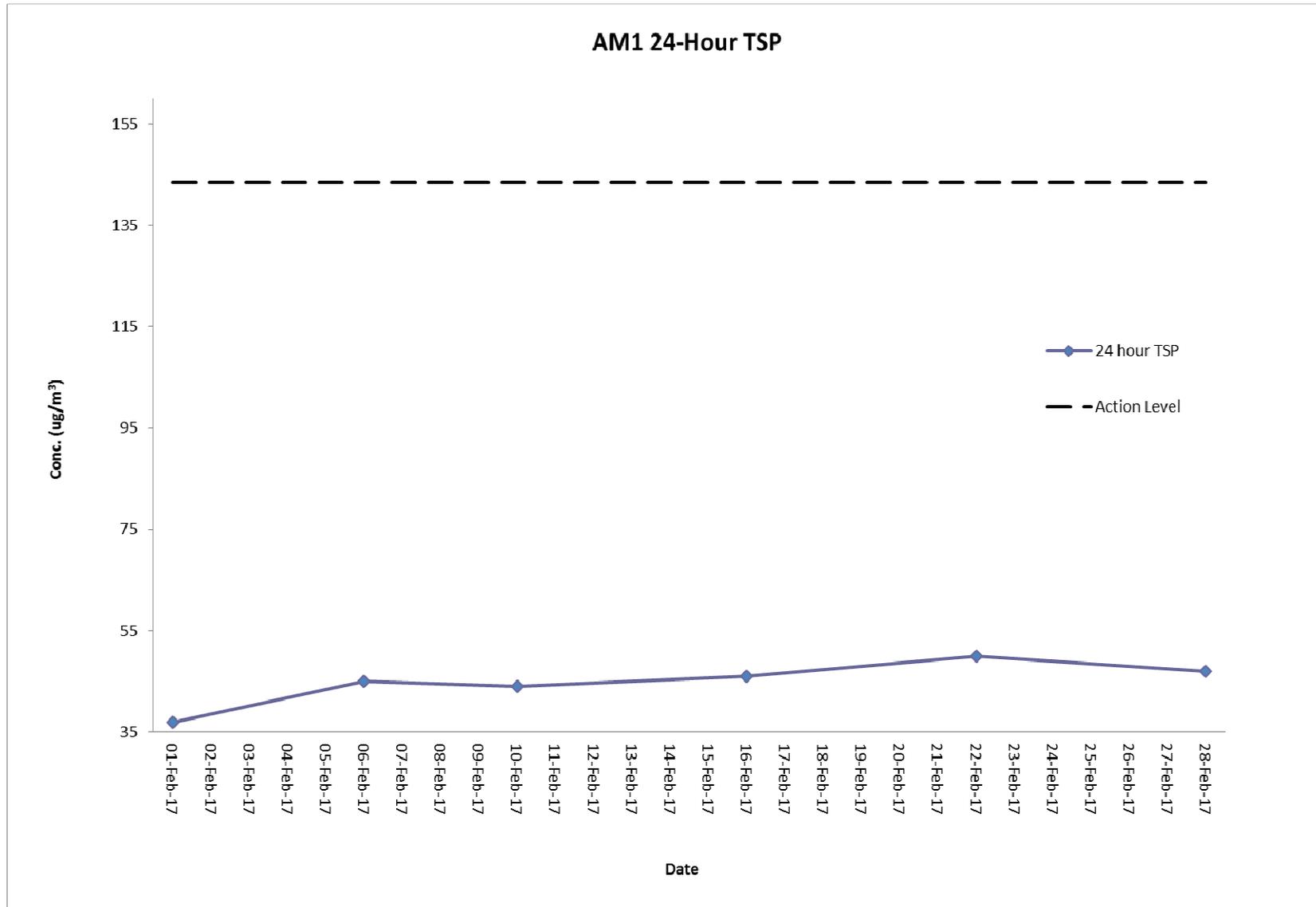
Graphical Presentation of Air Quality Monitoring Result at Station AM2A (1-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)			Conc. (µg/m <sup>3</sup> )	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
01-Feb-17	10:52	02-Feb-17	10:52	2.7999	2.8713	20592.38	20616.38	24	1.33	1.33	1.33	37	Fine	143.6	260
06-Feb-17	10:40	07-Feb-17	10:40	2.8132	2.8986	20616.38	20640.38	24	1.33	1.33	1.33	45	Fine	143.6	260
10-Feb-17	08:00	11-Feb-17	08:00	2.793	2.8771	20640.38	20664.38	24	1.33	1.33	1.33	44	Cloudy	143.6	260
16-Feb-17	10:50	17-Feb-17	10:50	2.7735	2.8535	20664.38	20688.38	24	1.22	1.22	1.22	46	Sunny	143.6	260
22-Feb-17	10:45	23-Feb-17	10:45	2.78	2.868	20688.38	20712.38	24	1.22	1.22	1.22	50	Cloudy	143.6	260
28-Feb-17	10:42	01-Mar-17	10:42	2.788	2.8711	20712.38	20736.38	24	1.22	1.22	1.22	47	Sunny	143.6	260

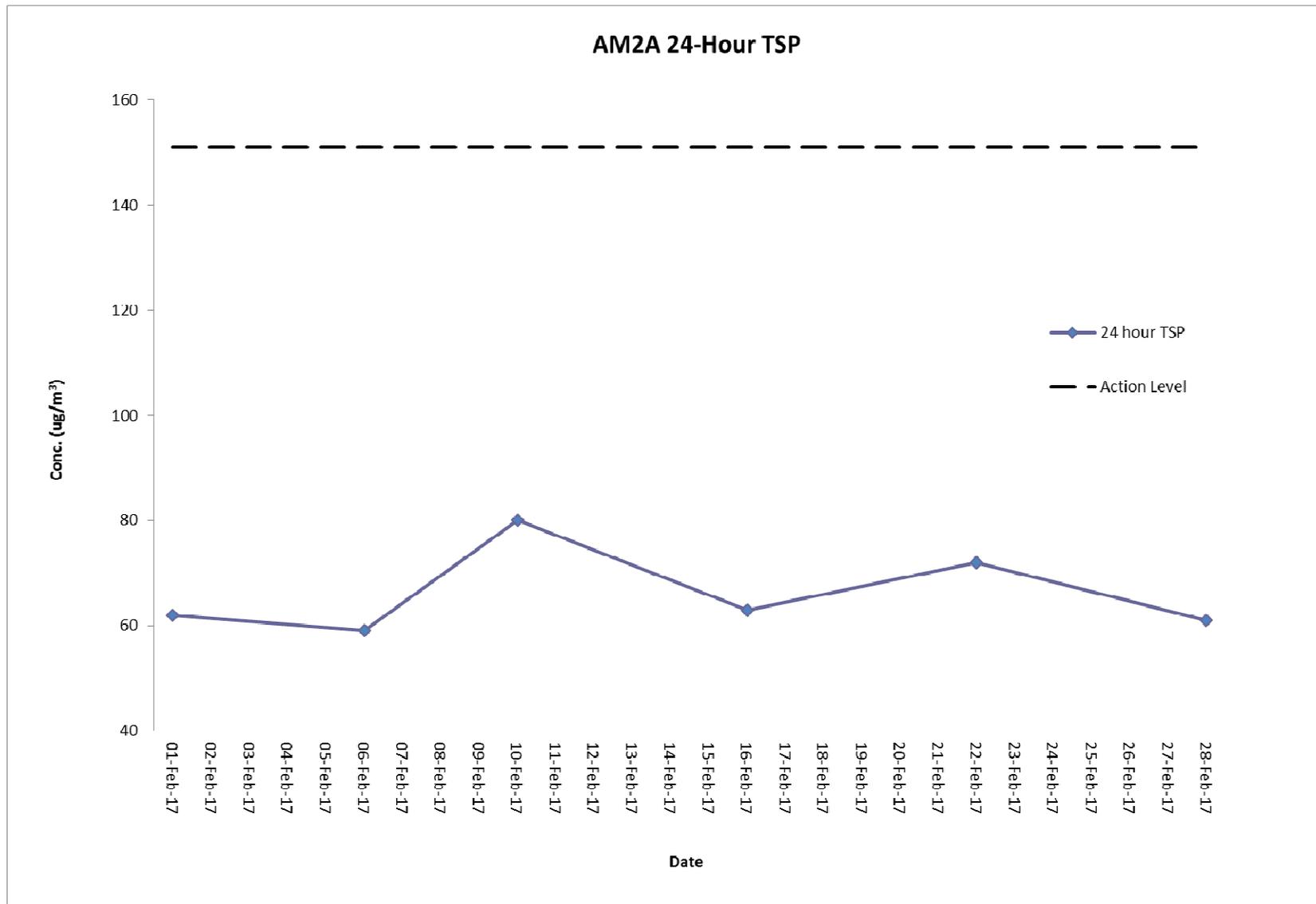
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min)			Conc. (µg/m <sup>3</sup> )	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
01-Feb-17	11:04	02-Feb-17	11:04	2.8132	2.9210	16247.59	16271.59	24	1.21	1.21	1.21	62	Fine	151.1	260
06-Feb-17	10:52	07-Feb-17	10:52	2.7880	2.8912	16271.59	16295.59	24	1.21	1.21	1.21	59	Fine	151.1	260
10-Feb-17	08:12	11-Feb-17	08:12	2.7736	2.9125	16295.59	16319.59	24	1.21	1.21	1.21	80	Cloudy	151.1	260
16-Feb-17	11:00	17-Feb-17	11:00	2.7832	2.9009	16319.59	16343.59	24	1.30	1.30	1.3	63	Sunny	151.1	260
22-Feb-17	10:57	23-Feb-17	10:57	2.7800	2.9145	16343.59	16367.59	24	1.30	1.30	1.3	72	Cloudy	151.1	260
28-Feb-17	10:52	01-Mar-17	10:52	2.7757	2.8908	16367.59	16391.59	24	1.30	1.30	1.3	61	Sunny	151.1	260

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



**Noise Monitoring Result at Station NM1A**

Date	Time	Measured L <sub>10</sub> dB(A)	Measured L <sub>90</sub> dB(A)	L <sub>eq</sub> (30 min.) dB(A)
01-Feb-17	14:00	66.1	62.1	68
01-Feb-17	14:05	67.1	62.4	
01-Feb-17	14:10	67.4	63.1	
01-Feb-17	14:15	66.0	61.7	
01-Feb-17	14:20	66.5	62.2	
01-Feb-17	14:25	66.9	62.8	
06-Feb-17	14:00	68.0	62.7	69
06-Feb-17	14:05	67.9	62.4	
06-Feb-17	14:10	68.8	63.0	
06-Feb-17	14:15	68.0	62.9	
06-Feb-17	14:20	68.4	63.2	
06-Feb-17	14:25	67.7	63.0	
16-Feb-17	14:00	68.0	63.1	69
16-Feb-17	14:05	68.7	64.1	
16-Feb-17	14:10	68.1	63.7	
16-Feb-17	14:15	68.4	64.9	
16-Feb-17	14:20	68.9	64.8	
16-Feb-17	14:25	68.2	63.7	
22-Feb-17	14:00	67.9	63.2	69
22-Feb-17	14:05	68.0	64.7	
22-Feb-17	14:10	68.2	63.8	
22-Feb-17	14:15	68.7	64.2	
22-Feb-17	14:20	68.0	63.9	
22-Feb-17	14:25	68.8	64.2	
28-Feb-17	14:00	68.7	63.1	69
28-Feb-17	14:05	68.0	63.2	
28-Feb-17	14:10	68.9	62.9	
28-Feb-17	14:15	69.2	63.7	
28-Feb-17	14:20	67.7	63.2	
28-Feb-17	14:25	68.8	64.1	

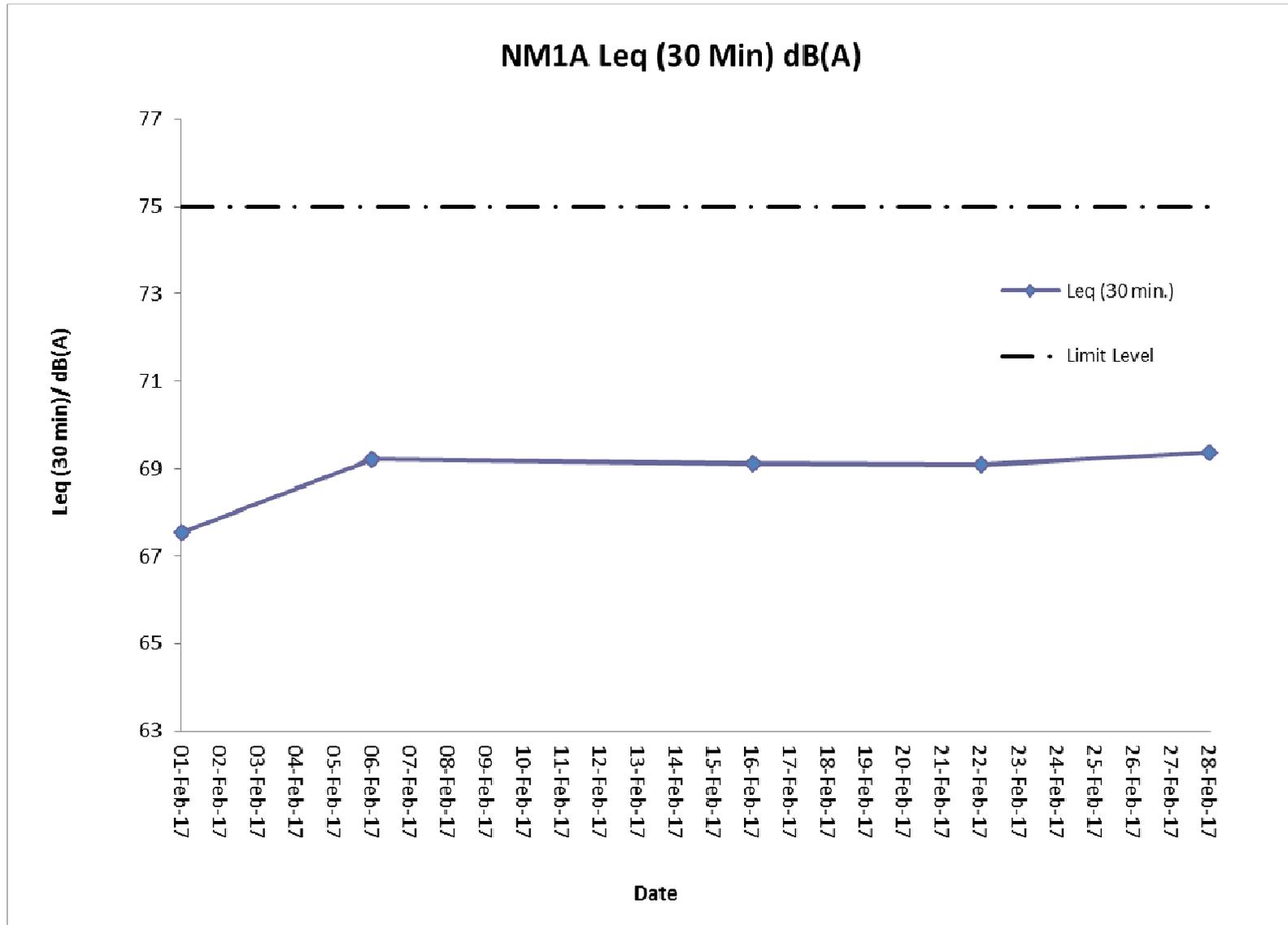
**Remarks:**

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



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

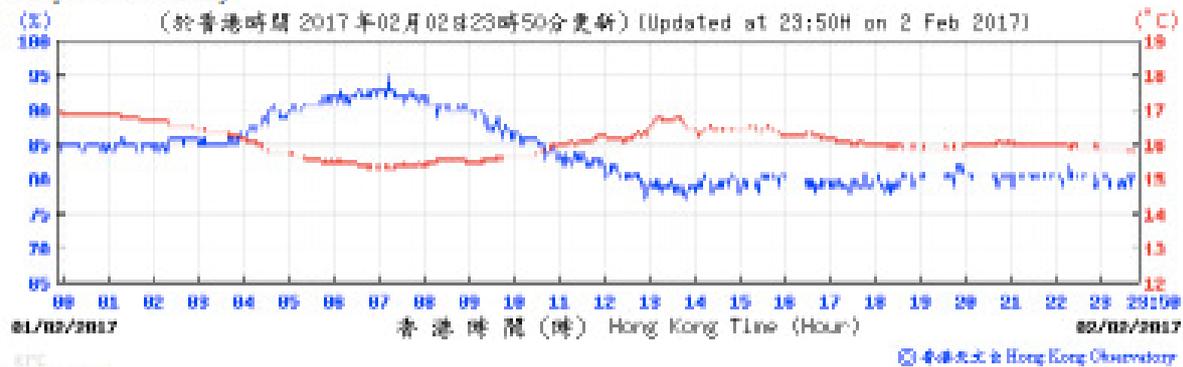
Graphical Presentation Noise Monitoring Result at Station NM1A



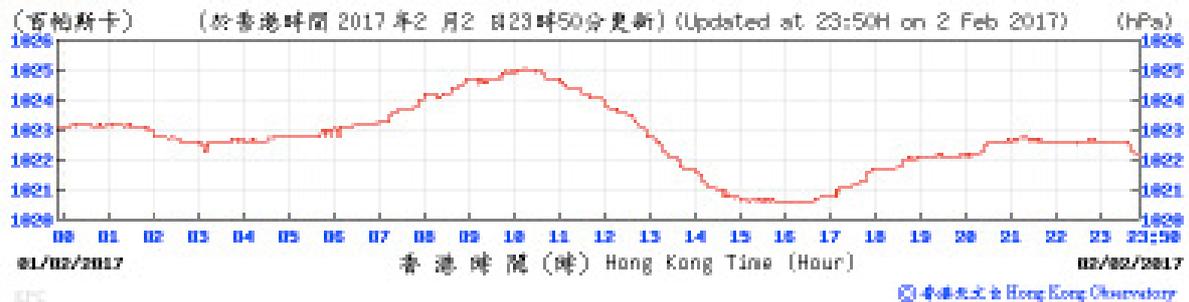
## **H. Meteorological Data Extracted from Hong Kong Observatory**

Extract of Meteorological Observations for King's Park Automatic Weather Station, February 2017

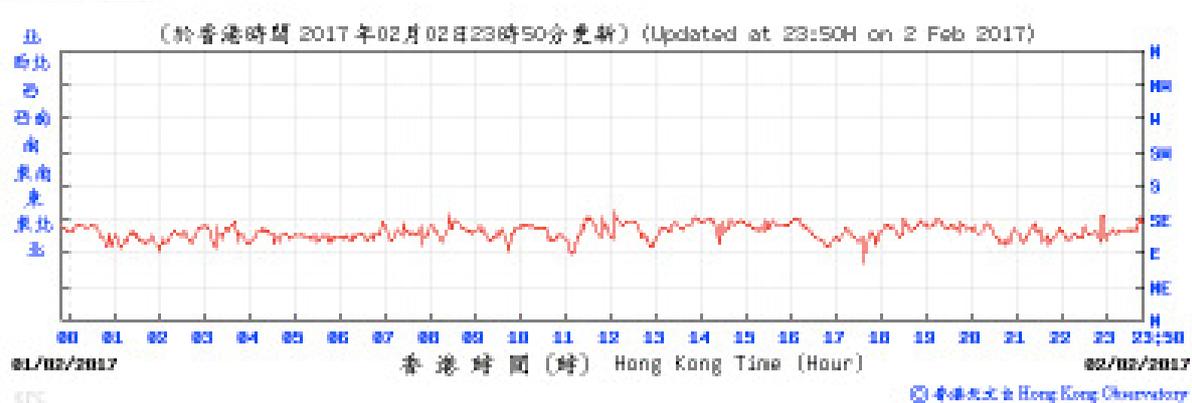
Temperature/Humidity:



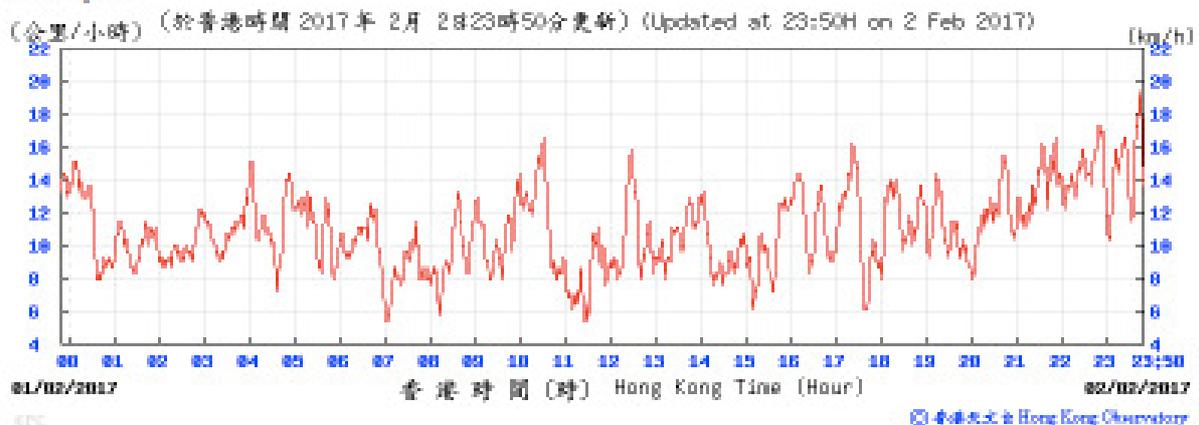
Pressure:



Wind Direction:



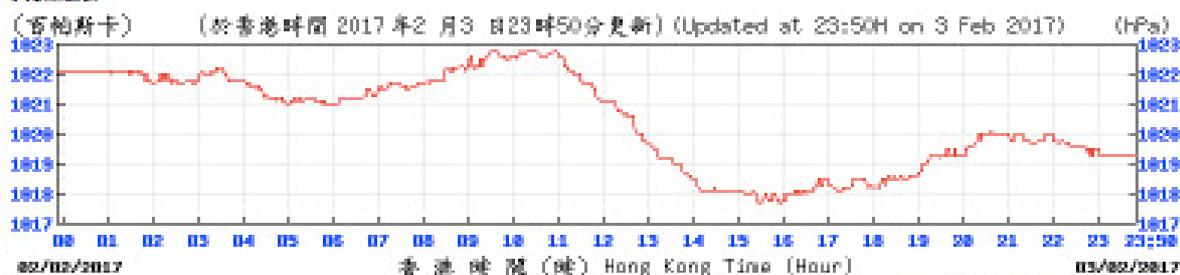
Wind Speed:



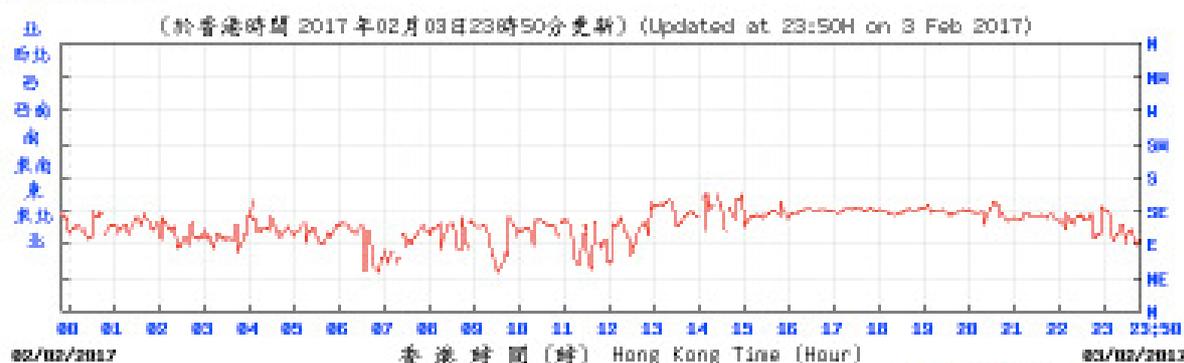
Temperature/Humidity:



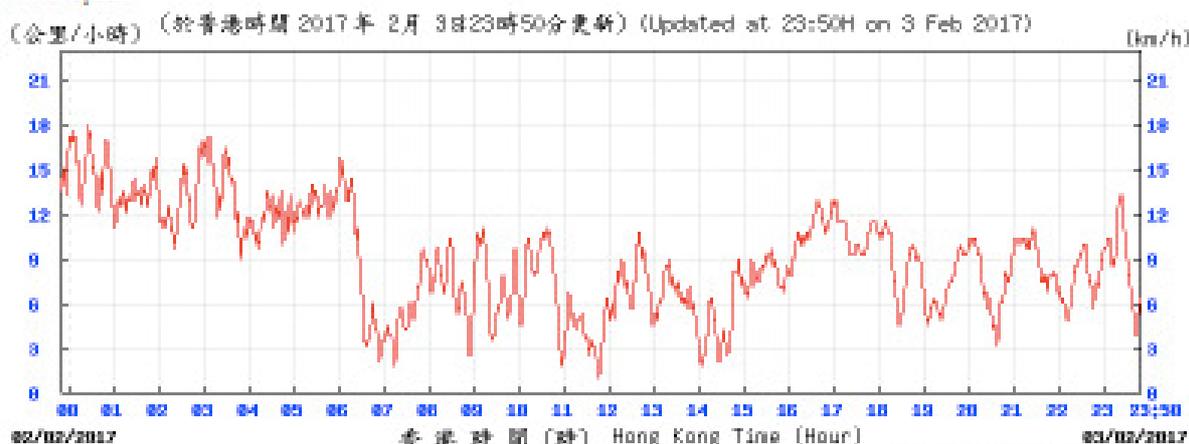
Pressure:



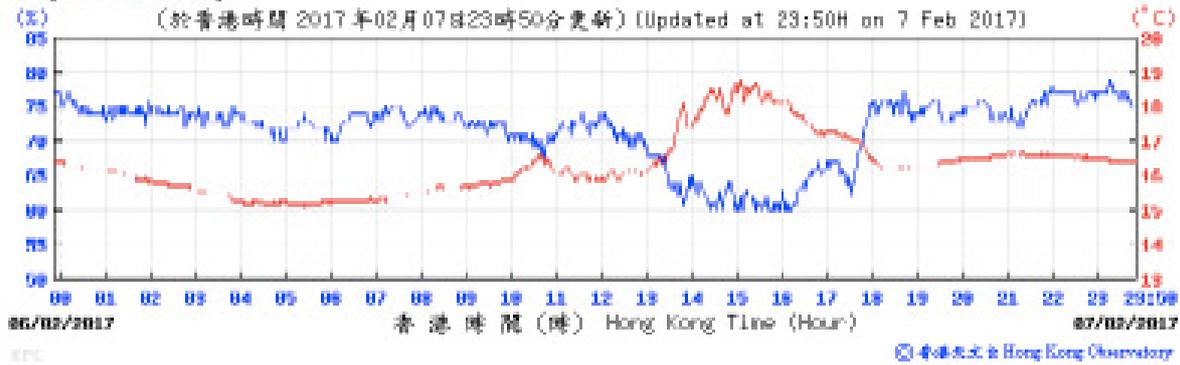
Wind Direction:



Wind Speed:



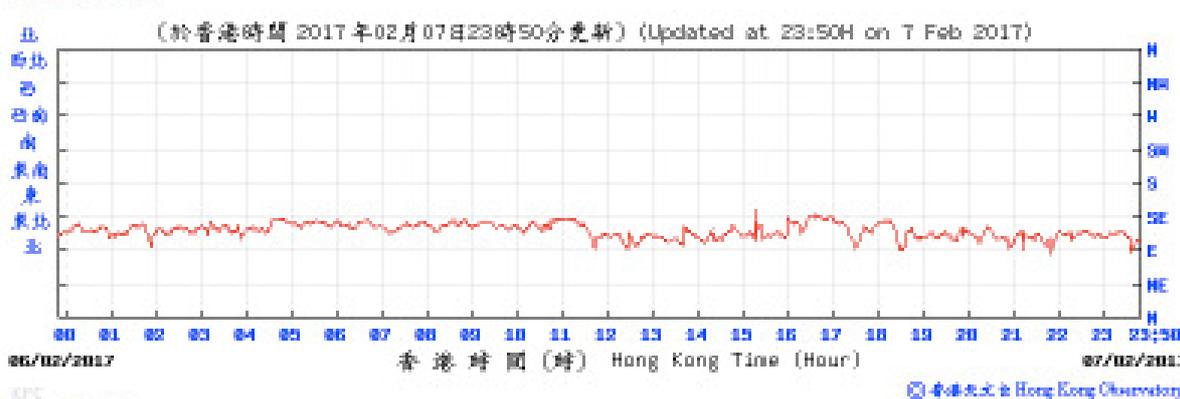
Temperature/Humidity:



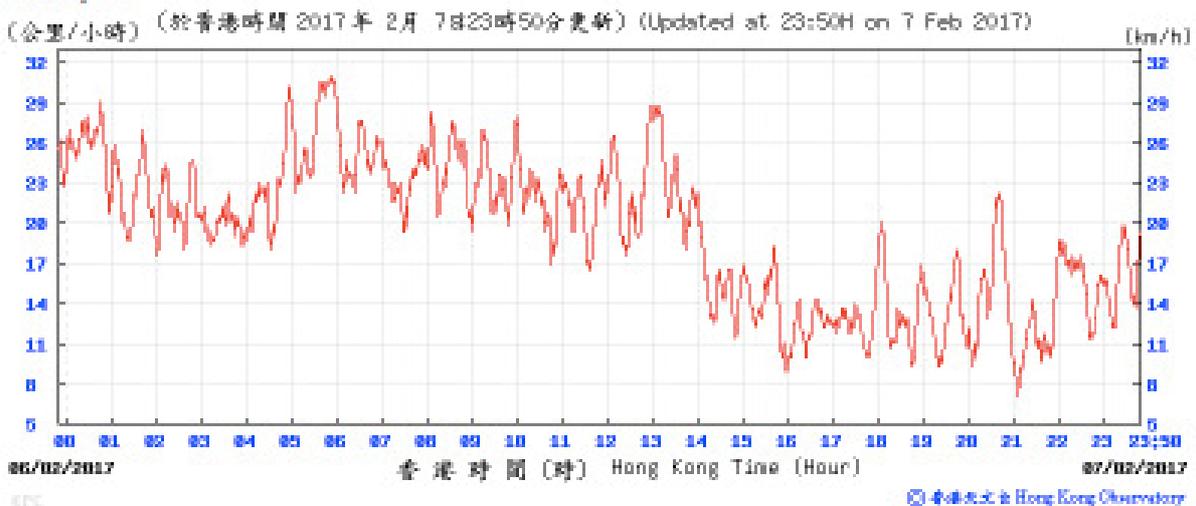
Pressure:



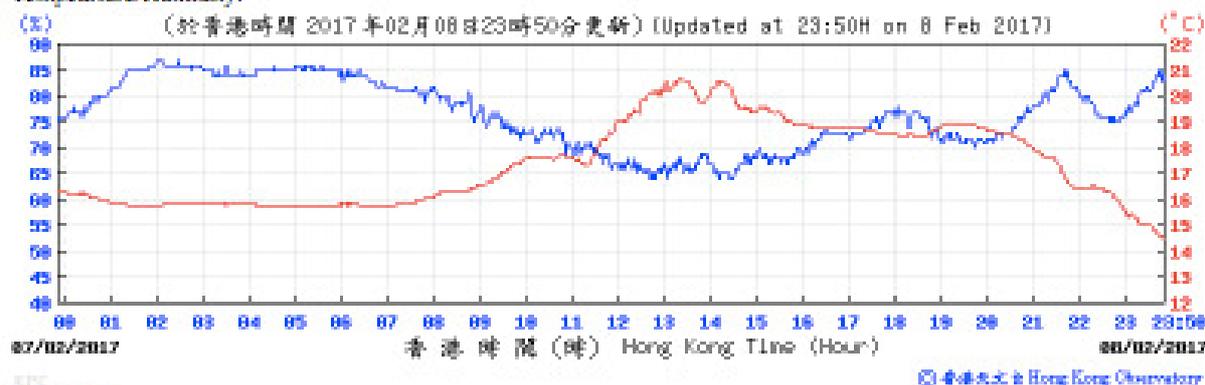
Wind Direction:



Wind Speed:



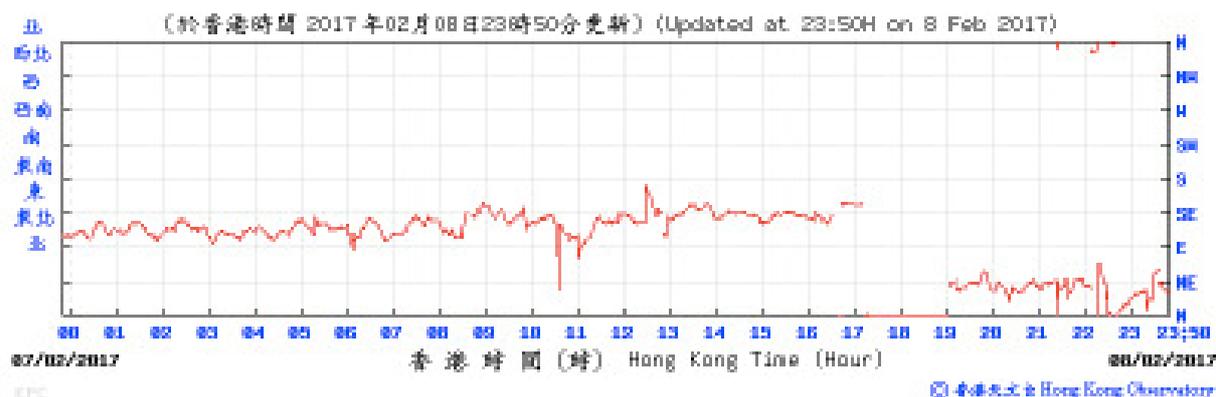
Temperature/Humidity:



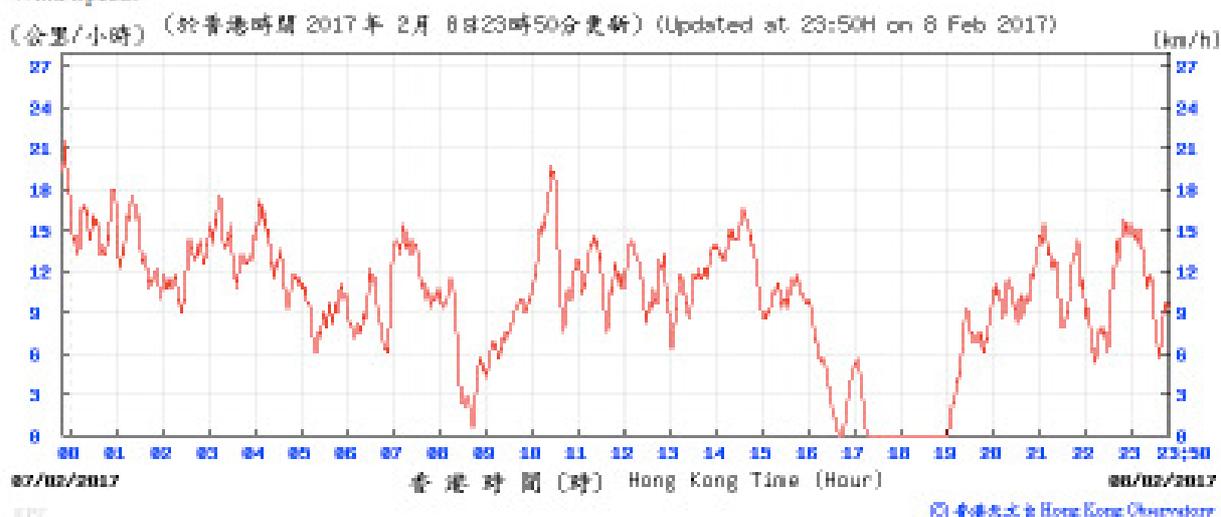
Pressure:



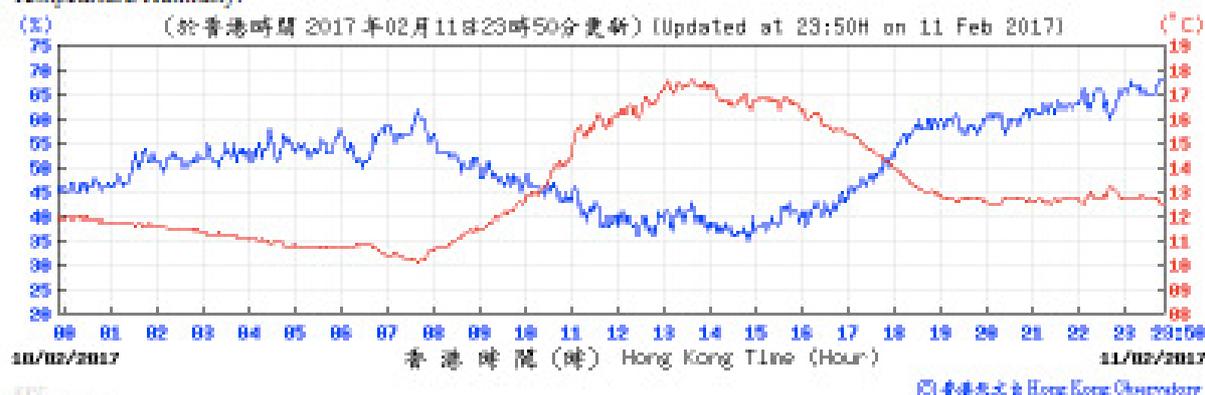
Wind Direction:



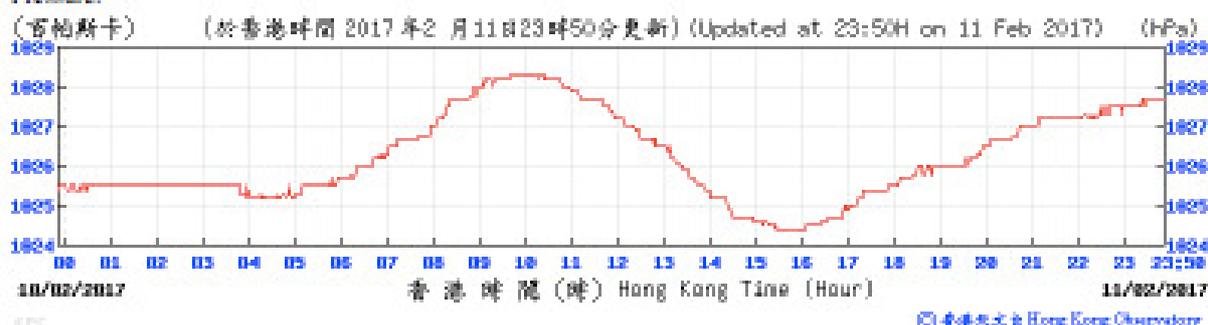
Wind Speed:



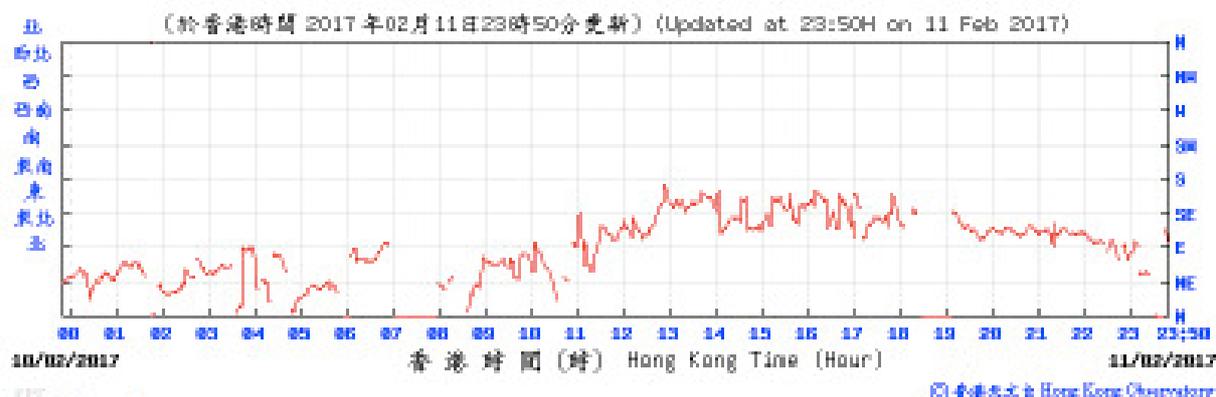
Temperature/Humidity:



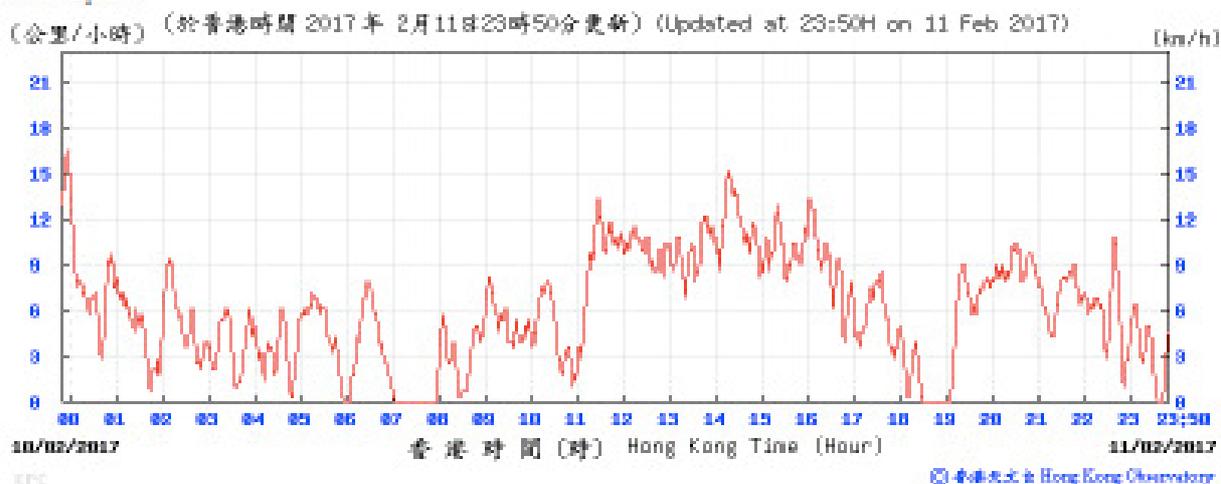
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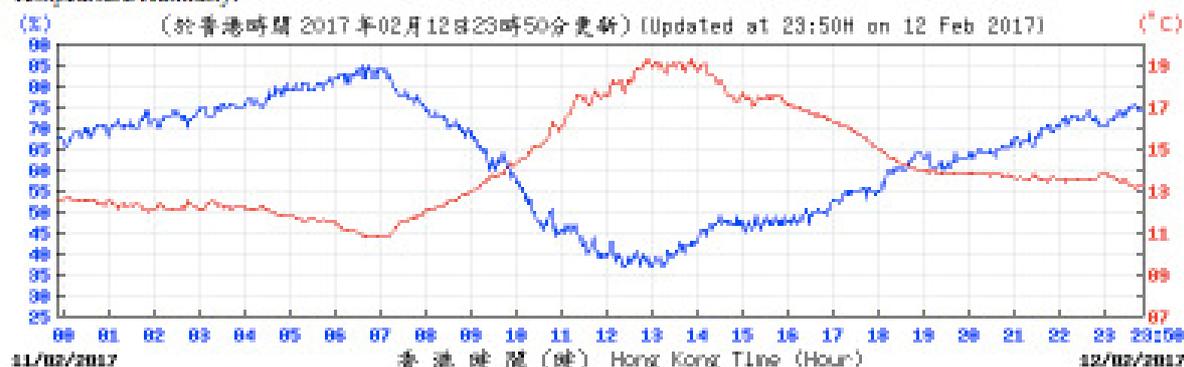
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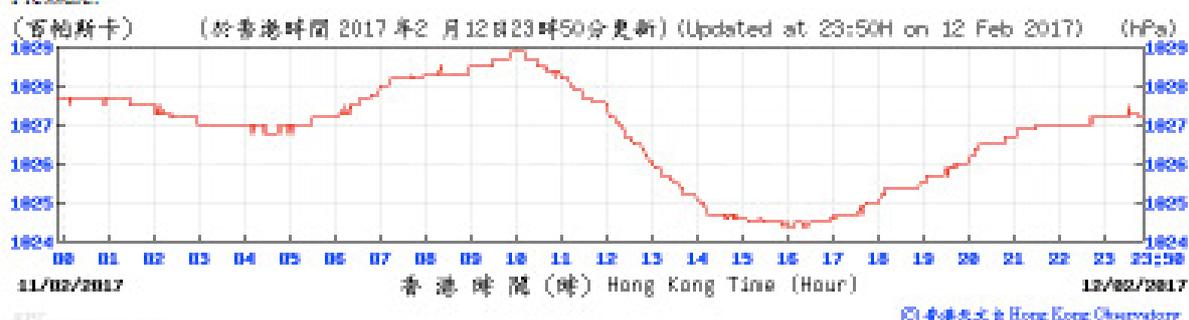
Wind Speed:



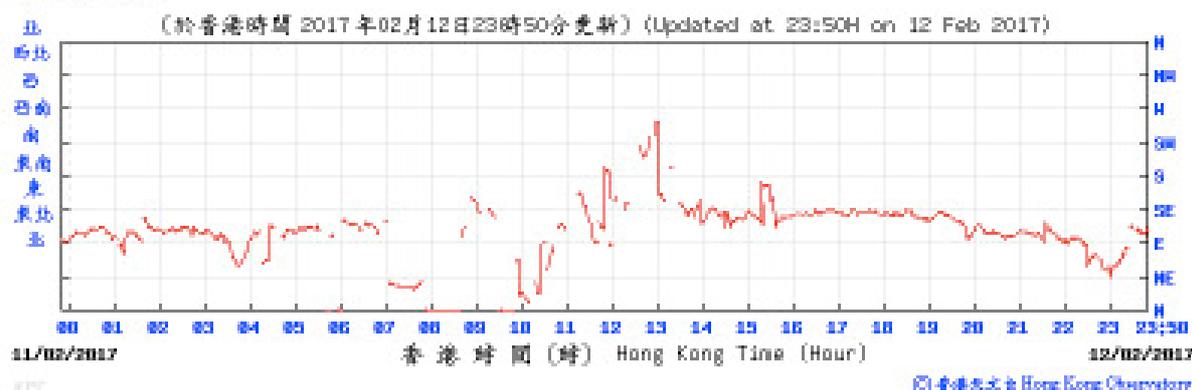
Temperature/Humidity:



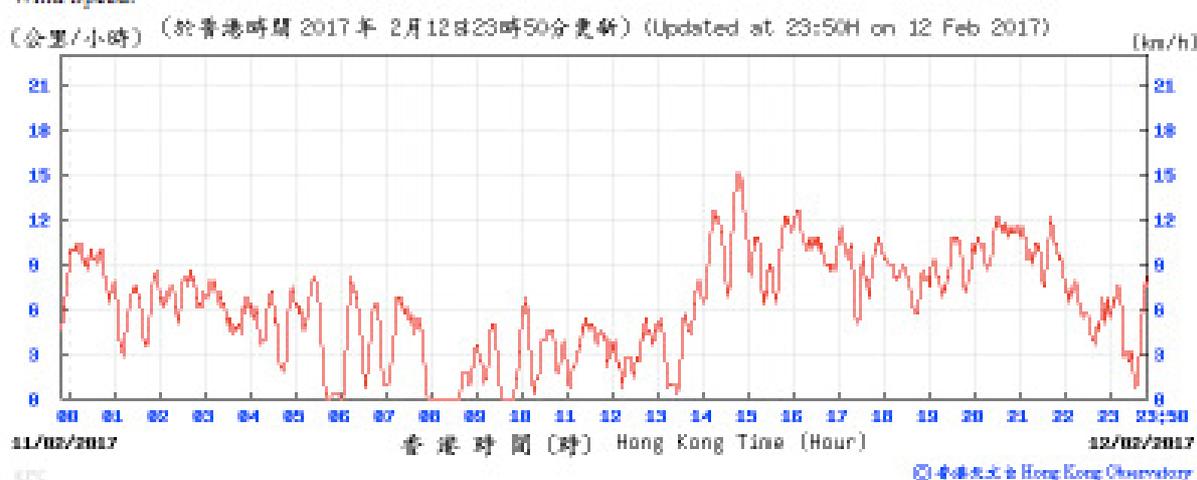
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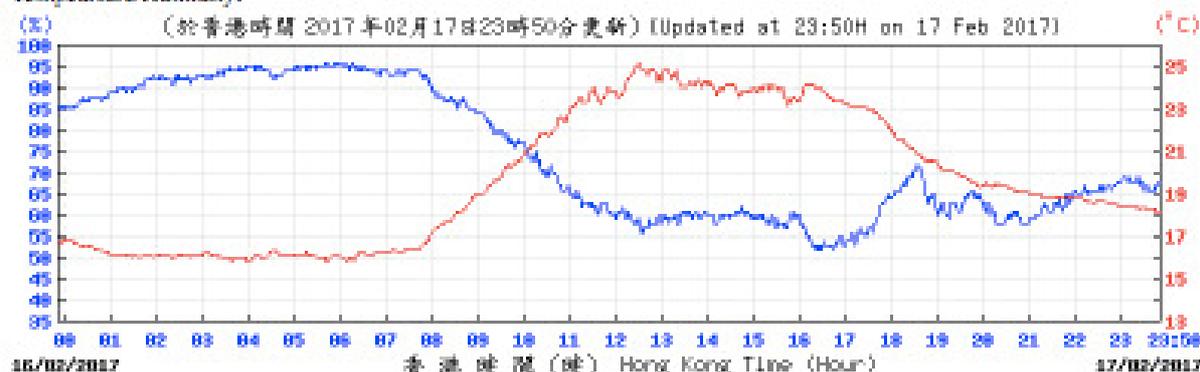
Wind Direction:



Wind Speed:

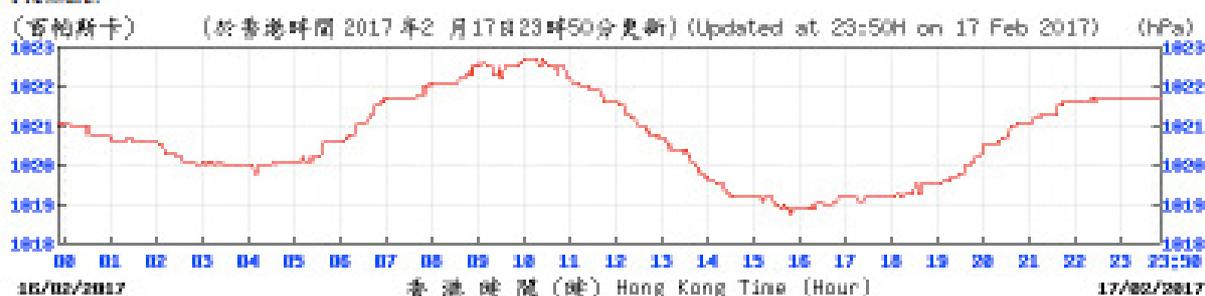


Temperature/Humidity:



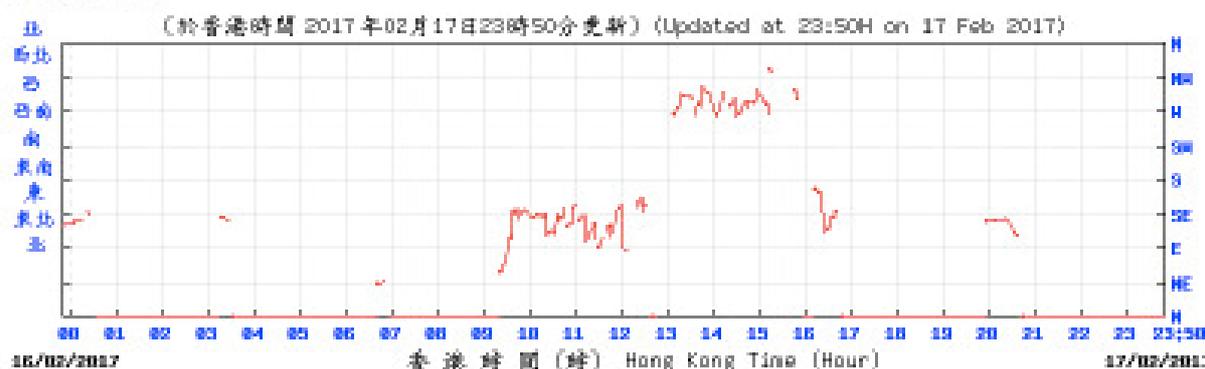
香港天文台 Hong Kong Observatory

Pressure:



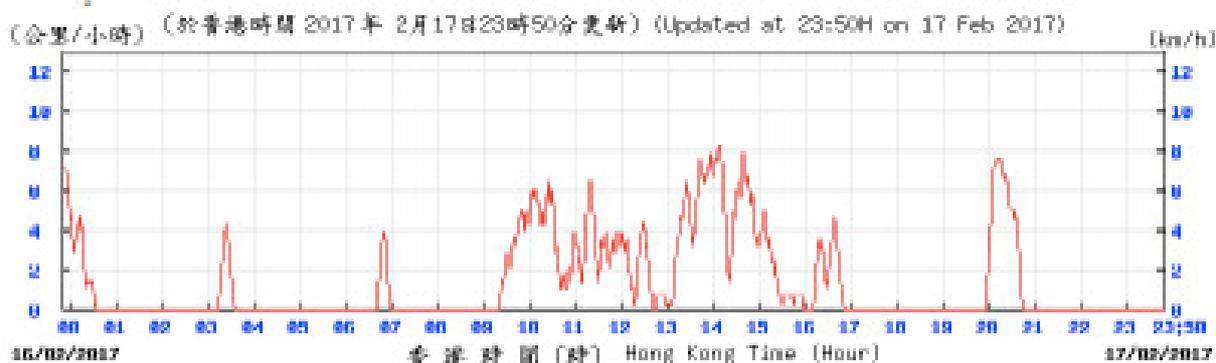
香港天文台 Hong Kong Observatory

Wind Direction:



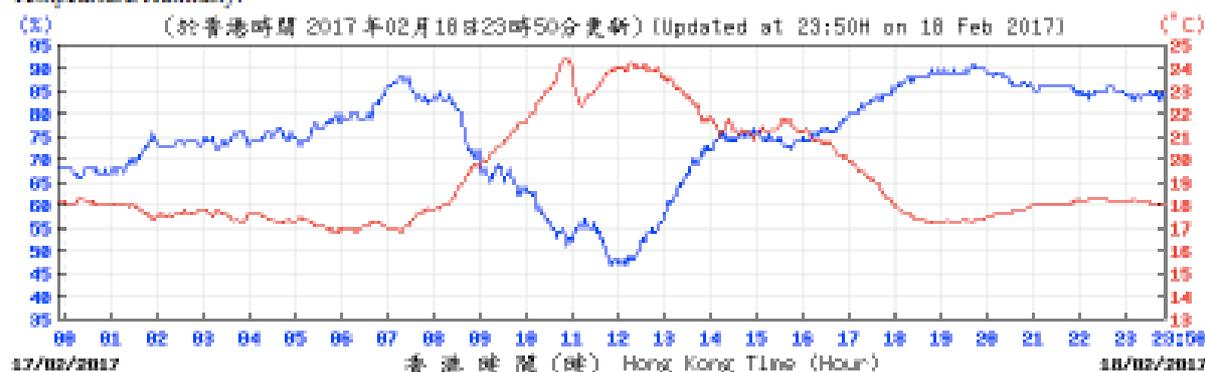
香港天文台 Hong Kong Observatory

Wind Speed:



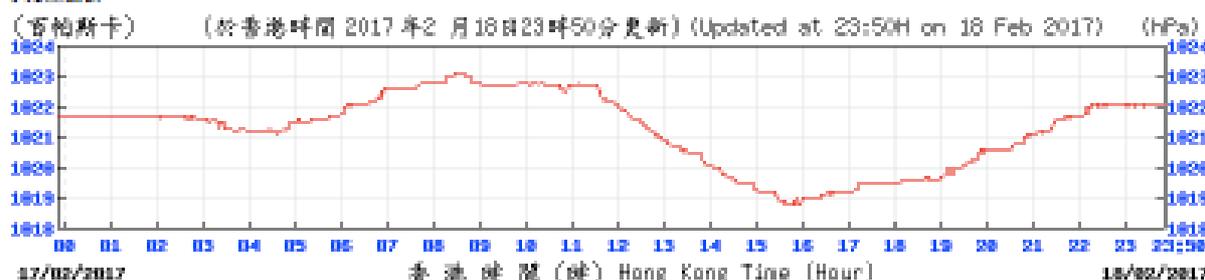
香港天文台 Hong Kong Observatory

Temperature/Humidity:



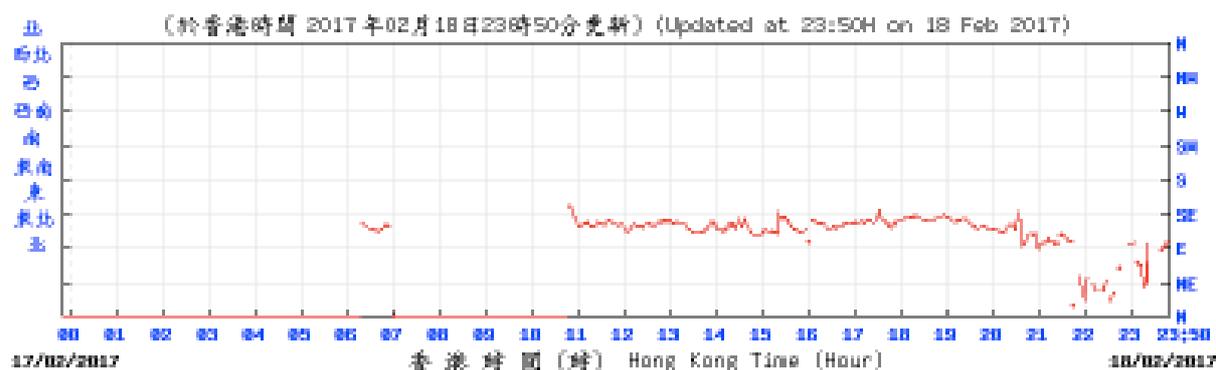
香港天文台 Hong Kong Observatory

Pressure:



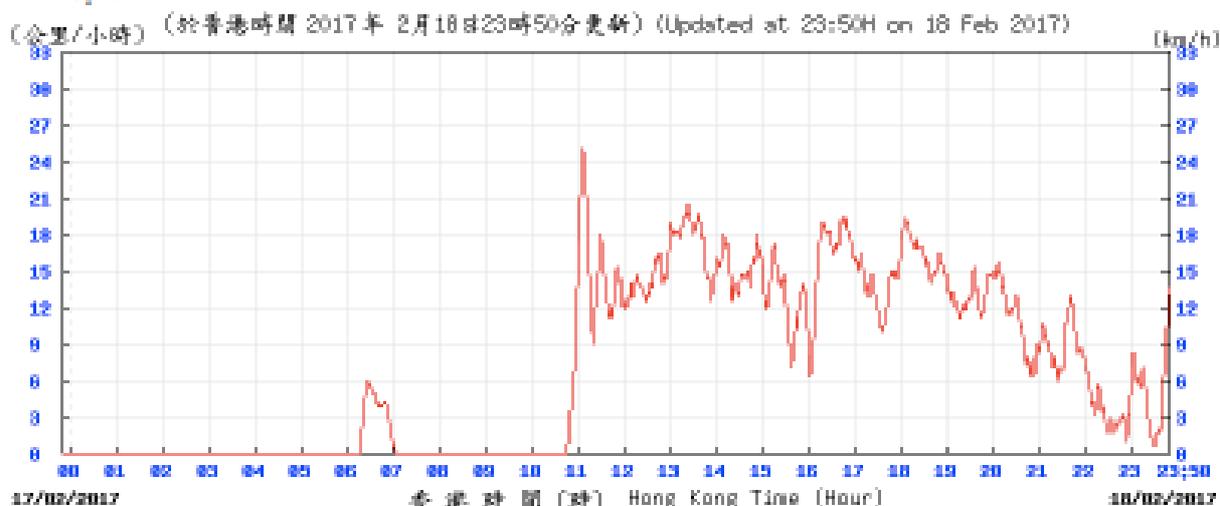
香港天文台 Hong Kong Observatory

Wind Direction:



香港天文台 Hong Kong Observatory

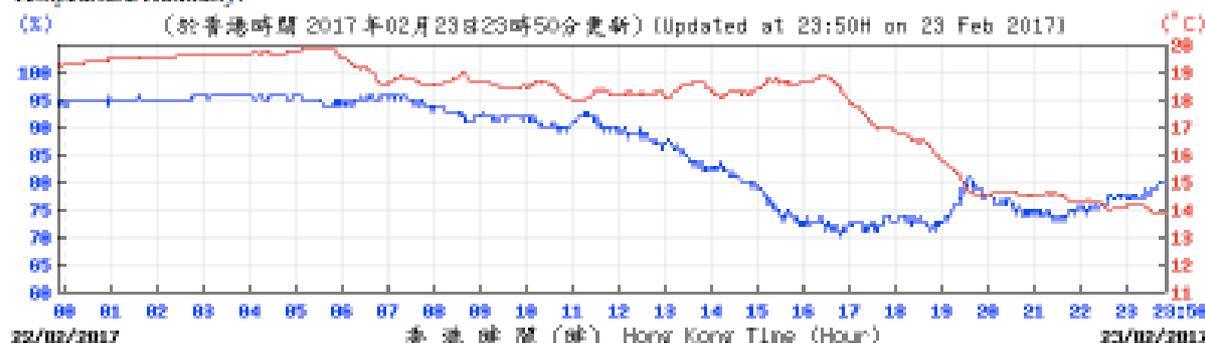
Wind Speed:



KFC

香港天文台 Hong Kong Observatory

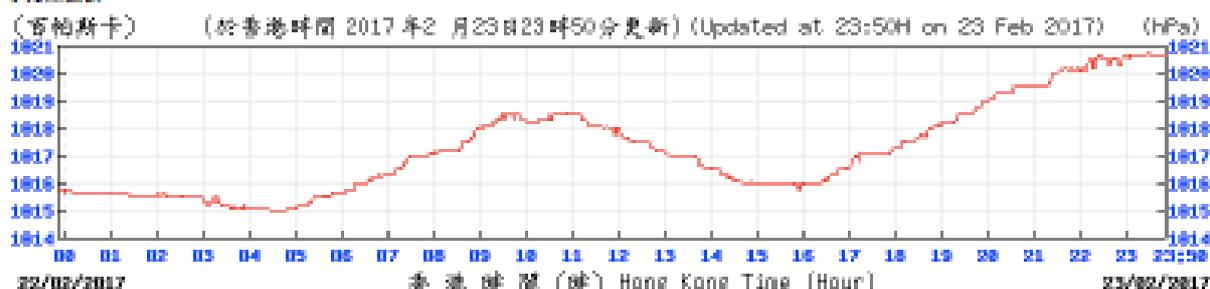
Temperature/Humidity:



KPC

香港天文台 Hong Kong Observatory

Pressure:



KPC

香港天文台 Hong Kong Observatory

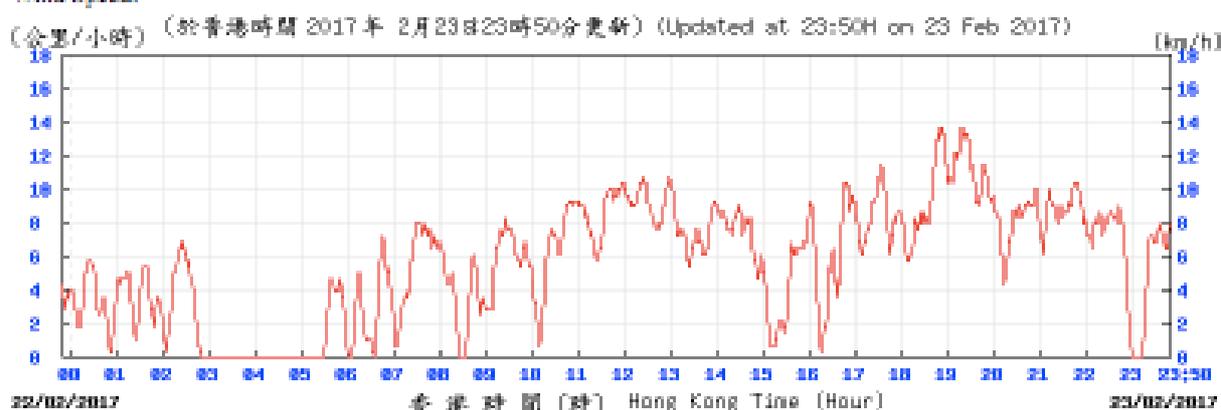
Wind Direction:



KPC

香港天文台 Hong Kong Observatory

Wind Speed:



KPC

香港天文台 Hong Kong Observatory

Temperature/Humidity:



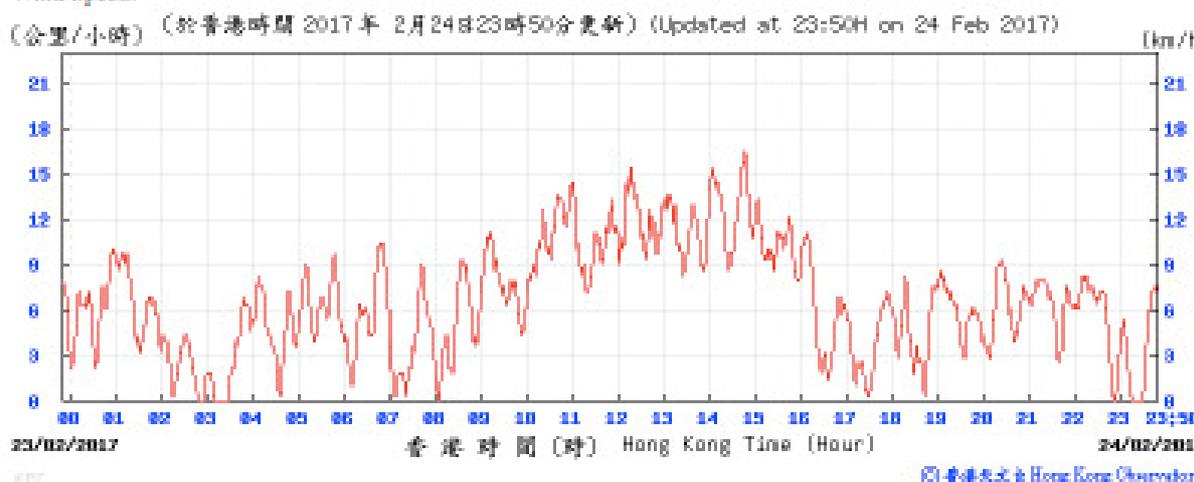
Pressure:



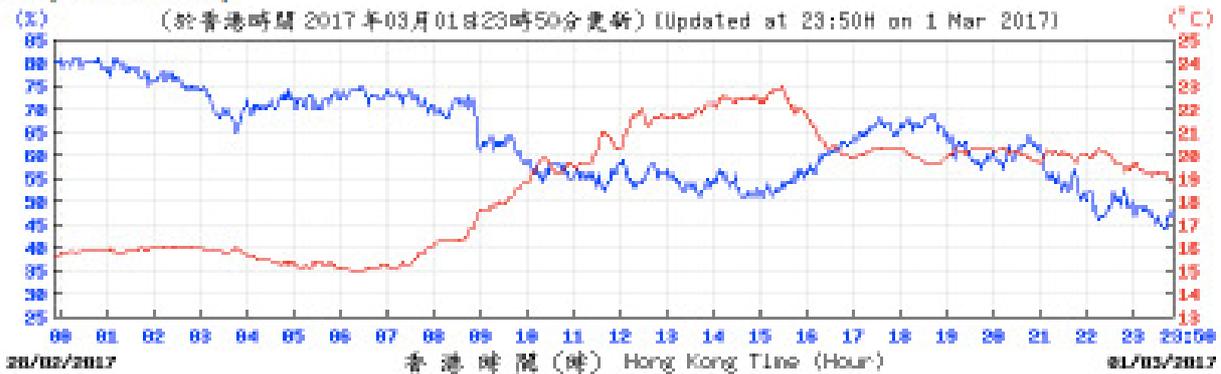
Wind Direction:



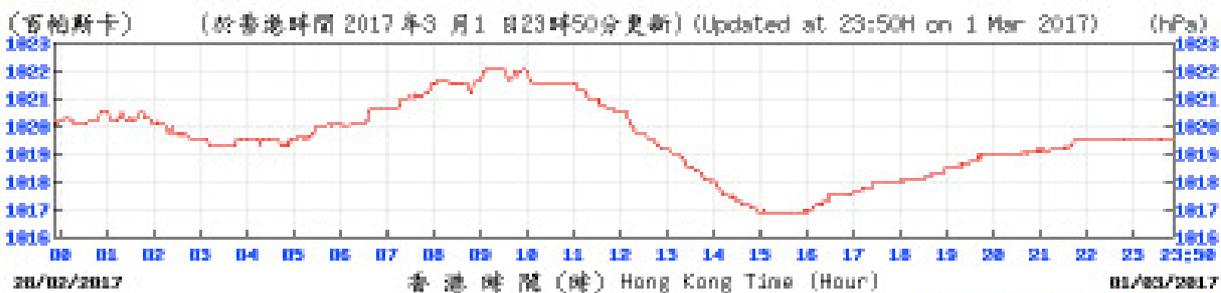
Wind Speed:



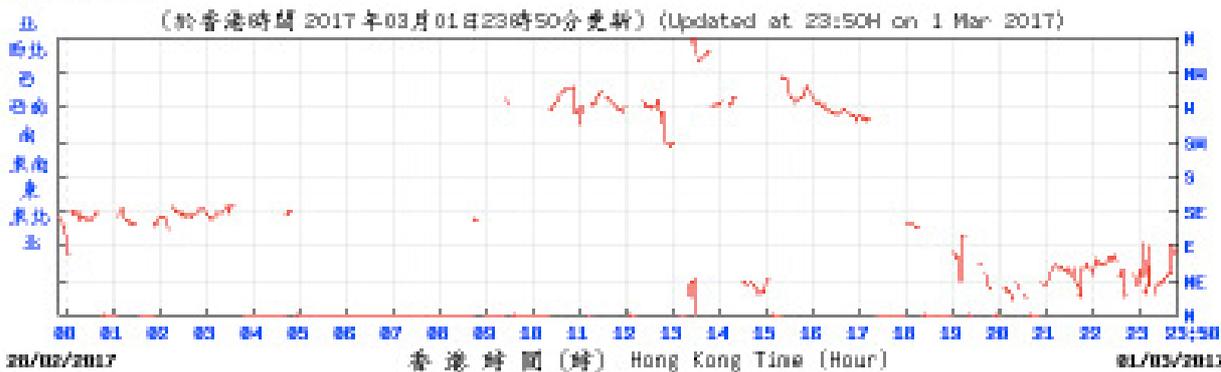
Temperature/Humidity:



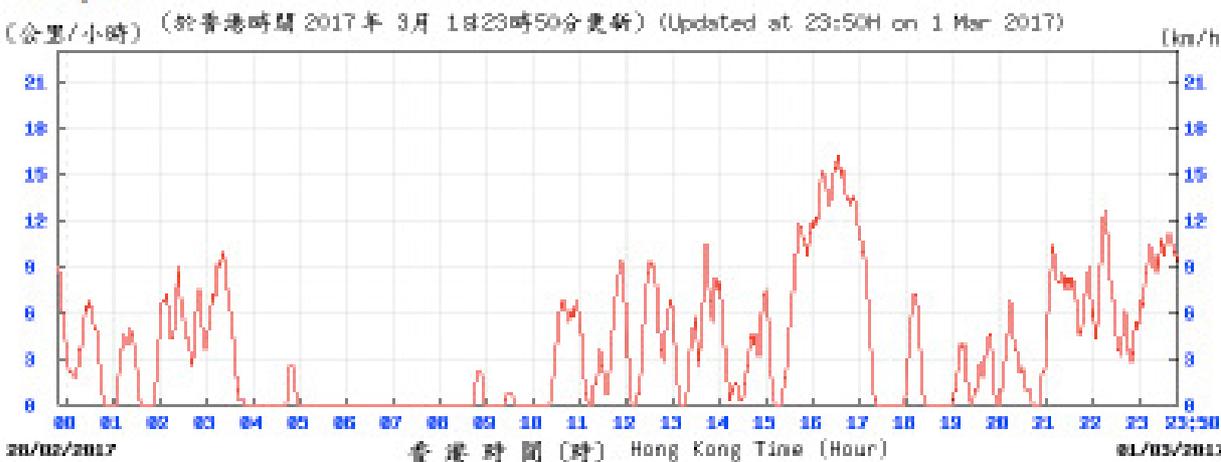
Pressure:



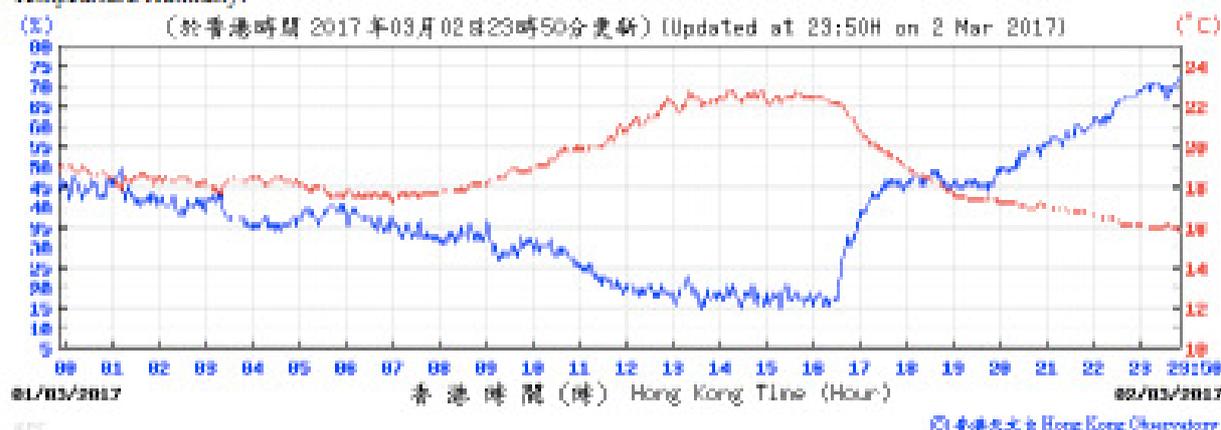
Wind Direction:



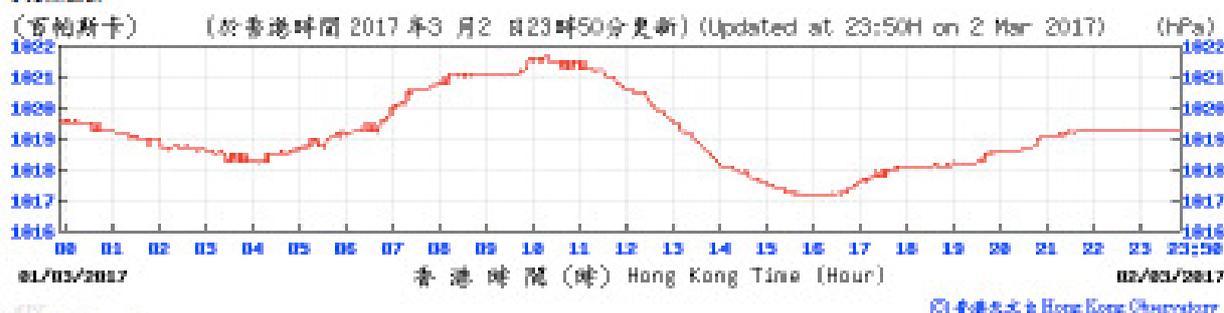
Wind Speed:



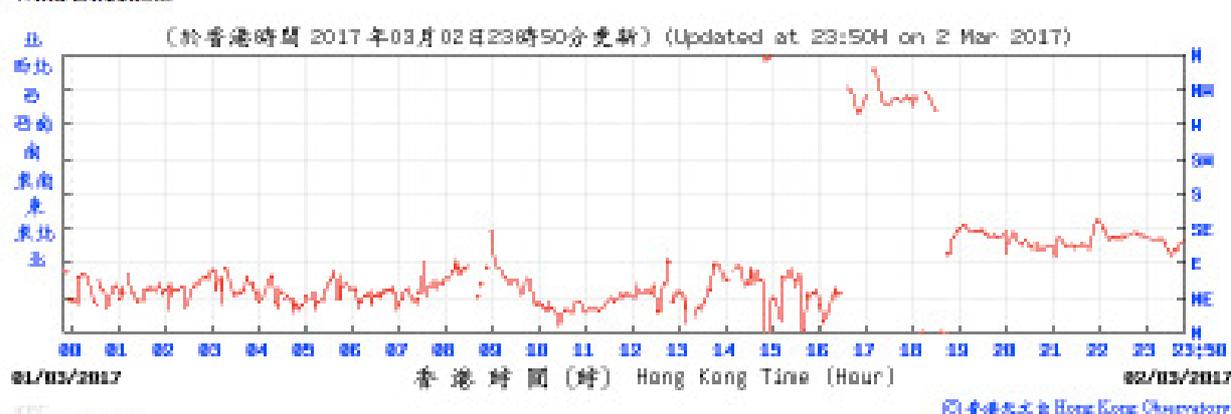
Temperature/Humidity:



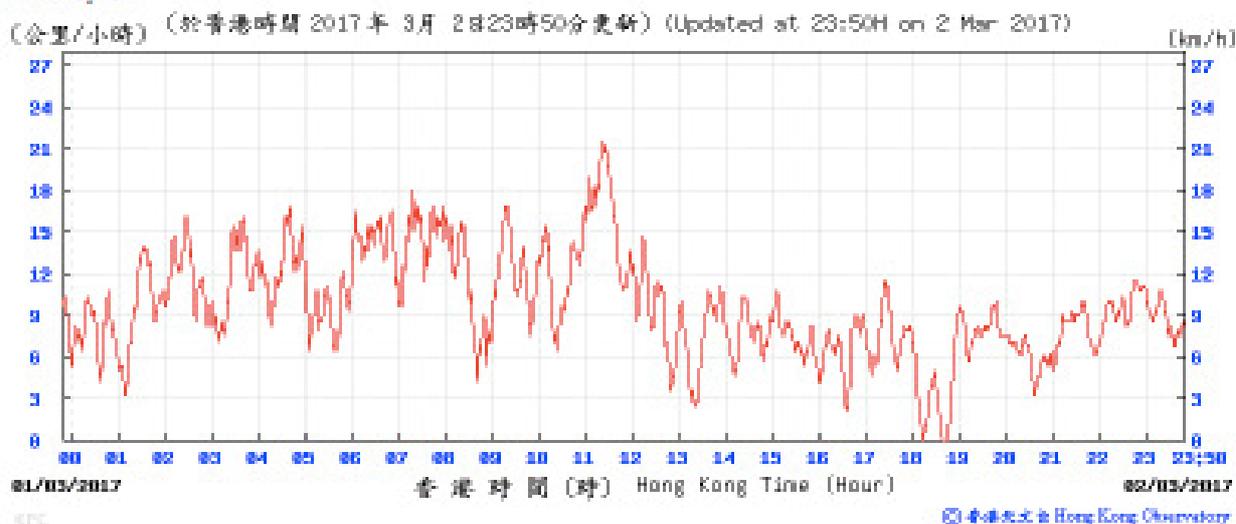
Pressure:



Wind Direction:



Wind Speed:



# I. Waste Flow table

**M+ Museum**

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
<b>2015</b>													
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
<b>2016</b>													
Jan	21077.4	0.0	6352.0	14576.0	149.4	0.0	0.0	18.8	0.0	0.0	0.0	0.0	23.2
Feb	7626.2	0.0	3424.0	4048.0	154.2	0.0	0.0	59.8	0.0	0.0	0.0	0.0	20.5
Mar	10442.5	0.0	1600.0	7888.0	954.5	0.0	0.0	29.7	0.0	0.0	0.0	0.0	46.3
Apr	30413.2	0.0	6352.0	23408.0	653.2	0.0	0.0	25.8	0.1	0.0	27.8	0.0	34.5
May	24083.5	0.0	112.0	23216.0	755.5	0.0	0.0	61.5	0.4	0.0	33.6	0.0	62.3
Jun	7880.1	0.0	4736.0	2384.0	760.1	0.0	0.0	106.6	0.1	0.0	14.6	0.0	52.8
Jul	5893.1	0.0	2656.0	2240.0	997.1	0.0	0.0	77.6	0.0	0.0	33.6	0.0	83.1
Aug	13709.6	0.0	0.0	12432.0	1277.6	0.0	0.0	111.3	0.3	0.0	38.5	0.0	104.9
Sep	6702.0	0.0	0.0	5648.0	1000.1	53.9	0.0	104.2	0.0	0.0	45.5	0.2	107.9
Oct	2103.6	0.0	0.0	496.0	1595.4	12.2	0.0	83.0	0.4	0.0	73.5	0.0	108.2
Nov	3302.7	0.0	0.0	2384.0	855.5	63.2	0.0	88.4	0.6	0.0	63.0	0.0	129.1
Dec	899.8	0.0	0.0	736.0	126.8	37.0	0.0	48.3	0.6	0.0	70.0	0.0	89.0
Sub-total (2016)	134133.5	0.0	25232.0	99456.0	9279.3	166.3	0.0	814.9	2.5	0.0	400.1	0.2	861.8
Total	210393.8	0.0	25232.0	137317.4	47678.2	166.3	0.0	917.4	2.5	0.0	400.1	1.2	995.4
<b>2017</b>													
Jan	675.2	0.0	0.0	432.0	237.9	5.3	0.0	79.5	1.0	0.0	70.0	0.0	79.7
Feb	927.7	0.0	0.0	768.0	125.6	34.0	0.0	70.5	0.6	0.0	84.0	0.0	81.4
Mar													
Apr													
Sub-total (2017)	1602.9	0.0	0.0	1200.0	363.5	39.3	0.0	150.1	1.6	0.0	154.0	0.0	161.1

**Note:**

-15.52 ton and 110.12 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively in the reporting month.

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

# **Lyric Theatre Complex**

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
<b>2016</b>													
Mar	2702.1	0.0	0.0	0.0	2702.1	0.0	0.0	4.5	0.1	0.0	0.0	0.0	30.6
Apr	8631.5	0.0	0.0	0.0	8631.5	0.0	0.0	16.0	0.0	0.0	0.0	0.0	19.2
May	12487.8	0.0	0.0	0.0	12487.8	0.0	0.0	34.0	0.0	0.0	0.0	0.7	60.5
Jun	8600.8	0.0	0.0	0.0	8600.8	0.0	0.0	31.4	0.2	0.0	0.0	0.5	13.5
Jul	12624.2	0.0	0.0	0.0	12624.2	0.0	0.0	19.6	0.0	0.0	0.0	2.0	9.9
Aug	14419.9	0.0	0.0	0.0	14419.9	0.0	0.0	43.9	0.0	0.0	0.0	0.0	11.1
Sep	13671.3	0.0	0.0	0.0	13671.3	0.0	0.0	59.8	0.0	0.0	0.0	1.6	12.4
Oct	13088.9	0.0	0.0	0.0	13088.9	0.0	0.0	37.1	0.2	1.5	0.0	0.0	15.2
Nov	12424.7	0.0	0.0	0.0	12424.7	0.0	0.0	74.7	0.0	0.0	0.0	1.4	10.2
Dec	12487.6	0.0	0.0	0.0	12487.6	0.0	0.0	13.9	0.0	0.0	0.0	1.3	9.0
Sub-total (2016)	111138.8	0.0	0.0	0.0	111138.8	0.0	0.0	334.7	0.4	1.5	0.0	7.6	191.6
<b>2017</b>													
Jan	9607.8	0.0	0.0	0.0	9607.8	0.0	0.0	29.5	0.0	0.0	0.0	0.0	7.3
Feb	9108.2	0.0	0.0	0.0	9108.2	0.0	0.0	50.2	0.2	0.0	0.0	0.7	9.8
Mar	0.0												
Apr	0.0												
May	0.0												
Jun	0.0												
Sub-total (2017)	18716.0	0.0	0.0	0.0	18716.0	0.0	0.0	79.7	0.2	0.0	0.0	0.7	17.1
Total	129854.7	0.0	0.0	0.0	129854.7	0.0	0.0	414.4	0.6	1.5	0.0	8.3	208.7

Note:

-1,142.06 ton and 7966.1 ton of inert C&D material were disposed of as public fill to Tuen Mun Area 38 and Tseung Kwan O Area 137 respectively in the reporting month.

## **J. Environmental Mitigation Measures – Implementation Status**

**Table J-1: Environmental Mitigation Measures Implementation Status**

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
<b>Air Quality Impact (Construction)</b>			
2.1 & 10.3.1	<p><b>General Dust Control Measures</b></p> <p>Frequent water spraying for active construction areas (12 times a day or once every one hour), including Heavy construction activities such as construction of buildings or roads, drilling, ground excavation, cut and fill operations (i.e., earth moving)</p>	Obs	Obs
2.1 & 10.3.1	<p><b>Best Practice For Dust Control</b></p> <p>The relevant best practices for dust control as stipulated in the Air Pollution Control (construction Dust) Regulation should be adopted to further reduce the construction dust impacts from the Project. These best practices include:</p> <p><i>Good Site Management</i></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><i>Disturbed Parts of the Roads</i></p> <ul style="list-style-type: none"> <li>• Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or</li> <li>• Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet.</li> </ul> <p><i>Exposed Earth</i></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><i>Loading, Unloading or Transfer of Dusty Materials</i></p> <ul style="list-style-type: none"> <li>• All dusty materials should be sprayed with water immediately prior to any loading or transfer operation</li> </ul>	Obs	✓
		✓	✓
		N/A	N/A
		✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	so as to keep the dusty material wet.		
	<i>Debris Handling</i>		
	<ul style="list-style-type: none"> <li>Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped.</li> </ul>	✓	✓
	<i>Transport of Dusty Materials</i>		
	<ul style="list-style-type: none"> <li>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.</li> </ul>	Obs	✓
	<i>Wheel washing</i>		
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<i>Use of vehicles</i>		
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<i>Site hoarding</i>		
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
2.1 & 10.3.1	<p><b>Best Practicable Means for Cement Works (Concrete Batching Plant)</b></p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93) should be followed and implemented to further reduce the construction dust impacts of the Project. These best practices include:</p> <p>Exhaust from Dust Arrestment Plant</p>		

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

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
3.1 & 10.4.1	<b>Use of Movable Noise Barriers</b> 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	<b>Use of Noise Enclosure/ Acoustic Shed</b> 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	<b>Use of Noise Insulating Fabric</b> 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	<b>Scheduling of Construction Works outside School Examination Periods</b> 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
<b>Water Quality Impact (Construction)</b>			
4.1 & 10.5.1	<b>Construction site runoff and drainage</b> The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts: <ul style="list-style-type: none"> <li>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;</li> <li>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.</li> <li>All drainage facilities and erosion and sediment control structures should be regularly inspected and</li> </ul>	✓	✓
		✓	✓
		Obs	Obs

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.		
	<ul style="list-style-type: none"> <li>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.</li> </ul>	Rem	✓
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>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.</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>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.</li> </ul>	N/A	N/A
	<b>Barging facilities and activities</b>		
	Recommendations for good site practices during operation of the proposed barging point include:		
	<ul style="list-style-type: none"> <li>All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;</li> </ul>	N/A	N/A
	<ul style="list-style-type: none"> <li>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</li> </ul>	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	materials or polluted water during loading or transportation;		
	<ul style="list-style-type: none"> <li>All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and</li> <li>Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.</li> </ul>	N/A	N/A
		N/A	N/A
4.1 & 10.5.1	<b>Sewage effluent from construction workforce</b> 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	<b>General construction activities</b> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	✓	✓
		Obs	Obs
<b>Waste Management Implications (Construction)</b>			
6.1 & 10.7.1	<b>Good Site Practices</b> Recommendations for good site practices during the construction activities include:		
	<ul style="list-style-type: none"> <li>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</li> <li>Training of site personnel in proper waste management and chemical handling procedures</li> <li>Provision of sufficient waste disposal points and regular collection of waste</li> <li>Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction to public roads</li> <li>Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the inert or non-inert C&amp;D materials is not anticipated</li> </ul>	✓	✓
		✓	✓
		Obs	Obs
		Obs	✓
		✓	✓
		✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	<p><b>Waste Reduction Measures</b></p> <p>Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>Sort inert C&amp;D material to recover any recyclable portions such as metals</li> <li>Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal</li> <li>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</li> <li>Proper site practices to minimise the potential for damage or contamination of inert C&amp;D materials</li> <li>Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste</li> </ul>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>
6.1 & 10.7.1	<p><b>Inert and Non-inert C&amp;D Materials</b></p> <p>In order to minimise impacts resulting from collection and transportation of inert C&amp;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&amp;D material generated from excavation works could be reused as fill materials in local projects that require public fill for reclamation.</p> <ul style="list-style-type: none"> <li>The surplus inert C&amp;D material will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong.</li> <li>Liaison with the CEDD Public Fill Committee (PFC) on the allocation of space for disposal of the inert C&amp;D materials at PFRF is underway. No construction work is allowed to proceed until all issues on management of inert C&amp;D materials have been resolved and all relevant arrangements have been endorsed by the relevant authorities including PFC and EPD.</li> <li>The C&amp;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.</li> <li>In order to monitor the disposal of inert and non-inert C&amp;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 &amp; Demolition Materials issued by Development Bureau. In addition, it is also recommended that the Contractor should prepare and implement a Waste Management Plan detailing their various waste arising and waste management practices in accordance with the relevant requirements of the Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site.</li> </ul>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	<p><b>Chemical Waste</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	Rem/ Obs	Obs
6.1 & 10.7.1	<p><b>General Refuse</b></p> <p>General refuse should be stored in enclosed bins or compaction units separated from inert C&amp;D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&amp;D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</p>	✓	✓
<b>Land Contamination (Construction)</b>			
7.1 & 10.8.1	<p>The potential for land contamination issues at the TST Fire Station due to its future relocation will be confirmed by site investigation after land acquisition. Where necessary, mitigation measures for minimising potential exposure to contaminated materials (if any) or remediation measures will be identified. If contaminated land is identified (e.g., during decommissioning of fuel oil storage tanks) after the commencement of works, mitigation measures are proposed in order to minimise the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially contaminated materials.</p> <p>The following measures are proposed for excavation and transportation of contaminated material:</p> <ul style="list-style-type: none"> <li>To minimize the chance for construction workers to come into contact with any contaminated materials, bulk earth-moving excavation equipment should be employed;</li> <li>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;</li> <li>Stockpiling of contaminated excavated materials on site should be avoided as far as possible;</li> </ul>	N/A	N/A
		N/A	N/A
		N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	<ul style="list-style-type: none"> <li>The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out;</li> <li>Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater;</li> <li>Truck bodies and tailgates should be sealed to stop any discharge;</li> <li>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;</li> <li>Speed control for trucks carrying contaminated materials should be exercised;</li> <li>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</li> <li>Maintain records of waste generation and disposal quantities and disposal arrangements.</li> </ul>	N/A	N/A
<b>Ecological Impact (Construction)</b>			
No mitigation measure is required.			
<b>Landscape and Visual Impact (Construction)</b>			
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
Table 9.1 & 10.8 (CM2)	Compensatory tree planting shall be incorporated to the proposed project and maximize the new tree, shrubs and other vegetation planting to compensate tree felled and vegetation removed. Also, implementation of compensatory planting should be of a ratio not less than 1:1 in terms of quality and quantity within the site.	N/A	N/A
Table 9.1 & 10.8 (CM3)	Buffer trees for screening purposes to soften the hard architectural and engineering structures and facilities.	N/A	N/A
Table 9.1 & 10.8 (CM4)	Softscape treatments such as vertical green wall panel /planting of climbing and/or weeping plants, etc, to maximize the green coverage and soften the hard architectural and engineering structures and facilities.	N/A	N/A
Table 9.1 & 10.8 (CM5)	Roof greening by means of intensive and extensive green roof to maximize the green coverage and improve aesthetic appeal and visual quality of the building/structure.	N/A	N/A
Table 9.1 & 10.8 (CM6)	Sensitive streetscape design should be incorporated along all new roads and streets.	N/A	N/A

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

N/A - Not Applicable

✓ - Implemented

Obs - Observed

Rem - Reminder

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

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

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

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

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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting month	0	0	0
From 1 March 2016 to end of the reporting month	4	0	0