



Development at West Kowloon Cultural District

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

July 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

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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:




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

Date

13.7.2017

Verified by:



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

Date

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Executive Summary

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

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

This Monthly EM&A Report presents the monitoring works at both the main works of M+ Museum and foundation works of Lyric Theatre Complex conducted from 1 June to 30 June 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 1, 8, 15, 22 and 30 June 2017 for M+ Museum and 7, 14, 21 and 27 June 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 23 June 2017 at M+ Museum. No malpractice was observed.

EPD site inspection with Contractor was conducted on 7 and 23 June 2017 at Lyric Theatre Complex. No adverse comments were received.

Record of Complaints

No environmental complaints were recorded in the reporting month.

Record of Notification of Summons and Successful Prosecutions

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

Future Key Issues

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

- Construction of 3/F, 2/F, 1M/F, 1/F, G/F, LG/F, B1 slab;
- Construction of column from B1 to LGF, LGF to GF, G/F to 1/F, 1/F to 1M/F, 1M/F to 2/F, 2/F to 3/F;
- Construction of mega truss;
- ABWF work at DCS;
- E&M work at B2/F and SPS;
- Construction of B1 slab and beam and Roof Beam and slab at ICP
- Sheet Pile Installation for seawater outfall pipe between Ch0+66 to Ch0+108
- Storm Drainage at Portion M45
- Sewerage work at Portion L08

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

- Pumping Test
- Preparation works for ELS

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 (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. 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 June to 30 June 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 3/F, 2/F, 1M/F, 1/F, G/F, LG/F, B1 slab;

- Construction of column from B1 to LGF, LGF to GF, G/F to 1/F, 1/F to 1M/F, 1M/F to 2/F, 2/F to 3/F;
- Installation of mega truss;
- ABWF work at DCS;
- E&M work at B2/F and SPS;
- Construction of B1 slab and beam and Roof Beam and slab at ICP
- Sheet Pile Installation for seawater outfall pipe between Ch0+66 to Ch0+108
- Storm Drainage at Portion M45
- Sewerage work at Portion L08

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

- Installation of Monitoring Instrumentation
- Pipe Pile Construction
- Pumping Test
- Pile Loading Test

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

1.4 Summary of EM&A Requirements

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

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

Table 1.1: Summary of Impact EM&A Requirements

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

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

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

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

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

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

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

2 Impact Monitoring Methodology

2.1 Introduction

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

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

2.2 Air Quality

2.2.1 Monitoring Parameters, Frequency and Duration

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

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

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

2.2.2 Monitoring Locations

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

Table 2.2: Air Quality Monitoring Station

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

2.2.3 Monitoring Equipment

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

Table 2.3: TSP Monitoring Equipment

Equipment	Model
24-hour TSP monitoring	
High Volume Sampler	TE-5170 (Serial No.: 0767 and 8919)
Calibrator	TE-5025A (Orifice I.D.: 2454)
1-hour TSP monitoring	
Portable direct reading dust meter	Sibata LD-3B (Serial No.: 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 m³/min. The range specified in the EM&A Manual was between 0.6-1.7 m³/min.

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

Maintenance and Calibration

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

1-hour TSP Monitoring

Field Monitoring

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

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

Maintenance and Calibration

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

Weather Condition

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

2.3 Noise

2.3.1 Monitoring Parameters, Frequency and Duration

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

Table 2.4: Noise Monitoring Parameters, Period and Frequency

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

2.3.2 Monitoring Location

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

Table 2.5: Noise Monitoring Station

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

2.3.3 Monitoring Equipment

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

Table 2.6: Noise Monitoring Equipments

Monitoring Station	Equipment Model	
	Integrating Sound Level Meter	Calibrator
NM1A	Rion NL-18 (Serial No.00360030)	Rion NC-73 (Serial No.10486660)

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	01-Jun-17	10:48	44	47	50	38-85	273.7	500
	07-Jun-17	10:40	42	44	50			
	13-Jun-17	14:00	70	77	85			
	19-Jun-17	10:40	44	52	59			
	23-Jun-17	8:02	38	41	40			
	30-Jun-17	8:00	38	40	41			
AM2A	01-Jun-17	11:12	49	63	60	44-88	274.2	500
	07-Jun-17	10:52	51	62	48			
	13-Jun-17	14:12	72	88	86			
	19-Jun-17	10:52	46	52	49			
	23-Jun-17	8:14	51	49	50			
	30-Jun-17	8:12	46	52	44			

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	01-Jun-17	11:00	40	35-45	143.6	260
	07-Jun-17	10:38	42			
	13-Jun-17	14:02	45			
	19-Jun-17	10:42	44			
	23-Jun-17	08:00	35			
	30-Jun-17	08:02	42			
AM2A	01-Jun-17	11:10	56	40-81	151.1	260
	07-Jun-17	10:50	81			
	13-Jun-17	14:14	48			

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 ($\mu\text{g}/\text{m}^3$)
	19-Jun-17	10:54	52			
	23-Jun-17	08:12	40			
	30-Jun-17	08:14	43			

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))
01-Jun-17	14:00	14:30	69	
07-Jun-17	14:00	14:30	69	
13-Jun-17	16:25	16:55	69	75
19-Jun-17	14:00	14:30	69	
30-Jun-17	10:30	11:00	70	

Remarks:

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

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

Construction works were extended to holidays on 4 and 25 June 2017. In accordance with the EM&A Manual, additional monitoring was carried out during the restricted hours on 4 and 25 June 2017. The Leq (5 mins) is in the range of 67-70 dB(A). Major noise source includes traffic. Construction Noise Permits for the works carried out during restricted hours were obtained and listed in **Table 4.3**.

3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 8 and 22 June 2017 for M+ Museum and 7 and 21 June 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 1, 8, 15, 22 and 30 June 2017. The joint site inspection with IEC, ET, ER and Contractor was held on 15 June 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**.

EPD site inspection with Contractor was conducted on 23 June 2017. The seafront and wastewater treatment facilities were inspected and no malpractice was observed.

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)
25 May 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 at the haul road.	1 Jun 2017
25 May 2017	Air quality	Cement bags were found without any cover at B2. The contractor was reminded to cover the cement bags with impervious sheeting.	The contractor has removed the previously observed uncovered cement bags.	1 Jun 2017
25 May 2017	Waste management	Construction waste/ general refuse was observed accumulated at B2. The contractor was reminded to remove the construction waste/ refuse.	The contractor has removed the construction waste at B2.	1 Jun 2017
1 Jun 2017	Air quality	Cement bags were found uncovered at B2. The contractor was reminded to cover the cement bags with impervious sheeting.	The contractor has either removed the previously uncovered cement bags or covered them with impervious sheeting.	8 Jun 2017
1 Jun 2017	Water quality	The contractor was reminded to provide sand bags at the bund near the seafront in case of heavy rainfall.	On 8 June, the bund was not enhanced with sand bags at seafront. The contractor was reminded to follow this as soon as possible. On 15 Jun, the contractor has maintained the bund near the seafront.	15 Jun 2017
1 Jun 2017	Waste management	Construction waste was found accumulated at B2. The contractor was reminded to remove the construction waste.	The contractor has removed the construction waste at B2.	8 Jun 2017
1 Jun 2017	Water quality	Effluent quality at ICP sampling point and M+ wetsep was checked. They were all visually clear when comparing to standard solution and within proper pH range.	N/A	N/A
1 Jun 2017	Waste management	Oil stain was found on the ground near DCS. The contractor was	The contractor has rectified the oil stain near DCS.	8 Jun 2017

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
		reminded to rectify it and treat it as chemical waste.		
8 Jun 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 at the haul road.	15 Jun 2017
8 Jun 2017	Waste management	Construction waste was found accumulated at B2. The contractor was reminded to remove them.	The contractor has removed the accumulated construction waste at B2.	15 Jun 2017
8 Jun 2017	Waste management	Chemicals were found without drip trays. The contractor was reminded to provide drip trays for the chemicals or remove them off site.	The contractor has removed the chemicals previously observed without drip trays.	15 Jun 2017
8 Jun 2017	Water quality	Effluent quality at ICP sampling point was checked. They were all visually clear when comparing to standard solution and within proper pH range.	N/A	N/A
8 Jun 2017	Air quality	Cement bags were found uncovered at B2. The contractor was reminded to cover them with impervious sheeting to reduce dust impact.	The contractor has covered the cement bags at B2 with impervious sheeting.	15 Jun 2017
15 Jun 2017	Air quality	Haul road was observed dry and dusty. The contractor was reminded to enhance water spraying to reduce dust impact.	On 22 June, the haul road was observed wet near Gate 3, but the haul road near DCS was still observed dry and dusty. The contractor was reminded to further enhance water spraying. On 23 June, the contractor has enhanced water spraying at haul road near DCS.	23 Jun 2017
15 Jun 2017	Water quality	Stagnant water was found near the seafront. The contractor was reminded to provide sufficient pumps to remove the stagnant water and enhance the bunding near the seafront.	On 22 Jun, the stagnant water near seafront was still observed. The contractor has provided pumps and bund at the seafront near M38 area. However, the contractor was reminded to further enhance the bund at seafront near DCS and remove stagnant water on the ground. On 30 Jun, the contractor has removed the stagnant water on the ground and enhanced the bund at seafront near DCS	30 Jun 2017
15 Jun 2017	Water quality	Effluent quality at ICP sampling point was checked. They were all visually clear when comparing to standard solution and within proper pH range.	N/A	N/A
22 Jun 2017	Waste management	Oil mixture was found in the drip trays. The contractor was reminded to clean the drip tray and treat the oil mixture as chemical waste.	The contractor has cleaned the drip tray and the other tray was removed offsite.	23 Jun 2017
22 Jun 2017	Air quality	Cement bags were found without proper cover at B2. The contractor was reminded to cover them with impervious sheeting to reduce dust impact.	The contractor has covered the cement bags at B2 with impervious sheeting.	23 Jun 2017
22 Jun 2017	Waste	Construction waste was found	The contractor has removed the	23 Jun 2017

Inspection Date	Parameter	Observation / Recommendation	Contractor's Responses / Action(s) Undertaken	Close-out (Date)
	management	accumulated near Gate 3. The contractor was reminded to remove the construction waste regularly.	construction waste near Gate 3.	
22 Jun 2017	Water quality	Effluent quality at ICP sampling point was checked. They were visually clear when comparing with standard solution and within proper pH range.	N/A	N/A
22 Jun 2017	Waste management	Oil drums were found without drip trays. The contractor was reminded to provide drip trays for the oil drums.	On 30 Jun, the contractor has removed part of the oil drums. However, two oil drums were still observed without drip trays. The contractor was reminded to remove them offsite or provide drip trays. Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Water quality	The contractor was reminded to provide pits and 4" pumps near the seafront.	Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Water quality	As requested by EPD, the contractor is required to further enhance the bund at the seafront as it is considered not high enough. According to site observation, the contractor has not enhanced the bund yet. The contractor was reminded to provide a higher bund near the seafront.	Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Water quality	Effluent quality at ICP sampling point was checked. They were all visually clear when comparing with standard solution and with proper pH range.	N/A	N/A
30 Jun 2017	Waste management	Construction waste was observed at B2. The contractor was reminded to remove the waste regularly.	Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Air quality	The haul road at DCS was observed dry and dusty. The contractor was reminded to enhance water spraying to reduce dust impact.	Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Waste management	Refuse was found on G/F of RDE. The contractor was reminded to remove them and provide more rubbish bins.	Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Air quality	Cement bags at B2 were observed without proper cover. The contractor was reminded to cover them with impervious sheeting.	Follow-up status will be provided in the next reporting month	On-going
30 Jun 2017	Noise	A construction blower was found without proper cover. The contractor was reminded to maintain it properly to reduce the noise impact.	Follow-up status will be provided in the next reporting month	On-going

4.1.2 Lyric Theatre Complex

Construction phase weekly site inspections were carried out on 7, 14, 21 and 27 June 2017. The joint site inspection with IEC, ET, ER and Contractor was held on 21 June 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 4.2**.

EPD site inspection was conducted on 7 and 23 June 2017. On 7 June 2017, EPD conducted a follow-up inspection to check the submitted investigation report for the muddy water incident on 24 May 2017. They inspected and took photos of the site drainage system and seafront area. On 23 June 2017, EPD conducted a general inspection and took photos at seafront area. No adverse comments were received during both inspections.

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

Inspection Date	Parameter	Observation / Recommendation	Contactors' Responses / Action(s) Undertaken	Close-out (Date)
31 May 2017	Air quality	Dry ground was observed at Area L04. The contractor was reminded to increase water spraying frequency to reduce dust impact.	Regular spraying of water and proper cover for dust suppression were conducted.	5 Jun 2017
31 May 2017	Water quality	Suspended solid was observed at wetsep No.2. The contractor was reminded to clear the suspended solid in order to keep the quality of discharge water.	Suspended solid cleared and good quality of discharge being maintained	5 Jun 2017
7 Jun 2017	Air quality	Haul road was observed dry near the car park. The Contractor was reminded to increase water spraying frequency in order to avoid dust impact.	Regular spraying of water on the concerned haul road was conducted.	10 Jun 2017
14 Jun 2017	Waste management	The Contractor was reminded to provide suitable bunded area with drip tray for storage of chemical containers.	Suitable bunded area was provided and the storage tank was plugged already.	19 Jun 2017
14 Jun 2017	Water quality	Turbid water was observed at wetsep No.2. The Contractor was reminded to clean up the sludge in order to keep good quality of discharge water.	Sludge was cleaned and discharge was kept in good quality.	19 Jun 2017
21 Jun 2017	Waste management	Unplugged drip trays and leakage of stagnant water was observed in works area. The contractor was reminded to check the drip trays and plugged them properly to stop the leakage.	The drip trays were checked and plugged properly.	26 Jun 2017
27 Jun 2017	Waste management	Some drip trays were still unplugged in works area. The contractor was reminded to check the drip trays and plugged them properly to stop the stagnant water leakage.	Follow-up status will be provided in the next reporting month	On-going

4.2 Advice on the Solid and Liquid Waste Management Status

The Contractors have been registered as a chemical waste producer for the Project. Construction and demolition (C&D) material sorting will be carried out on site. A sufficient number of receptacles were available for general refuse collection.

4.2.1 M+ Museum

As advised by the Contractor, 40.78 tonnes, 119.16 tonnes and 291.63 tonnes of inert C&D material were disposed of as public fill to Chai Wan Public Fill Barging Point, Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively, while 98.7 tonnes of general refuse was disposed of at SENT landfill. 58.2 tonnes of metals¹, 1.4 tonnes of paper/cardboard packaging, 0 tonne of plastic and

¹ Since some metal generation amounts are still outstanding at the time of this report submission, the actual total amount of metals generated in June 2017 will be updated in the Appendix I of the Monthly EM&A Report for the next reporting month.

350.0 tonnes of timber were collected by recycling contractors in the reporting month. 0 tonne of inert C&D materials was reused on site. 0 tonne of inert C&D materials were reused in other projects and 198.4 tonnes of inert C&D materials were disposed to sorting facility. 0 tonne 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, 129.72 tonnes of inert C&D material were disposed of as public fill to Tseung Kwan O Area 137, while 7.6 tonnes of general refuse was disposed of at SENT landfill. 0 tonne of metals, 0 tonne of paper/cardboard packaging, 0 tonne of plastic and 0 tonne of timber were collected by recycling contractors in the reporting month. 0 tonne of inert C&D materials was reused on site. 341.0 tonnes of inert C&D materials was reused in other projects and 5.3 tonnes of inert C&D materials were disposed to sorting facility. 0 tonne 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 Lyric Theatre Complex in the reporting month are shown in **Appendix I**.

4.3 Status of Environmental Licenses and Permits

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

4.3.1 M+ Museum

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

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Chemical Waste Producer Registration				
5213-217-H2913-45	05-Nov-15	--	Valid	--
Billing Account Construction Waste Disposal				
7023393	13-Oct-15	--	Account Active	--
Construction Noise Permit				
GW-RE0348-17	4-May 17	3-Nov-17	Valid	
Wastewater Discharge License				
WT00023633-2016	4-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
394083	7-Oct-15	--	Notified	--

4.3.2 Lyric Theatre Complex

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

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

Permit / License	Valid Period		Status	Remarks
7024189	25-Jan-16	--	Account Active	--
Construction Noise Permit				
GW-RE0214-17	20-Mar-17	19-Sep-17	Valid	
Wastewater Discharge License				
WT00023648-2016	9-Mar-16	31-Mar-21	Valid	--
Notification under Air Pollution Control (Construction Dust) Regulation				
398075	18-Jan-16	--	Notified	--

4.4 Recommended Mitigation Measures

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

4.4.1 M+ Museum

Chemical and Waste Management

- All chemical drum/ containers stored on site should be provided with drip trays.
- Any oil stain found on the ground should be removed and treat it as chemical waste.
- Construction waste/ general refuse generated on site should be regularly removed and sufficient rubbish bins should be provided.
- Drip trays should be regularly cleaned up to avoid accumulation of 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.
- Cement bags should be well covered by impervious sheeting to reduce dust impact.

Water Quality

- Preventive measures, such as earth bund, pumps, sand bags, storage pits, should be in place near the seafront area to prevent overflow of any site runoff into the sea in case of rainstorms.
- Stagnant water on site, especially near the seafront should be regularly removed.

Noise

- All machinery should be properly maintained to reduce noise impact.

4.4.2 Lyric Theatre Complex

Chemical and Waste Management

- All chemical drum/ containers should be stored in bunded area/ drip trays.
- Drip trays should be properly plugged to prevent chemical waste leakage.

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.

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 May 2017	14 June 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 complaints were recorded in the reporting month. The cumulative statistics on complaints were provided in **Appendix K**.

6.3 Record on Notifications of Summons and Successful Prosecution

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

7 Future Key Issues

7.1 Construction Works for the Coming Month(s)

7.1.1 M+ Museum

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

- Construction of 3/F, 2/F, 1M/F, 1/F, G/F, LG/F, B1 slab;
- Construction of column from B1 to LGF, LGF to GF, G/F to 1/F, 1/F to 1M/F, 1M/F to 2/F, 2/F to 3/F;
- Construction of mega struss;
- ABWF work at DCS;
- E&M work at B2/F and SPS;
- Construction of B1 slab and beam and Roof Beam and slab at ICP
- Sheet Pile Installation for seawater outfall pipe between Ch0+66 to Ch0+108
- Storm Drainage at Portion M45
- Sewerage work at Portion L08

7.1.2 Lyric Theatre Complex

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

- Pumping Test
- Preparation works for ELS

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.

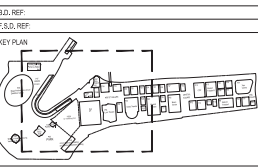
No environmental complaints were recorded in the reporting month. No notifications of summons or successful prosecution were received during the reporting month.

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



- NOTES:
- WKCD BOUNDARY
 - M+ MUSEUM BOUNDARY
 - LYRIC THEATRE BOUNDARY
 - BOUNDARY OF UNDERPASS ROAD SERVING THE PLANNED WKCD
 - CONSTRUCTION AIR/NOISE MONITORING STATION

REV.	DATE	DESCRIPTION	INITIAL

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

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

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

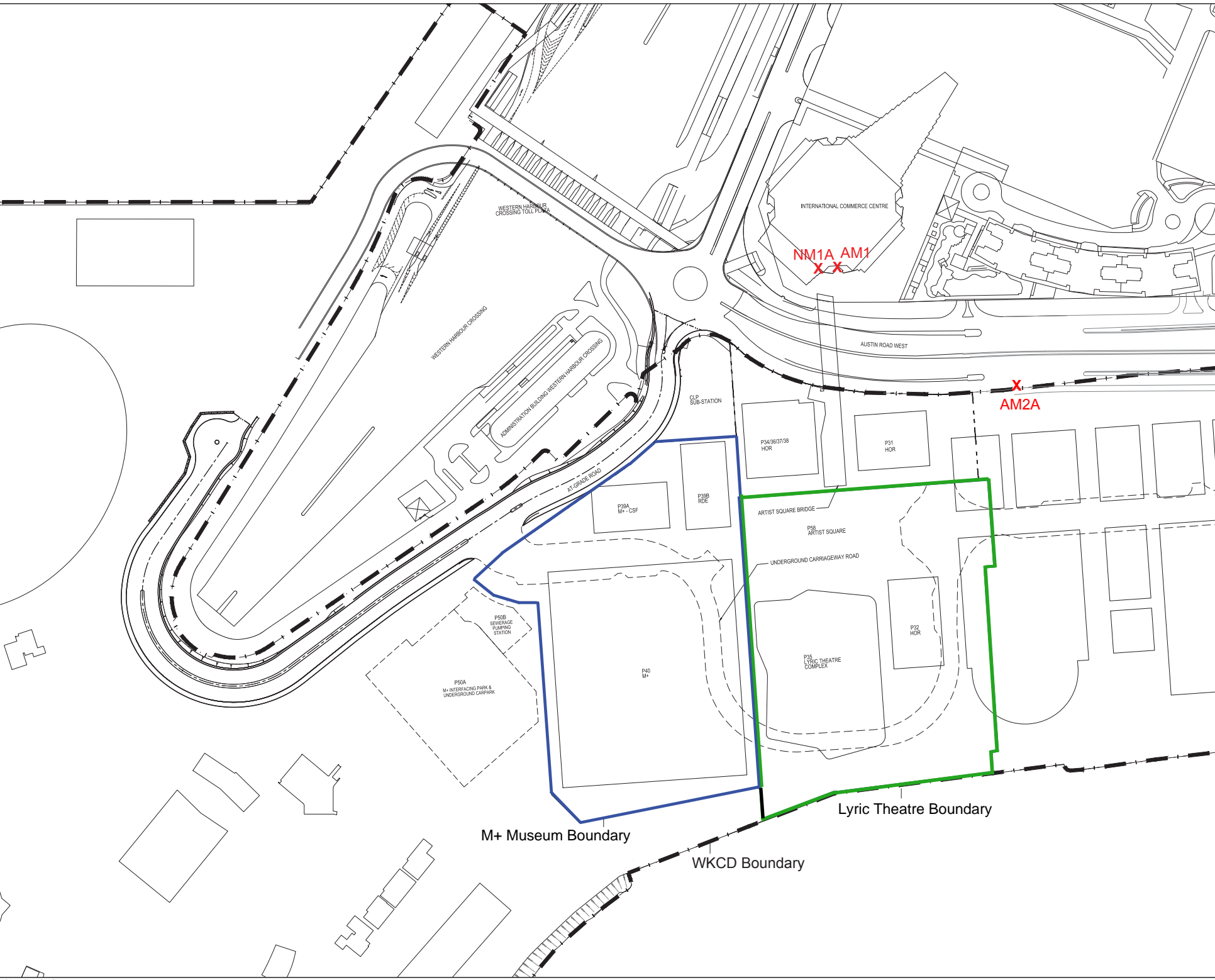
CONTRACT NO.:

DRAWING NO.	FIGURE 1	REV.	XA
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CAD REF NAME: XXXXX\AUT-PMS-DWG-POU\000000-XXX.dwg

AUTHORITY:

westKowloon
西九文化區



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A. Project Organisation

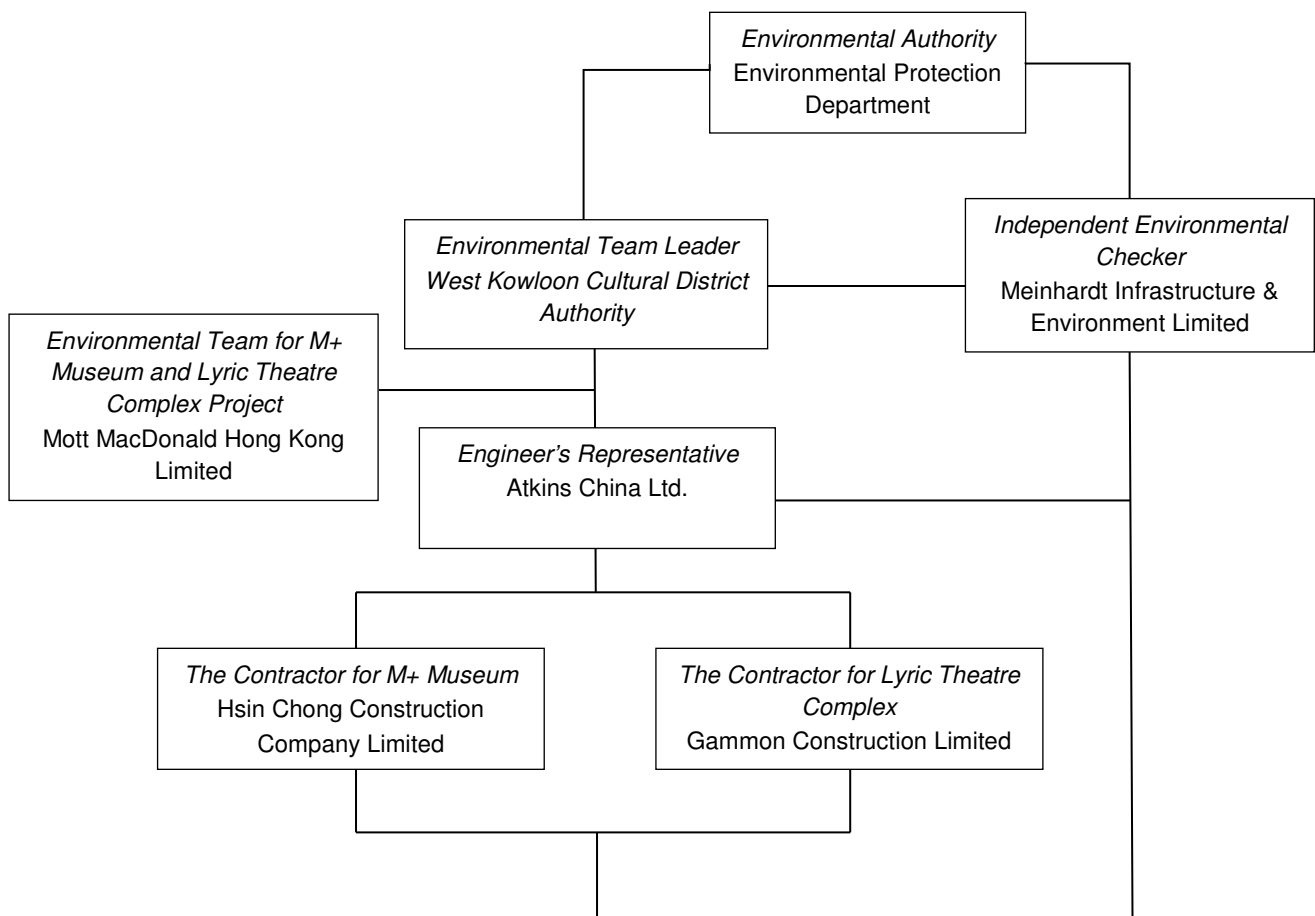


Table A-1: Contact information

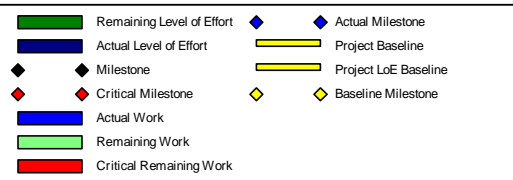
Company Name	Role	Name	Telephone
Atkins China Ltd.	Resident Engineer	Mr. Benny Ip	9379 5614
Meinhardt Infrastructure & Environment Limited	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739
Hsin Chong Construction Company Limited	Environmental Manager	Mr. Leo Chow	9266 6855
Gammon Construction 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) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June				July				August				September				October							
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08				
Three Months Rolling Programme 3MRP - Mth21 (30 June 2017)																																		
M+																																		
Contract Dates																																		
CD01	Contract Period (1218 days)	800	17-Dec-16	24-Feb-19	17-Dec-16	25-Mar-19	24.38%	22.87%	-29																									
Contract Key Dates																																		
CKD07	Interfacing Car Park (ICP) - Complete of Structure	0		25-Jun-17		12-Jul-17*	100%	0%	-16																									
CKD01	Sewage Pumping Station (SPS) - Practical Completion for	0		25-Jun-17		18-Sep-17*	100%	0%	-85																									
Forecast Completion Dates																																		
KD07	Interfacing Car Park (ICP) - Complete of Structure	0		25-Jun-17		12-Jul-17*	100%	0%	-16																									
KD01	Sewage Pumping Station (SPS) - Practical Completion for	0		15-Sep-17		18-Sep-17*	0%	0%	-3																									
Critical Key Dates																																		
Critical Key Dates - Mega Truss Works																																		
Critical Key Dates - Removal of Falsework																																		
A18440	Complete Removal of T3 falseworks	0		01-Nov-17		13-Sep-17	0%	0%	39																									
Critical Key Dates - Mega Truss Erection & Construction																																		
A13130	Complete Truss 3 - Steel Erection	0		10-Jun-17		18-May-17 A	100%	100%	20																									
A15500	Complete Truss 4 - Steel Erection	0		13-Jun-17		30-May-17 A	100%	100%	12																									
A50580	Complete Truss 5 - Steel Erection	0		18-Jul-17		10-Jun-17 A	0%	100%	32																									
A46675	Complete Truss 2 - Steel Erection	0		26-May-17		22-Jun-17 A	100%	100%	-21																									
A40518	Complete Truss 1 - Steel Erection	0		01-Jun-17		23-Jun-17 A	100%	100%	-18																									
A46720	Complete Truss 2 Construction	0		01-Aug-17		07-Aug-17	0%	0%	-4																									
A40525	Complete Truss 1 - Construction	0		04-Aug-17		07-Aug-17	0%	0%	-2																									
A13200	Complete Truss 3 - Construction	0		03-Aug-17		08-Aug-17	0%	0%	-4																									
A50600	Complete Truss 5 - Construction	0		28-Aug-17		14-Aug-17	0%	0%	13																									
A15520	Complete Truss 4 - Construction	0		14-Aug-17		25-Aug-17	0%	0%	-9																									
Critical Key Dates - M+ Tower Structure RC Works																																		
Critical Key Dates - M+ Tower Structure Works - West Core																																		
A12770	Complete West Core Wall - 5/F Slab, Wall & Column (GL	0		21-Jul-17		23-Aug-17	0%	0%	-28																									
A12780	Complete West Core Wall - 6/F Slab, Wall & Column (GL	0		07-Aug-17		08-Sep-17	0%	0%	-28																									
A12790	Complete West Core Wall - 7/F Slab, Wall & Column (GL	0		21-Aug-17		22-Sep-17	0%	0%	-28																									
A12800	Complete West Core Wall - 8/F Slab, Wall & Column (GL	0		04-Sep-17		09-Oct-17	0%	0%	-28																									
A12810	Complete West Core Wall - 9/F Slab, Wall & Column (GL	0		18-Sep-17		23-Oct-17	0%	0%	-28																									
Critical Key Dates - M+ Tower Structure Works - Tower																																		
A13070	Complete Tower Structure - 5/F Slab, Wall & Column (G	0		23-Sep-17		25-Sep-17	0%	0%	-1																									
Critical Key Dates - M+ Tower Structure Works - East Core																																		
A12920	Complete East Core Wall - 5/F Slab, Wall & Column (GL	0		28-Aug-17		23-Aug-17	0%	0%	5																									
A12930	Complete East Core Wall - 6/F Slab, Wall & Column (GL	0		11-Sep-17		06-Sep-17	0%	0%	5																									
A12940	Complete East Core Wall - 7/F Slab, Wall & Column (GL	0		22-Sep-17		18-Sep-17	0%	0%	5																									
A12950	Complete East Core Wall - 8/F Slab, Wall & Column (GL	0		06-Oct-17		29-Sep-17	0%	0%	5																									
Critical Key Dates - Podium Structure RC Works																																		
A10970	Complete Zone A - B1/F Slab, Wall & Columns	0		14-Jun-17		07-Jan-17 A	100%	100%	126																									
A11110	Complete Zone A - G/F Slab, Wall & Columns	0		31-May-17		10-Jul-17	100%	0%	-33																									
A11920	Complete Zone M - 3/F Slab, Wall & Columns (GL7-8/A-	0		03-Jun-17		13-Jul-17	100%	0%	-33																									
A11810	Complete Zone H - B1/F Slab	0		06-Jun-17		17-Jul-17	100%	0%	-34																									
A12010	Complete Zone C - G/F Slab, Wall & Columns	0		13-Jun-17		24-Jul-17	100%	0%	-34																									
A11930	Complete Zone M - 4/F Slab, Wall & Columns (GL7-8/A-	0		04-Jul-17		28-Jul-17	0%	0%	-21																									
A11820	Complete Zone H - LG/F Slab, Wall & Columns	0		17-Jun-17		28-Jul-17	100%	0%	-34																									
A11120	Complete Zone A - 1M/F Slab, Wall & Columns	0		27-Jun-17		29-Jul-17	100%	0%	-27																									
A11125	Complete Zone A - 2/F Slab, Wall & Columns	0		22-Jul-17		23-Aug-17	0%	0%	-27																									
A12500	Complete Zone E & E1 - 2/F Slab, Wall & Column (GL 12-	0		25-Jul-17		28-Aug-17	0%	0%	-29																									
A12020	Complete Zone C - 1/F Slab, Wall & Columns	0		19-Jul-17		28-Aug-17	0%	0%	-34																									



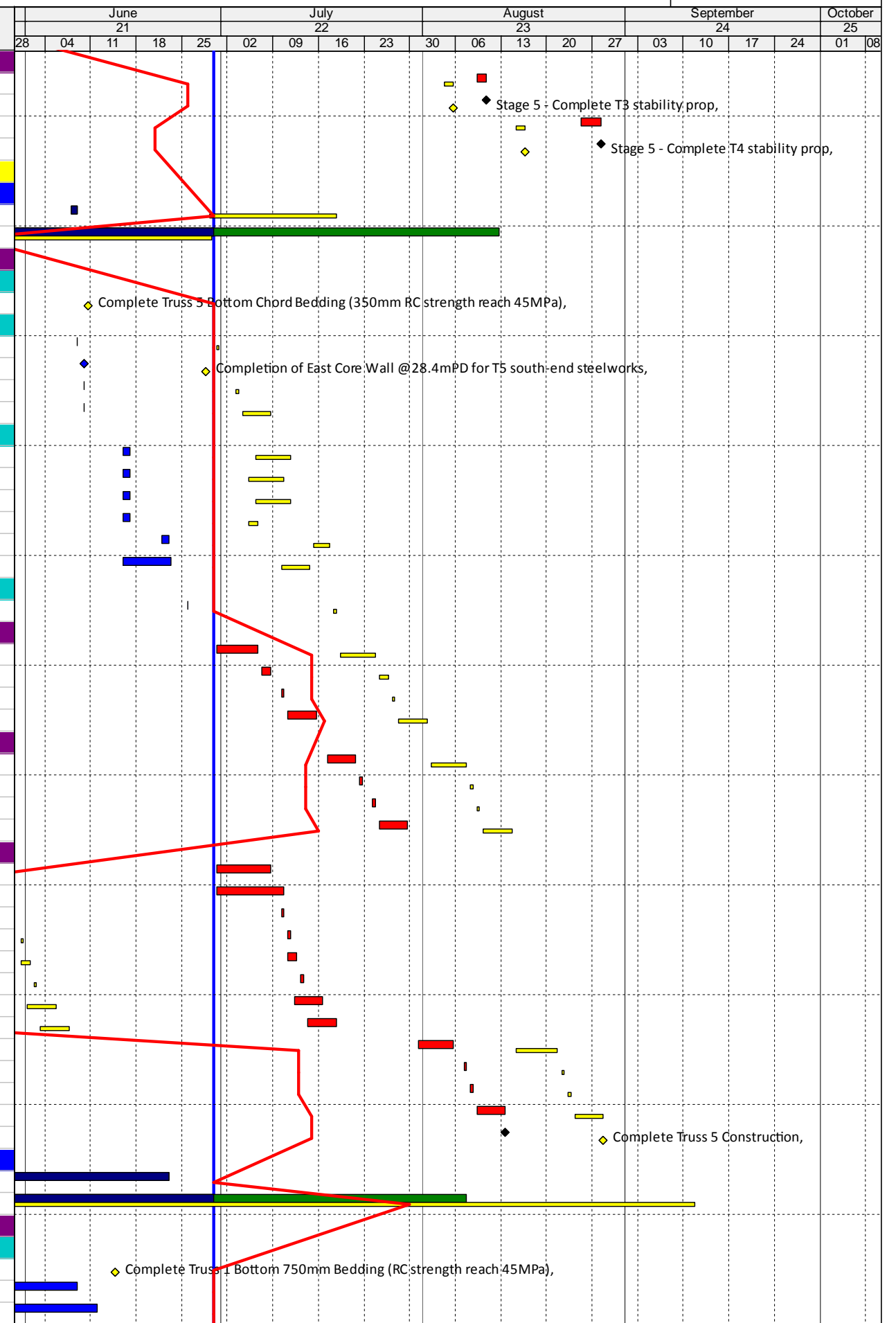
West Kowloon Cultural District Authority
M+ Contractor's Main Works Programme CMWP - (Rev. 0 - Draft 5)



Date	Revision	Checked	Approved
28-Feb-17	3MRP_M17_29 Feb 17	Chris S.	Chis Chau / Ricky Lau
31-Mar-17	3MRP_M18_31 Mar 17	Chris S.	Chis Chau / Ricky Lau
30-Apr-17	3MRP_M19_30 April 17	Chris S.	Chis Chau / Ricky Lau
31-May-17	3MRP_M20_31 May 17	Chris S.	Chis Chau / Ricky Lau
30-Jun-17	3MRP_M21_30 Jun 17	Chris S.	Chis Chau / Ricky Lau

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
Installation of Stability Prop for T3 & T4																															
A16960	Stage 5 - Install T3 stability prop	2	04-Aug-17	05-Aug-17	09-Aug-17	10-Aug-17	0%	0%	-4																						
A16970	Stage 5 - Complete T3 stability prop	0		05-Aug-17		10-Aug-17	0%	0%	-4																						
A16980	Stage 5 - Install T4 stability prop	2	15-Aug-17	16-Aug-17	25-Aug-17	28-Aug-17	0%	0%	-9																						
A16990	Stage 5 - Complete T4 stability prop	0		16-Aug-17		28-Aug-17	0%	0%	-9																						
M+ Mega Truss Site Construction																															
Site Construction of Truss 5																															
A50570	T5 Steel Truss Erection - Part 2 (incl. T5N04, T5-D21 & T5	16	29-Jun-17	18-Jul-17	08-Jun-17	09-Jun-17 A	6.25%	100%	33																						
A50525	T5 Steel Truss Concrete Encasement (LoE)	91	08-Mar-17	29-Jun-17	08-Mar-17	12-Aug-17	100%	59.34%	-37																						
T5 Steel Erection (incl. Modular Towers & Working Platform)																															
Temporary Supports & Modular Towers																															
MT1030	Complete Truss 5 Bottom Chord Bedding (350mm RC str	0		10-Jun-17		28-Dec-16 A	100%	100%	130																						
Installation of T5 Remaining Components																															
MT1710	Installation T5-N04	1	30-Jun-17	30-Jun-17	09-Jun-17	09-Jun-17 A	0%	100%	19																						
MT1700	Completion of East Core Wall @28.4mPD for T5 south-e	0		28-Jun-17		10-Jun-17 A	100%	100%	16																						
MT1720	Installation T5-D21	1	03-Jul-17	03-Jul-17	10-Jun-17	10-Jun-17 A	0%	100%	19																						
MT1730	Installation T5-B14	5	04-Jul-17	08-Jul-17	10-Jun-17	10-Jun-17 A	0%	100%	24																						
Welding and NDT of Top Chords (Remaining)																															
MT1740	Welding D21-N01	5	06-Jul-17	11-Jul-17	16-Jun-17	17-Jun-17 A	0%	100%	20																						
MT1750	Welding N04(A) N04 (B)	5	05-Jul-17	10-Jul-17	16-Jun-17	17-Jun-17 A	0%	100%	19																						
MT1760	Welding N04-D21	5	06-Jul-17	11-Jul-17	16-Jun-17	17-Jun-17 A	0%	100%	20																						
MT1780	Welding N04-B14	2	05-Jul-17	06-Jul-17	16-Jun-17	17-Jun-17 A	0%	100%	16																						
MT1790	NDT for top chord (main)	2	15-Jul-17	17-Jul-17	22-Jun-17	23-Jun-17 A	0%	100%	20																						
MT1770	Welding B14-N05	5	10-Jul-17	14-Jul-17	16-Jun-17	23-Jun-17 A	0%	100%	18																						
Completion of T5 Installation																															
MT1800	Survey check for overall truss T5	1	18-Jul-17	18-Jul-17	26-Jun-17	26-Jun-17 A	0%	100%	19																						
RC Works CJ2 to +23.7mPD (Bottom Chord)																															
A50690	Rebar Fixing CJ2 @GL 5-7	5	19-Jul-17	24-Jul-17	30-Jun-17	06-Jul-17	0%	0%	15																						
A50740	Formworks CJ2 @GL 5-7	2	25-Jul-17	26-Jul-17	07-Jul-17	08-Jul-17	0%	0%	15																						
A50820	Concreting CJ2 @GL 5-7	1	27-Jul-17	27-Jul-17	10-Jul-17	10-Jul-17	0%	0%	15																						
A50930	Concrete Curing CJ2 @GL 5-7	5	28-Jul-17	01-Aug-17	11-Jul-17	15-Jul-17	0%	0%	17																						
RC Works to CJ3 to +28.6mPD (7 nos. of Bracing)																															
A51180	Rebar Fixing CJ3 @GL 5-7	5	02-Aug-17	07-Aug-17	17-Jul-17	21-Jul-17	0%	0%	14																						
A51190	Formworks CJ3 @GL 5-7	1	08-Aug-17	08-Aug-17	22-Jul-17	22-Jul-17	0%	0%	14																						
A51240	Concreting CJ3 @GL 5-7	1	09-Aug-17	09-Aug-17	24-Jul-17	24-Jul-17	0%	0%	14																						
A51290	Concrete Curing CJ3 @GL 5-7	5	10-Aug-17	14-Aug-17	25-Jul-17	29-Jul-17	0%	0%	16																						
RC Works to +31.3mPD (Top Chord - 3/F)																															
A52030	Rebar Fixing CJ4 @GL 3-5	7	20-May-17	27-May-17	30-Jun-17	08-Jul-17	100%	0%	-34																						
A51710	Rebar Fixing CJ4 @GL 1-3	8	20-May-17	29-May-17	30-Jun-17	10-Jul-17	100%	0%	-34																						
A52060	Formworks CJ4 @GL 3-5	1	29-May-17	29-May-17	10-Jul-17	10-Jul-17	100%	0%	-34																						
A52150	Concreting Top Chord CJ4 @GL 3-5	1	31-May-17	31-May-17	11-Jul-17	11-Jul-17	100%	0%	-34																						
A51740	Formworks CJ4 @GL 1-3	2	31-May-17	01-Jun-17	11-Jul-17	12-Jul-17	100%	0%	-34																						
A51840	Concreting Top Chord CJ4 @GL 1-3	1	02-Jun-17	02-Jun-17	13-Jul-17	13-Jul-17	100%	0%	-34																						
A52240	Concrete Curing Top Chord CJ4 @GL 3-5	5	01-Jun-17	05-Jun-17	12-Jul-17	16-Jul-17	100%	0%	-41																						
A51940	Concrete Curing Top Chord CJ4 @GL 1-3	5	03-Jun-17	07-Jun-17	14-Jul-17	18-Jul-17	100%	0%	-41																						
A52330	Rebar Fixing CJ4 @GL 5-7	6	15-Aug-17	21-Aug-17	31-Jul-17	05-Aug-17	0%	0%	13																						
A52420	Formworks CJ4 @GL 5-7	1	22-Aug-17	22-Aug-17	07-Aug-17	07-Aug-17	0%	0%	13																						
A52510	Concreting to Top Chord CJ4 @GL 5-7	1	23-Aug-17	23-Aug-17	08-Aug-17	08-Aug-17	0%	0%	13																						
A52570	Concrete Curing Top Chord CJ4 @GL 5-7	5	24-Aug-17	28-Aug-17	09-Aug-17	13-Aug-17	0%	0%	15																						
A52575	Complete Truss 5 Construction	0		28-Aug-17		13-Aug-17	0%	0%	15																						
Site Construction of Truss 1																															
A40515	T1 Steel Truss Erection (LoE)	83	23-Jan-17	09-May-17	23-Jan-17	23-Jun-17 A	100%	100%	-37																						
A40520	T1 Steel Truss Concrete Encasement (LoE)	110	04-May-17	11-Sep-17	03-May-17	07-Aug-17	43.64%	70.91%	30																						
T1 Steel Erection (incl. Modular Towers & Working Platform)																															
Temporary Supports & Modular Towers																															
MT1850	Complete Truss 1 Bottom 750mm Bedding (RC strength	0		14-Jun-17		24-Jan-17 A	100%	100%	111																						
MT5140	Installation of temporary support towers @GL D-E	2	19-May-17	20-May-17	19-May-17	09-Jun-17 A	100%	100%	-15																						
MT5160	Install tie to T1 bottom chord for temporary support tow	1	24-May-17	24-May-17	24-May-17	12-Jun-17 A	100%	100%	-14																						



Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R0.D5 Start	CMWP - R0.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October						
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08						
MT2510	Erection hanger platform 1	1	19-May-17	19-May-17	19-May-17	23-Jun-17 A	100%	100%	-28																											
Installation of Bottom Chords, Bracings & Top Chords																																				
Top Chords & Bracing Windows Plates																																				
MT2520	Installation T1-N05	1	25-May-17	25-May-17	25-May-17	09-Jun-17 A	100%	100%	-11	Depends on B1 Slab Coi																										
Welding and NDT for cover plates																																				
MT2480	NDT for cover plates	18	06-Apr-17	29-Apr-17	06-Apr-17	20-Jun-17 A	100%	100%	-40																											
Welding and NDT for Top Chords																																				
MT2580	Welding N06-N05	4	26-May-17	31-May-17	16-Jun-17	20-Jun-17 A	100%	100%	-16																											
MT2590	NDT for top chord (main)	2	18-Mar-17	20-Mar-17	18-Mar-17	20-Jun-17 A	100%	100%	-71																											
Completion of T1 Installation																																				
MT2600	Survey check for overall truss T1	1	01-Jun-17	01-Jun-17	23-Jun-17	23-Jun-17 A	100%	100%	-18																											
RC Works East Core Wall (incl. to +28.3mPD for T5-N04A & T5-N04B)																																				
A37520	Construct +23.7mPD to 28.4mPD (2F to 3F L.S.)	15	05-Jun-17	21-Jun-17	23-May-17	05-Jun-17 A	100%	100%	15																											
A37530	Concrete Curing +28.4mPD	7	22-Jun-17	28-Jun-17	06-Jun-17	08-Jun-17 A	100%	100%	21																											
A37540	Construct +28.4mPD to 34.75mPD (3F L.S. to 3F U.S.)	14	03-Jul-17	18-Jul-17	26-Jun-17	13-Jul-17	0%	25%	5																											
A37550	Construct +34.75mPD to 37.95mPD (3F to 4F)	15	19-Jul-17	04-Aug-17	13-Jul-17	31-Jul-17	0%	0%	5																											
RC Works CJ2 to +23.7mPD (Bottom Chord)																																				
A40600	Concrete Curing CJ2 @GL L-J	5	23-May-17	27-May-17	26-May-17	30-May-17 A	100%	100%	-3																											
A44440	Concrete Curing CJ2 @GL G-D	5	09-May-17	13-May-17	09-May-17	19-Jun-17 A	100%	100%	-37																											
RC Works to CJ3 to +29.3mPD (7 nos. of Bracing)																																				
A40740	Concrete Curing CJ3 @GL J-G	5	23-May-17	27-May-17	14-May-17	01-Jun-17 A	100%	100%	-4																											
A40670	Rebar Fixing CJ3 @GL L-J	5	29-May-17	03-Jun-17	26-May-17	01-Jun-17 A	100%	100%	3																											
A40680	Formworks CJ3 @GL L-J	2	05-Jun-17	06-Jun-17	28-May-17	07-Jun-17 A	100%	100%	0																											
A40690	Concreting CJ3 @GL L-J	1	07-Jun-17	07-Jun-17	01-Jun-17	07-Jun-17 A	100%	100%	1																											
A40700	Concrete Curing CJ3 @GL L-J	5	08-Jun-17	12-Jun-17	08-Jun-17	15-Jun-17 A	100%	100%	-2																											
A40760	Formworks CJ3 @GL G-D	1	31-May-17	31-May-17	27-Jul-17 A	30-Jun-17	100%	5%	-26																											
A44950	Concreting CJ3 @GL G-D	1	01-Jun-17	01-Jun-17	30-Jun-17	03-Jul-17	100%	0%	-26																											
A40750	Rebar Fixing CJ3 @GL G-D	5	24-May-17	29-May-17	20-Jun-17	04-Jul-17	100%	50%	-29																											
A45060	Concrete Curing CJ3 @GL G-D	5	02-Jun-17	06-Jun-17	03-Jul-17	08-Jul-17	100%	0%	-32																											
RC Works to CJ4 to 34.75mPD (7 nos. of Bracing)																																				
A40810	Rebar Fixing CJ4 @GL J-G	4	19-Jun-17	22-Jun-17	01-Jun-17	20-Jun-17 A	100%	100%	2																											
A40820	Formworks CJ4 @GL J-G	2	23-Jun-17	24-Jun-17	05-Jun-17	27-Jun-17 A	100%	100%	-1																											
A40830	Concreting CJ4 @GL J-G	1	26-Jun-17	26-Jun-17	07-Jun-17	27-Jun-17 A	100%	100%	0																											
A40790	Concreting CJ4 @GL L-J	1	21-Jun-17	21-Jun-17	14-Jun-17	30-Jun-17	100%	25%	-8																											
A40780	Formworks CJ4 @GL L-J	2	19-Jun-17	20-Jun-17	10-Jun-17	30-Jun-17	100%	55%	-9																											
A40840	Concrete Curing CJ4 @GL J-G	5	27-Jun-17	01-Jul-17	08-Jun-17	02-Jul-17	60%	50%	-1																											
A40800	Concrete Curing CJ4 @GL L-J	5	22-Jun-17	26-Jun-17	15-Jun-17	03-Jul-17	100%	25%	-7																											
A40770	Rebar Fixing CJ4 @GL L-J	5	13-Jun-17	17-Jun-17	09-Jun-17	04-Jul-17	100%	55%	-12																											
A40850	Rebar Fixing CJ4 @GL G-D	5	07-Jun-17	12-Jun-17	08-Jun-17	14-Jul-17	100%	0%	-27																											
A40860	Formworks CJ4 @GL G-D	2	13-Jun-17	14-Jun-17	14-Jul-17	17-Jul-17	100%	0%	-27																											
A45570	Concreting CJ4 @GL G-D	1	15-Jun-17	15-Jun-17	17-Jul-17	18-Jul-17	100%	0%	-27																											
A45680	Concrete Curing CJ4 @GL G-D	5	16-Jun-17	20-Jun-17	18-Jul-17	23-Jul-17	100%	0%	-33																											
RC Works to +37.95mPD (Top Chord - 4/F)																																				
A40910	Rebar Fixing @GL J-G	7	03-Jul-17	10-Jul-17	03-Jul-17	10-Jul-17	0%	0%	0																											
A40920	Formworks @GL J-G	1	11-Jul-17	11-Jul-17	11-Jul-17	11-Jul-17	0%	0%	0																											
A40870	Rebar Fixing @GL L-J	8	15-Jul-17	24-Jul-17	03-Jul-17	12-Jul-17	0%	0%	10																											
A40930	Concreting Top Chord @GL J-G	1	12-Jul-17	12-Jul-17	12-Jul-17	12-Jul-17	0%	0%	0																											
A40880	Formworks @GL L-J	2	25-Jul-17	26-Jul-17	12-Jul-17	14-Jul-17	0%	0%	10																											
A40890	Concreting Top Chord @GL L-J	1	27-Jul-17	27-Jul-17	14-Jul-17	15-Jul-17	0%	0%	10																											
A40940	Concrete Curing Top Chord @GL J-G	5	13-Jul-17	17-Jul-17	13-Jul-17	17-Jul-17	0%	0%	0																											
A40900	Concrete Curing Top Chord @GL L-J	5	28-Jul-17	01-Aug-17	15-Jul-17	20-Jul-17	0%	0%	12																											
A40950	Rebar Fixing @GL G-D	7	21-Jun-17	28-Jun-17	24-Jul-17	31-Jul-17	100%	0%	-27																											
A40960	Formworks @GL G-D	1	29-Jun-17	29-Jun-17	01-Aug-17	01-Aug-17	100%	0%	-27																											
A40970	Concreting to Top Chord @GL G-D	1	30-Jun-17	30-Jun-17	02-Aug-17	02-Aug-17	0%	0%	-27																											
A40980	Concrete Curing Top Chord @GL G-D	5	01-Jul-17	05-Jul-17	03-Aug-17	07-Aug-17	0%	0%	-33																											
A40985	Complete Truss 1 Construction	0		05-Jul-17		07-Aug-17	0%	0%	-33																											
Site Construction of Truss 2																																				
A46665	T2 Steel Truss Erection (LoE)	80	27-Jan-17	10-May-17	27-Jan-17	22-Jun-17 A	100%	100%	-35																											

◆ Complete Truss 1 Construction,

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
A46715	T2 Steel Truss Concrete Encasement (LoE)	110	11-May-17	18-Sep-17	11-May-17	05-Aug-17	38.18%	71.82%	37		[Gantt chart for A46715 showing progress from May to August]																				
T2 Steel Erection (incl. Modular Towers & Working Platform)																															
Temporary Supports & Modular Towers																															
MT2650	Complete Truss 2 Bottom 750mm Bedding (RC strength	0		17-Jun-17		03-Feb-17 A	100%	100%	108		♦ Complete Truss 2 Bottom 750mm Bedding (RC strength reach 45MPa),																				
MT3300	Installation of temporary support towers 1	1	13-May-17	13-May-17	13-May-17	07-Jun-17 A	100%	100%	-19	Depends on B1 Slab Cor																					
MT5150	Installation of temporary support towers @GL E-F	2	20-May-17	22-May-17	20-May-17	09-Jun-17 A	100%	100%	-14																						
MT5170	Install tie to T2 bottom chord for temporary support tow	1	23-May-17	23-May-17	16-Jun-17	16-Jun-17 A	100%	100%	-19																						
MT3310	Installation of hanger platform 1	1	22-May-17	22-May-17	23-Jun-17	23-Jun-17 A	100%	100%	-26	Depends on B1 Slab Cor																					
Welding and NDT for Top Chords																															
MT3390	Welding N06-N05	4	20-May-17	24-May-17	16-Jun-17	16-Jun-17 A	100%	100%	-18																						
MT3400	NDT for top chord (main)	7	22-May-17	29-May-17	20-Mar-17	23-Jun-17 A	100%	100%	-20																						
Completion of T2 Installation																															
MT3410	Survey check for overall truss T2	2	25-May-17	26-May-17	16-Jun-17	17-Jun-17 A	100%	100%	-17																						
RC Works CJ2 to +23.7mPD (Bottom Chord)																															
A47270	Concrete Curing CJ2 @GL L-J	5	26-May-17	30-May-17	25-May-17	29-May-17 A	100%	100%	1																						
RC Works to CJ3 to +29.3mPD (7 nos. of Bracing)																															
A47460	Concreting CJ3 @GL J-G	1	26-May-17	26-May-17	17-May-17	31-May-17 A	100%	100%	-2																						
A47400	Rebar Fixing CJ3 @GL L-J	5	20-May-17	25-May-17	20-May-17	01-Jun-17 A	100%	100%	-4																						
A47470	CJ3 @GL J-G Concrete Curing	5	27-May-17	31-May-17	18-May-17	02-Jun-17 A	100%	100%	-1																						
A47410	Formworks CJ3 @GL L-J	2	26-May-17	27-May-17	26-May-17	07-Jun-17 A	100%	100%	-7																						
A47420	Concreting CJ3 @GL L-J	1	29-May-17	29-May-17	29-May-17	07-Jun-17 A	100%	100%	-6																						
A47430	CJ3 @GL L-J Concrete Curing	5	30-May-17	03-Jun-17	01-Jun-17	08-Jun-17 A	100%	100%	-4																						
A47620	Formworks CJ3 @GL G-D	1	06-Jun-17	06-Jun-17	27-Jun-17	30-Jun-17	100%	5%	-21																						
A47720	Concreting CJ3 @GL G-D	1	07-Jun-17	07-Jun-17	30-Jun-17	03-Jul-17	100%	0%	-21																						
A47540	Rebar Fixing CJ3 @GL G-D	5	31-May-17	05-Jun-17	08-Jun-17	04-Jul-17	100%	50%	-24																						
A47830	Concrete Curing CJ3 @GL G-D	5	08-Jun-17	12-Jun-17	03-Jul-17	08-Jul-17	100%	0%	-26																						
RC Works to CJ4 to 34.75mPD (7 nos. of Bracing)																															
A48040	Rebar Fixing CJ4 @GL J-G	4	01-Jun-17	05-Jun-17	16-Jun-17	20-Jun-17 A	100%	100%	-12																						
A48060	Concreting CJ4 @GL J-G	1	08-Jun-17	08-Jun-17	09-Jun-17	27-Jun-17 A	100%	100%	-15																						
A48000	Formworks CJ4 @GL L-J	2	10-Jun-17	12-Jun-17	04-Jun-17	30-Jun-17	100%	65%	-16																						
A48050	Formworks CJ4 @GL J-G	2	06-Jun-17	07-Jun-17	06-Jun-17	30-Jun-17	100%	65%	-20																						
A48020	Concreting CJ4 @GL L-J	1	13-Jun-17	13-Jun-17	14-Jun-17	30-Jun-17	100%	25%	-15																						
A48070	Concrete Curing CJ4 @GL J-G	5	09-Jun-17	13-Jun-17	10-Jun-17	01-Jul-17	100%	75%	-17																						
A47960	Rebar Fixing CJ4 @GL L-J	5	05-Jun-17	09-Jun-17	03-Jun-17	03-Jul-17	100%	75%	-18																						
A48030	Concrete Curing CJ4 @GL L-J	5	14-Jun-17	18-Jun-17	15-Jun-17	03-Jul-17	100%	25%	-15																						
A48080	Rebar Fixing CJ4 @GL G-D	5	13-Jun-17	17-Jun-17	08-Jul-17	14-Jul-17	100%	0%	-22																						
A48090	Formworks CJ4 @GL G-D	2	19-Jun-17	20-Jun-17	14-Jul-17	17-Jul-17	100%	0%	-22																						
A48110	Concreting CJ4 @GL G-D	1	21-Jun-17	21-Jun-17	17-Jul-17	18-Jul-17	100%	0%	-22																						
A48170	Concrete Curing CJ4 @GL G-D	5	22-Jun-17	26-Jun-17	18-Jul-17	23-Jul-17	100%	0%	-27																						
RC Works to +37.95mPD (Top Chord - 4/F)																															
A48660	Rebar Fixing @GL J-G	7	14-Jun-17	21-Jun-17	03-Jul-17	10-Jul-17	100%	0%	-15																						
A48700	Formworks @GL J-G	1	22-Jun-17	22-Jun-17	11-Jul-17	11-Jul-17	100%	0%	-15																						
A48330	Rebar Fixing @GL L-J	8	15-Jul-17	24-Jul-17	03-Jul-17	12-Jul-17	0%	0%	10																						
A48770	Concreting Top Chord @GL J-G	1	23-Jun-17	23-Jun-17	12-Jul-17	12-Jul-17	100%	0%	-15																						
A48400	Formworks @GL L-J	2	25-Jul-17	26-Jul-17	12-Jul-17	14-Jul-17	0%	0%	10																						
A48490	Concreting Top Chord @GL L-J	1	27-Jul-17	27-Jul-17	14-Jul-17	15-Jul-17	0%	0%	10																						
A48820	Concrete Curing Top Chord @GL J-G	5	24-Jun-17	28-Jun-17	13-Jul-17	17-Jul-17	100%	0%	-19																						
A48570	Concrete Curing Top Chord @GL L-J	5	28-Jul-17	01-Aug-17	15-Jul-17	20-Jul-17	0%	0%	12																						
A48890	Rebar Fixing @GL G-D	6	27-Jun-17	04-Jul-17	24-Jul-17	29-Jul-17	50%	0%	-22																						
A48990	Formworks @GL G-D	1	05-Jul-17	05-Jul-17	31-Jul-17	31-Jul-17	0%	0%	-22																						
A49080	Concreting to Top Chord @GL G-D	1	06-Jul-17	06-Jul-17	01-Aug-17	01-Aug-17	0%	0%	-22																						
A49165	Complete Truss 2 Construction	0		11-Jul-17		06-Aug-17	0%	0%	-26		♦ Complete Truss 2 Construction,																				
A49160	Concrete Curing Top Chord @GL G-D	5	07-Jul-17	11-Jul-17	02-Aug-17	06-Aug-17	0%	0%	-26																						
Site Construction of Truss 3																															
A13190	T3 Steel Truss Concrete Encasement (LoE)	63	20-May-17	03-Aug-17	31-May-17	08-Aug-17	53.97%	47.62%	-4		[Gantt chart for A13190 showing progress from May to August]																				
T3 Steel Erection (incl. Modular Towers & Working Platform)																															
Temporary Supports & Modular Towers																															
MT3470	Complete Truss 3 Bottom 450mm Bedding (RC strength	0		08-Jun-17		06-Mar-17 A	100%	100%	74		♦ Complete Truss 3 Bottom 450mm Bedding (RC strength reach 45MPa),																				

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R0.D5 Start	CMWP - R0.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
Installation of Bottom Chords, Bracings & Top Chords																															
Top Chords & Bracing Windows Plates																															
MT4370	Installation of TCB bolts and shaped plates for T3-D26	8	26-May-17	05-Jun-17	21-Jun-17	22-Jun-17 A	100%	100%	-14																						
Welding and NDT of Main Bracings																															
MT4380	Welding of TCB bolts and shaped plates for T3-D26	8	27-May-17	06-Jun-17	18-May-17	19-May-17 A	100%	100%	15																						
MT4390	NDT for cover and shaped plates, T3-D26	2	07-Jun-17	08-Jun-17	22-May-17	24-May-17 A	100%	100%	13																						
Welding and NDT of top Chords																															
MT4360	NDT for bracing and top chord (window plate)	29	19-May-17	22-Jun-17	19-May-17	19-May-17 A	100%	100%	28	no window plate																					
Completion of T3 Installation																															
MT4400	Survey check for overall truss T3	2	09-Jun-17	10-Jun-17	18-May-17	18-May-17 A	100%	100%	20																						
RC Works CJ2 to +23.7mPD (Bottom Chord)																															
A13210	Rebar Fixing CJ2 @GL H-F	9	20-May-17	31-May-17	31-May-17	09-Jun-17 A	100%	100%	-7																						
A13500	Rebar Fixing CJ2 @GL F-E	9	01-Jun-17	10-Jun-17	31-May-17	09-Jun-17 A	100%	100%	2																						
A13330	Concreting CJ2 @GL H-F	1	02-Jun-17	02-Jun-17	16-Jun-17	16-Jun-17 A	100%	100%	-11																						
A13580	Formworks CJ2 @GL F-E	2	12-Jun-17	13-Jun-17	30-May-17	16-Jun-17 A	100%	100%	-2																						
A13660	Concreting CJ2 @GL F-E	1	14-Jun-17	14-Jun-17	16-Jun-17	16-Jun-17 A	100%	100%	-1																						
A13820	Rebar Fixing CJ2 @GL E-C	10	12-Jun-17	22-Jun-17	31-May-17	16-Jun-17 A	100%	100%	6																						
A13910	Formworks CJ2 @GL E-C	1	23-Jun-17	23-Jun-17	30-May-17	16-Jun-17 A	100%	100%	6																						
A13990	Concreting CJ2 @GL E-C	1	24-Jun-17	24-Jun-17	16-Jun-17	16-Jun-17 A	100%	100%	7																						
A14060	Concrete Curing CJ2 @GL E-C	7	25-Jun-17	01-Jul-17	17-Jun-17	23-Jun-17 A	71.43%	100%	9																						
A13750	Concrete Curing CJ2 @GL F-E	7	15-Jun-17	21-Jun-17	17-Jun-17	23-Jun-17 A	100%	100%	-1																						
A13430	Concrete Curing CJ2 @GL H-F	7	03-Jun-17	09-Jun-17	17-Jun-17	30-Jun-17	100%	100%	-20																						
A13260	Formworks CJ2 @GL H-F	1	01-Jun-17	01-Jun-17	30-May-17	30-Jun-17	100%	0%	-25																						
RC Works to CJ3 to +28.6mPD (7 nos. of Bracing)																															
A14530	Rebar Fixing CJ3 @GL F-E	4	22-Jun-17	26-Jun-17	20-Jun-17	04-Jul-17	100%	25%	-6																						
A14220	Rebar Fixing CJ3 @GL H-F	5	10-Jun-17	15-Jun-17	20-Jun-17	05-Jul-17	100%	25%	-16																						
A14860	Rebar Fixing CJ3 @GL E-C	5	03-Jul-17	07-Jul-17	20-Jun-17	05-Jul-17	0%	25%	2																						
A14610	Formworks CJ3 @GL F-E	1	27-Jun-17	27-Jun-17	05-Jul-17	05-Jul-17	100%	0%	-6																						
A14980	Formworks CJ3 @GL E-C	1	08-Jul-17	08-Jul-17	05-Jul-17	06-Jul-17	0%	0%	2																						
A14690	Concreting CJ3 @GL F-E	1	28-Jun-17	28-Jun-17	06-Jul-17	06-Jul-17	100%	0%	-6																						
A14300	Formworks CJ3 @GL H-F	2	16-Jun-17	17-Jun-17	05-Jul-17	07-Jul-17	100%	0%	-16																						
A15100	Concreting CJ3 @GL E-C	1	10-Jul-17	10-Jul-17	06-Jul-17	07-Jul-17	0%	0%	2																						
A14370	Concreting CJ3 @GL H-F	1	19-Jun-17	19-Jun-17	07-Jul-17	08-Jul-17	100%	0%	-16																						
A14780	CJ3 @GL F-E Concrete Curing	7	29-Jun-17	05-Jul-17	07-Jul-17	13-Jul-17	14.29%	0%	-8																						
A15180	Concrete Curing CJ3 @GL E-C	7	11-Jul-17	17-Jul-17	07-Jul-17	14-Jul-17	0%	0%	3																						
A14450	CJ3 @GL H-F Concrete Curing	7	20-Jun-17	26-Jun-17	08-Jul-17	15-Jul-17	100%	0%	-19																						
RC Works to +31.3mPD (Top Chord - 3/F)																															
A15340	Rebar Fixing CJ4 @GL F-E	7	06-Jul-17	13-Jul-17	14-Jul-17	21-Jul-17	0%	0%	-7																						
A15350	Formworks CJ4 @GL F-E	1	14-Jul-17	14-Jul-17	22-Jul-17	22-Jul-17	0%	0%	-7																						
A15360	Concreting Top Chord CJ4 @GL F-E	1	15-Jul-17	15-Jul-17	24-Jul-17	24-Jul-17	0%	0%	-7																						
A15300	Rebar Fixing CJ4 @GL H-F	8	27-Jun-17	06-Jul-17	15-Jul-17	25-Jul-17	37.5%	0%	-16																						
A15310	Formworks CJ4 @GL H-F	2	07-Jul-17	08-Jul-17	25-Jul-17	27-Jul-17	0%	0%	-16																						
A15320	Concreting Top Chord CJ4 @GL H-F	1	10-Jul-17	10-Jul-17	27-Jul-17	28-Jul-17	0%	0%	-16																						
A15380	Rebar Fixing CJ4 @GL E-C	7	18-Jul-17	25-Jul-17	22-Jul-17	29-Jul-17	0%	0%	-4																						
A15390	Formworks CJ4 @GL E-C	1	26-Jul-17	26-Jul-17	31-Jul-17	31-Jul-17	0%	0%	-4																						
A15370	Concrete Curing Top Chord CJ4 @GL F-E	7	16-Jul-17	22-Jul-17	25-Jul-17	31-Jul-17	0%	0%	-9																						
A15400	Concreting to Top Chord CJ4 @GL E-C	1	27-Jul-17	27-Jul-17	01-Aug-17	01-Aug-17	0%	0%	-4																						
A15330	Concrete Curing Top Chord CJ4 @GL H-F	7	11-Jul-17	17-Jul-17	28-Jul-17	04-Aug-17	0%	0%	-18																						
A15410	Concrete Curing Top Chord CJ4 @GL E-C	7	28-Jul-17	03-Aug-17	02-Aug-17	08-Aug-17	0%	0%	-5																						
A15420	Complete Truss 3 Construction	0		03-Aug-17		08-Aug-17	0%	0%	-5																						
Site Construction of Truss 4																															
A15490	T4 Steel Truss Erection (LoE)	65	11-Mar-17	02-Jun-17	11-Mar-17	09-Jun-17 A	100%	100%	-5																						
A15510	T4 Steel Truss Concrete Encasement (LoE)	64	31-May-17	14-Aug-17	09-Jun-17	25-Aug-17	40.63%	26.5%	-9																						
T4 Steel Erection (incl. Modular Towers & Working Platform)																															
Temporary Supports & Modular Towers																															
MT4500	Complete Truss 4 Bottom 450mm Bedding (RC strength	0		08-Jun-17		10-Mar-17 A	100%	100%	70																						
Installation of Bottom Chords, Bracings & Top Chords																															
Top Chords & Bracing Windows Plates																															

◆ Complete Truss 3 Construction,

◆ Complete Truss 4 Bottom 450mm Bedding (RC strength reach 45MPa),

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Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
A54740	Perf MU - GW with Ceramic Mullion G/F Production & F	130	11-Apr-17	18-Aug-17	11-Apr-17	19-Oct-17	61.54%	15%	-62																						
A54750	Perf MU - GW with Ceramic Mullion G/F Installation	20	11-Sep-17	04-Oct-17	19-Oct-17	13-Nov-17	0%	0%	-32																						
PMU SHOPDRAWING SUBMISSION & TEST - Vertical Glass Wall at Skylight Gallery																															
A52800	Perf MU - 1st Shopdrawing Submission - Review & Appr	21	11-Apr-17	01-May-17	11-Apr-17	23-Jun-17 A	100%	100%	-52																						
A55300	Perf MU - 2nd Vertical GW Skylight Gallery Test Proposa	14	20-May-17	02-Jun-17	30-Jun-17	13-Jul-17	100%	0%	-41																						
A55310	Perf MU - 2nd Vertical GW Skylight Gallery Test Proposa	21	03-Jun-17	23-Jun-17	14-Jul-17	03-Aug-17	100%	0%	-41																						
A54820	Perf MU - Vertical Glass Wall Skylight Gallery Productior	134	24-May-17	04-Oct-17	30-Jun-17	10-Nov-17	27.61%	0%	-37																						
PMU SHOPDRAWING SUBMISSION & TEST - Plaza Skylight 3/F Terrace																															
A52840	Perf MU - 1st Shopdrawing Submission - Review & Appr	21	11-Apr-17	01-May-17	11-Apr-17	03-Jul-17	100%	80.95%	-63																						
A52850	Perf MU - 2nd Shopdrawing Submission	14	24-May-17	06-Jun-17	04-Jul-17	17-Jul-17	100%	0%	-41																						
A52860	Perf MU - 2nd Shopdrawing Submission - Review & App	21	07-Jun-17	27-Jun-17	18-Jul-17	07-Aug-17	100%	0%	-41																						
A54780	Perf MU - Plaza Skylight 3/F Terrace Production & Fabric	117	05-Apr-17	30-Jul-17	05-Apr-17	25-Aug-17	73.5%	52%	-25																						
A54790	Perf MU - Plaza Skylight 3/F Terrace Installation	30	18-Jul-17	21-Aug-17	25-Aug-17	29-Sep-17	0%	0%	-33																						
A54800	Perf MU - Commence Testing of Plaza Skylight 3/F Terrac	0	22-Aug-17		29-Sep-17		0%	0%	-33																						
A54810	Perf MU - Testing & Report Submission of Plaza Skylight	12	22-Aug-17	04-Sep-17	29-Sep-17	16-Oct-17	0%	0%	-33																						
PMU SHOPDRAWING SUBMISSION & TEST - Acoustic Mock up																															
A52880	Perf MU - 2nd Shopdrawing Submission - Review & App	21	11-Apr-17	01-May-17	11-Apr-17	04-Jul-17	100%	78%	-64																						
A52890	Perf MU - 3rd Shopdrawing Submission	14	25-May-17	07-Jun-17	04-Jul-17	18-Jul-17	100%	0%	-41																						
A52900	Perf MU - 3rd Shopdrawing Submission - Review & Appr	21	08-Jun-17	28-Jun-17	18-Jul-17	08-Aug-17	100%	0%	-41																						
A55100	Perf MU - Commence Testing of Acoustic Mock Up	0	29-Jun-17		08-Aug-17		100%	0%	-34																						
A55110	Perf MU - Testing & Report Submission of Acoustic Mock	12	29-Jun-17	13-Jul-17	08-Aug-17	22-Aug-17	8.33%	0%	-34																						
PRODUCTION MOCK UP & INSPECTION																															
Prod MU - Tower Facade Precast Panel																															
A55360	Tower Precast Concrete & Curtain Wall Prod MU	60	27-Aug-17	25-Oct-17	18-Aug-17	16-Oct-17	0%	0%	9																						
Prod MU - Plaza Skylight 3/F Terrace																															
A55460	Plaza Skylight Prod MU	60	05-Sep-17	03-Nov-17	16-Oct-17	15-Dec-17	0%	0%	-41																						
BIM MODEL SUBMISSION																															
BIM MODEL SUBMISSION - Tower Facade Precast Panel (MPLUS-BIM-D003)																															
A52920	5th BIM Model Submission	149	20-Sep-16	15-Feb-17	20-Sep-16	22-Jun-17 A	100%	100%	-127	No BIM Approval requir																					
A52930	5th BIM Model Submission - Review & Approval	21	27-May-17	16-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-6	No BIM Approval requir																					
A52940	6th BIM Model Submission	14	17-Jun-17	30-Jun-17	20-Jun-17	23-Jun-17 A	92.86%	100%	8	No BIM Approval requir																					
A52950	6th BIM Model Submission - Review & Approval	21	01-Jul-17	21-Jul-17	20-Jun-17	23-Jun-17 A	0%	100%	29	No BIM Approval requir																					
BIM MODEL SUBMISSION - Podium Facade Panel (MPLUS-BIM-D004)																															
A52960	3rd BIM Model Submission	209	15-Jul-16	08-Feb-17	20-Jun-17	23-Jun-17 A	100%	100%	-134	No BIM Approval requir																					
A52970	3rd BIM Model Submission - Review & Approval	21	24-May-17	13-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-9	No BIM Approval requir																					
A52980	4th BIM Model Submission	14	14-Jun-17	27-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	5	No BIM Approval requir																					
A52990	4th BIM Model Submission - Review & Approval	21	28-Jun-17	18-Jul-17	20-Jun-17	23-Jun-17 A	9.52%	100%	26	No BIM Approval requir																					
BIM MODEL SUBMISSION - Glass Wall with T Mullion																															
A53010	1st BIM Model Submission - Review & Approval	21	04-Apr-17	24-Apr-17	20-Jun-17	23-Jun-17 A	100%	100%	-59	No BIM Approval requir																					
A53020	2nd BIM Model Submission	14	23-May-17	05-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-17	No BIM Approval requir																					
A53030	2nd BIM Model Submission - Review & Approval	21	06-Jun-17	26-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	4	No BIM Approval requir																					
BIM MODEL SUBMISSION -Ceramic Concrete Tubes & Perforated Cladding																															
A53100	2nd BIM Model Submission	14	20-May-17	02-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-20	No BIM Approval requir																					
A53110	2nd BIM Model Submission - Review & Approval	21	03-Jun-17	23-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	1	No BIM Approval requir																					
BIM MODEL SUBMISSION - Strip Glazing at Skylight Gallery & Plaza Skylight at L3 (MPLUS-BIM-D006) & (
A53150	4th BIM Model Submission - Review & Approval	21	27-Jun-17	17-Jul-17	20-Jun-17	23-Jun-17 A	14.29%	100%	25	No BIM Approval requir																					
A53120	3rd BIM Model Submission	76	06-Oct-16	20-Dec-16	20-Jun-17	23-Jun-17 A	100%	100%	-184	No BIM Approval requir																					
A53130	3rd BIM Model Submission - Review & Approval	21	23-May-17	12-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-10	No BIM Approval requir																					
A53140	4th BIM Model Submission	14	13-Jun-17	26-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	4	No BIM Approval requir																					
BIM MODEL SUBMISSION -L3 Storefront (MPLUS-BIM-D001)																															
A53160	5th BIM Model Submission	98	14-Sep-16	20-Dec-16	20-Jun-17	23-Jun-17 A	100%	100%	-184	No BIM Approval requir																					
A53170	5th BIM Model Submission - Review & Approval	21	24-May-17	13-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-9	No BIM Approval requir																					
A53180	6th BIM Model Submission	14	14-Jun-17	27-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	5	No BIM Approval requir																					
A53190	6th BIM Model Submission - Review & Approval	21	28-Jun-17	18-Jul-17	20-Jun-17	23-Jun-17 A	9.52%	100%	26	No BIM Approval requir																					
BIM MODEL SUBMISSION - Garden Gallery Ceramic Cladding (MPLUS-BIM-D002)																															
A53220	2nd BIM Model Submission	14	20-May-17	02-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	-20	No BIM Approval requir																					
A53230	2nd BIM Model Submission - Review & Approval	21	03-Jun-17	23-Jun-17	20-Jun-17	23-Jun-17 A	100%	100%	1	No BIM Approval requir																					
BIM MODEL SUBMISSION - Metal Cladding FAC-LV-01a/FAC-LV-01b (Additional Scope)																															

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
Portion B1R3 @ Grid Line A' to C' / 6' to 7'																															
A48290	Remove Scaffolds and Cleaning	3	20-May-17	23-May-17	22-May-17	15-Jun-17 A	100%	100%	-18																						
Portion B1R4 @ Grid Line A to A' / 6' to 7'																															
A48310	Concrete Curing period (2-weeks)	12	18-May-17	29-May-17	18-May-17	30-May-17 A	100%	100%	-1																						
A48320	Remove Scaffolds and Cleaning	3	31-May-17	02-Jun-17	16-Jun-17	30-Jun-17	100%	90%	-23																						
North Zoning @ Portion - S																															
Portion S2 @ Grid Line A / 6' to 2																															
A48340	Construct B1 Slab on Grid (Entrance Portal Road - RC 15C	14	20-May-17	06-Jun-17	07-Jun-17	23-Jun-17 A	100%	100%	-14	Need verify actual start																					
A48350	Concrete Curing period (2-days), remove formworks & c	4	07-Jun-17	10-Jun-17	21-Jun-17	23-Jun-17 A	100%	100%	-12	Need verify actual start																					
CSF Zoning @ Portion - T																															
Portion B1T4 @ Grid Line B' to D' / 3' to 6'																															
A48560	Remove scaffolds & cleaning	4	20-May-17	24-May-17	01-Jun-17	08-Jun-17 A	100%	100%	-11																						
Portion B1T5 @ Grid Line A to B' / 4' to 6'																															
A48630	Construct beams & slab (B1/F) (270 m3)	20	24-Apr-17	18-May-17	24-Apr-17	06-Jun-17 A	100%	100%	-14																						
A48640	Concrete Curing period (2-weeks)	12	21-May-17	01-Jun-17	07-Jun-17	19-Jun-17 A	100%	100%	-17																						
A48650	Remove scaffolds & cleaning	5	02-Jun-17	07-Jun-17	30-Jun-17	06-Jul-17	100%	0%	-24	B1 Cannot Support G/F																					
LG/F Level																															
CSF Zoning @ Portion - T																															
Portion LGT2 @ Grid Line D' to F' / 3' to 5'																															
A48940	Remove scaffolds & cleaning	11	20-May-17	02-Jun-17	03-May-17	31-May-17 A	100%	100%	3																						
Portion LGT3 @ Grid Line D' to F' / 5' to 6'																															
A48980	Remove scaffolds & cleaning	6	20-May-17	26-May-17	03-May-17	31-May-17 A	100%	100%	-2																						
Portion LGT4 @ Grid Line A' to D' / 3' to 6'																															
A49070	Remove scaffolds & cleaning	5	03-Jun-17	08-Jun-17	03-May-17	31-May-17 A	100%	100%	8																						
RDE Zoning @ Portion - U																															
Portion LGU1 @ Grid Line F' to J' / 1' to 3'																															
A49130	Remove scaffolds & cleaning	5	20-May-17	25-May-17	03-May-17	31-May-17 A	100%	100%	-3																						
Portion LGU2 @ Grid Line I' to J' / 4' to 6'																															
A49180	Remove scaffolds & cleaning	6	20-May-17	26-May-17	03-May-17	31-May-17 A	100%	100%	-2																						
Portion LGU3 @ Grid Line F' to J' / 3' to 6'																															
A49220	Remove scaffolds & cleaning	6	27-May-17	03-Jun-17	03-May-17	31-May-17 A	100%	100%	4																						
G/F Level																															
North Zoning @ Portion - R (B1/F to G/F)																															
Portion GFR1 @ Grid Line I' to J' / 6' to 7'																															
A49240	Construct Columns & Walls & Cols B1/F to G/F @ GL I'-J'	16	13-Feb-17	02-Mar-17	13-Feb-17	13-Jul-17	100%	35%	-105																						
A49250	Construct beams & slab (G/F) (180 m3)	18	03-Jun-17	23-Jun-17	13-Jul-17	03-Aug-17	100%	0%	-33																						
A49260	Concrete Curing period (2-weeks)	12	24-Jun-17	05-Jul-17	03-Aug-17	15-Aug-17	50%	0%	-40																						
A49270	Remove scaffolds & cleaning	6	06-Jul-17	12-Jul-17	15-Aug-17	22-Aug-17	0%	0%	-34																						
Portion GFR2 @ Grid Line F' to I' / 6' to 7'																															
A49280	Construct Columns & Walls & Cols B1/F to G/F @ GL F'-I'	16	06-Feb-17	23-Feb-17	06-Feb-17	17-Jul-17	100%	15%	-115																						
A49290	Construct beams & slab (G/F) (175 m3)	18	24-Jun-17	15-Jul-17	03-Aug-17	24-Aug-17	27.78%	0%	-33																						
A49300	Concrete Curing period (2-weeks)	12	16-Jul-17	27-Jul-17	24-Aug-17	05-Sep-17	0%	0%	-39																						
A49310	Remove scaffolds & cleaning	6	28-Jul-17	03-Aug-17	05-Sep-17	12-Sep-17	0%	0%	-33																						
Portion GFR3 @ Grid Line D' to F' / 6' to 7'																															
A49330	Construct Columns & Walls & Cols B1/F to G/F @ GL F'-I'	16	18-Apr-17	08-May-17	17-Apr-17	17-Jul-17	100%	15%	-58																						
A49340	Construct beams & slab (G/F) (184 m3)	16	17-Jul-17	03-Aug-17	24-Aug-17	12-Sep-17	0%	0%	-33																						
A49350	Concrete Curing period (2-weeks)	12	04-Aug-17	15-Aug-17	12-Sep-17	24-Sep-17	0%	0%	-39																						
A49360	Remove scaffolds & cleaning	6	16-Aug-17	22-Aug-17	25-Sep-17	30-Sep-17	0%	0%	-34																						
Portion GFR4 @ Grid Line D' to F' / 7' to 2																															
A49370	Construct Columns & Walls & Cols B1/F to G/F @ GL C'-I'	14	07-Jun-17	22-Jun-17	07-Jun-17	07-Jul-17	100%	60%	-12	Need verify actual start																					
A49380	Construct beams & slab (G/F) (149 m3)	14	04-Aug-17	19-Aug-17	12-Sep-17	28-Sep-17	0%	0%	-33																						
A49390	Concrete Curing period (2-weeks)	12	20-Aug-17	31-Aug-17	28-Sep-17	10-Oct-17	0%	0%	-39																						
A49400	Remove scaffolds & cleaning	6	01-Sep-17	07-Sep-17	10-Oct-17	17-Oct-17	0%	0%	-31																						
Portion GFR5 @ Grid Line B' to D' / 7' to 2																															
A49420	Construct Columns & Walls & Cols B1/F to G/F @ GL D'-I'	14	23-Jun-17	10-Jul-17	07-Jun-17	23-Jun-17 A	42.86%	100%	14	Need verify actual start																					
A49430	Construct beams & slab (G/F) (109 m3)	14	21-Aug-17	05-Sep-17	28-Sep-17	17-Oct-17	0%	0%	-33																						
A49440	Concrete Curing period (2-weeks)	12	06-Sep-17	17-Sep-17	17-Oct-17	29-Oct-17	0%	0%	-41																						
A49450	Remove scaffolds & cleaning	6	18-Sep-17	23-Sep-17	30-Oct-17	04-Nov-17	0%	0%	-33																						

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
Portion GFR6 @ Grid Line B' to D' / 6' to 7'																															
A49460	Construct Columns & Walls & Cols B1/F to G/F @ GL C'-l	14	11-Jul-17	26-Jul-17	05-Jun-17	17-Jul-17	0%	0%	8																						
A49470	Construct beams & slab (G/F) (148 m3)	14	27-Jul-17	11-Aug-17	18-Jul-17	02-Aug-17	0%	0%	8																						
A49480	Concrete Curing period (2-weeks)	12	12-Aug-17	23-Aug-17	03-Aug-17	14-Aug-17	0%	0%	9																						
A49490	Remove scaffolds & cleaning	6	24-Aug-17	30-Aug-17	15-Aug-17	21-Aug-17	0%	0%	8																						
Portion GFR7 @ Grid Line A to B' / 6' to 7'																															
A49510	Construct Columns & Walls & Cols B1/F to G/F @ GL A'-l	14	02-May-17	18-May-17	01-May-17	12-Jul-17	100%	35%	-44																						
A49520	Construct beams & slab (G/F) (132 m3)	14	03-Jun-17	19-Jun-17	12-Jul-17	28-Jul-17	100%	0%	-32																						
A49530	Concrete Curing period (2-weeks)	12	20-Jun-17	01-Jul-17	28-Jul-17	09-Aug-17	83.33%	0%	-38																						
A49540	Remove scaffolds & cleaning	6	03-Jul-17	08-Jul-17	09-Aug-17	16-Aug-17	0%	0%	-32																						
Portion GFR8 @ Grid Line A to B' / 7' to 2																															
A49640	Construct Columns & Walls & Cols B1/F to G/F @ GL A-A	14	03-Jun-17	19-Jun-17	19-Jun-17	12-Jul-17	100%	30%	-19																						
A49650	Construct beams & slab (G/F) (186 m3)	18	20-Jun-17	11-Jul-17	12-Jul-17	02-Aug-17	50%	0%	-19																						
A49660	Concrete Curing period (2-weeks)	12	12-Jul-17	23-Jul-17	02-Aug-17	14-Aug-17	0%	0%	-22																						
A49670	Remove scaffolds & cleaning	6	25-Sep-17	30-Sep-17	06-Nov-17	11-Nov-17	0%	0%	-33																						
North Zoning @ Portion - S (B1/F to G/F)																															
Portion GFS1 @ Grid Line A / 1 to 3																															
A49710	Construct beams & slab (G/F) (313 m3)	18	01-Feb-17	21-Feb-17	01-Feb-17	23-Jun-17 A	100%	100%	-97	Need verify actual finish																					
A49720	Concrete Curing period (2-weeks)	12	20-May-17	01-Jun-17	12-Jun-17	23-Jun-17 A	100%	100%	-21	Need verify actual start																					
A49730	Remove scaffolds & cleaning	6	01-Jun-17	08-Jun-17	19-Jun-17	23-Jun-17 A	100%	100%	-12	Need verify actual start																					
Portion GFS2 @ Grid Line A / 6' to 1																															
A49740	Construct Columns & Walls & Cols B1/F to G/F @ GL A /	14	20-May-17	06-Jun-17	12-Jun-17	05-Jul-17	100%	75%	-24	Need verify actual start																					
A49750	Construct beams & slab (G/F) (128 m3)	16	07-Jun-17	24-Jun-17	05-Jul-17	24-Jul-17	100%	0%	-24																						
A49760	Concrete Curing period (2-weeks)	12	25-Jun-17	06-Jul-17	24-Jul-17	05-Aug-17	41.67%	0%	-30																						
A49770	Remove scaffolds & cleaning	6	07-Jul-17	13-Jul-17	05-Aug-17	12-Aug-17	0%	0%	-26																						
CSF Zoning @ Portion - T (LG/F to G/F)																															
Portion GFT1 (LG/F to G/F) @ Grid Line D' to F' / 1' to 3'																															
A49810	Concrete Curing period (2-weeks)	12	21-May-17	01-Jun-17	26-May-17	09-Jun-17 A	100%	100%	-7																						
A49820	Remove scaffolds & cleaning	6	02-Jun-17	08-Jun-17	10-Jun-17	16-Jun-17 A	100%	100%	-6																						
A49830	Complete RDE Trx Room and Give Access to ABWF & ME	0	09-Jun-17		26-Jun-17		100%	100%	-13																						
Portion GFT2 (LG/F to G/F) @ Grid Line D' to F' / 3' to 5'																															
A49880	Remove scaffolds & cleaning	5	20-May-17	25-May-17	23-Jun-17	04-Jul-17	100%	50%	-32	Support 1/F																					
Portion GFT3 (LG/F to G/F) @ Grid Line D' to G' / 5' to 6'																															
A49920	Remove scaffolds & cleaning	5	20-May-17	25-May-17	24-Jun-17	04-Jul-17	100%	50%	-32	Support 1/F																					
Portion GFT4 (LG/F to G/F) @ Grid Line B' to D' / 3' to 6'																															
A49970	Commence CSF Building From G/F to 8/F (CMWP - 24 M	0	02-Jun-17		28-Apr-17		100%	100%	28																						
A49950	Concrete Curing period (2-weeks)	13	20-May-17	02-Jun-17	27-Apr-17	10-May-17 A	100%	100%	24																						
A49960	Remove scaffolds & cleaning	6	02-Jun-17	09-Jun-17	24-Jun-17	04-Jul-17	100%	50%	-20	Support 1/F																					
Portion GFT5 (B1/F to G/F) @ Grid Line A to B' / 4' to 6'																															
A50030	Construct Walls & Cols B1/F to G/F @ GL A-A' / 5'-6'	7	22-May-17	29-May-17	07-Jun-17	16-Jun-17 A	100%	100%	-14																						
A50040	Construct beams & slab (G/F) (216 m3)	18	31-May-17	20-Jun-17	17-Jun-17	20-Jul-17	100%	10%	-24																						
A50050	Concrete Curing period (2-weeks)	13	21-Jun-17	03-Jul-17	20-Jul-17	02-Aug-17	69.23%	0%	-29																						
A50060	Remove scaffolds & cleaning	4	04-Jul-17	07-Jul-17	02-Aug-17	07-Aug-17	0%	0%	-25																						
RDE Zoning @ Portion - U (LG/F to G/F)																															
Portion GFU3 (LG/F to G/F) @ Grid Line F' to I' / 3' to 6'																															
A50240	Remove scaffolds & cleaning	6	27-May-17	03-Jun-17	16-Jun-17	27-Jun-17 A	100%	100%	-19																						
CSF Super-Structure RC Works																															
CSF Building																															
CSF Structure @ Portion - T (G/F to 8/F)																															
Grid Line B' to F' / 4' to 6'																															
A50710	CSF - G/F to 1/F Construction	45	20-Mar-17	17-May-17	20-Mar-17	11-Jul-17	100%	80%	-45																						
A50720	CSF - 1/F to 2/F Construction	21	06-Jun-17	29-Jun-17	30-Jun-17	25-Jul-17	100%	0%	-21																						
A50730	CSF - 2/F to 3/F Construction	15	30-Jun-17	18-Jul-17	26-Jul-17	11-Aug-17	0%	0%	-21																						
A50750	CSF - 3/F to 4/F Construction (Incl envelope)	12	19-Jul-17	01-Aug-17	12-Aug-17	25-Aug-17	0%	0%	-21																						
A50760	CSF - 4/F to 5/F Construction (Incl envelope)	12	02-Aug-17	15-Aug-17	26-Aug-17	08-Sep-17	0%	0%	-21																						
A50770	CSF - 5/F to 6/F Construction (Incl envelope)	12	16-Aug-17	29-Aug-17	09-Sep-17	22-Sep-17	0%	0%	-21																						
A50780	CSF - 6/F to 7/F Construction	12	30-Aug-17	12-Sep-17	23-Sep-17	09-Oct-17	0%	0%	-21																						
A50790	CSF - 7/F to 8/F Construction	12	13-Sep-17	26-Sep-17	10-Oct-17	23-Oct-17	0%	0%	-21																						

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Activity ID	Activity Name	CMWP Dur.	CMWP - R0.D5 Start	CMWP -R0.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October								
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08								
Plantrooms																																						
FS Pump Room																																						
Builders' Work																																						
AB13370	Concrete plinth	5	30-Aug-17	03-Sep-17	20-Sep-17	24-Sep-17	0%	0%	-21																													
AB13380	Wall rendering	7	04-Sep-17	10-Sep-17	25-Sep-17	01-Oct-17	0%	0%	-21																													
AB13390	Floor Screeding	7	11-Sep-17	17-Sep-17	03-Oct-17	10-Oct-17	0%	0%	-21																													
AB13400	Wall Epoxy Paint	7	18-Sep-17	24-Sep-17	11-Oct-17	17-Oct-17	0%	0%	-21																													
AB13410	Sealer on ceiling soffit & application of epoxy paint on w	14	25-Sep-17	10-Oct-17	18-Oct-17	01-Nov-17	0%	0%	-21																													
IR/ RW/ ACC Condensate Pump Room & Water Meter Room																																						
Builders' Work																																						
AB13450	Concrete plinth	5	04-Sep-17	08-Sep-17	25-Sep-17	29-Sep-17	0%	0%	-21																													
AB13460	Wall rendering	7	09-Sep-17	15-Sep-17	30-Sep-17	08-Oct-17	0%	0%	-21																													
AB13470	Floor Screeding	7	16-Sep-17	22-Sep-17	09-Oct-17	15-Oct-17	0%	0%	-21																													
AB13480	Wall Epoxy Paint	7	23-Sep-17	29-Sep-17	16-Oct-17	22-Oct-17	0%	0%	-21																													
General Builders' Work																																						
AB13320	Steel Post	14	20-May-17	03-Jun-17	30-Jun-17	14-Jul-17	100%	0%	-40																													
AB13330	Blockwall	20	04-Jun-17	23-Jun-17	15-Jul-17	03-Aug-17	100%	0%	-40																													
AB13340	Wall Plastering	14	23-Jun-17	08-Jul-17	03-Aug-17	17-Aug-17	45.71%	0%	-40																													
AB13350	Floor Screeding	7	08-Jul-17	15-Jul-17	17-Aug-17	24-Aug-17	0%	0%	-40																													
AB13360	Drywall (MEP consealed items, close up panel)	14	16-Aug-17	29-Aug-17	06-Sep-17	19-Sep-17	0%	0%	-21																													
General BS Installation																																						
Electrical Systems																																						
AB13925	MEP 1st fix - B2F Sector A	30	30-Aug-17	28-Sep-17	20-Sep-17	21-Oct-17	0%	0%	-21																													
Plumbing & Drainage																																						
AB52060	P&D 1st fix - B2F Sector A	30	30-Aug-17	28-Sep-17	20-Sep-17	21-Oct-17	0%	0%	-21																													
AB52070	P&D 2nd fix - B2F Sector A	45	29-Sep-17	15-Nov-17	22-Oct-17	06-Dec-17	0%	0%	-21																													
FS System																																						
AB52090	FS 1st fix - B2F Sector A	30	30-Aug-17	28-Sep-17	20-Sep-17	21-Oct-17	0%	0%	-21																													
AB52100	FS 2nd fix - B2F Sector A	45	29-Sep-17	15-Nov-17	22-Oct-17	06-Dec-17	0%	0%	-21																													
HVAC System																																						
AB52120	HVAC 1st fix - B2F Sector A	60	30-Aug-17	31-Oct-17	20-Sep-17	21-Nov-17	0%	0%	-21																													
Workshops, Storages & Offices																																						
I.S. Workshop Facility, MO EQ Room																																						
AB13870	Skim coat, application of epoxy paint on wall and sealer	14	08-Sep-17	21-Sep-17	20-Oct-17	03-Nov-17	0%	0%	-40																													
Exhibit Tech/ Electrical Workroom, Corridor, Exhibit Lighting Electrical Shop/ Storage, General Stor																																						
AB13910	Skim coat, application of epoxy paint on wall and sealer	14	22-Sep-17	07-Oct-17	04-Nov-17	17-Nov-17	0%	0%	-40																													
B2/F - Zone H (Sector B)																																						
Plantrooms																																						
DCS Chiller Plant																																						
Builders' Work																																						
AB11330	Concrete Plinth	5	26-Sep-17	30-Sep-17	05-Nov-17	09-Nov-17	0%	0%	-37																													
Main Control Circuit Room																																						
Builders' Work																																						
AB11290	Steel Post	7	26-Sep-17	03-Oct-17	05-Nov-17	11-Nov-17	0%	0%	-37																													
General Builders' Work																																						
AB11360	Steel Post	7	19-Sep-17	26-Sep-17	29-Oct-17	05-Nov-17	0%	0%	-37																													
AB11370	Blockwall	7	26-Sep-17	03-Oct-17	05-Nov-17	11-Nov-17	0%	0%	-37																													
B2/F - Zone A (Sector C)																																						
Plantrooms																																						
SH Water Tank/ Street Hydrant Tank																																						
AB11910	Waterproofing & water test	12	17-Jul-17	28-Jul-17	26-Aug-17	06-Sep-17	0%	0%	-40																													
AB11920	Plastering work (inside tank)	10	29-Jul-17	07-Aug-17	07-Sep-17	16-Sep-17	0%	0%	-40																													
AB11930	Wall & floor tiling	14	08-Aug-17	21-Aug-17	17-Sep-17	30-Sep-17	0%	0%	-40																													
AB11940	Application of sealer on soffit (outside tank)	7	22-Aug-17	28-Aug-17	01-Oct-17	09-Oct-17	0%	0%	-40																													
AB11950	Cat ladder	7	29-Aug-17	04-Sep-17	10-Oct-17	16-Oct-17	0%	0%	-40																													
AB11960	Hatch cover	7	05-Sep-17	11-Sep-17	17-Oct-17	23-Oct-17	0%	0%	-40																													
Grease Trap Room for Podium																																						
Builders' Work																																						

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Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
AB52280	MEP 1st fix - B2F Sector C	30	15-Mar-17	16-Apr-17	15-Mar-17	25-Jul-17	100%	18%	-95	MEP work shared with v																					
AB52290	MEP 2nd fix - B2F Sector C	45	10-Apr-17	29-May-17	10-Apr-17	07-Aug-17	100%	17%	-67	Pending for RCP submis																					
AB52300	MEP Final fix - B2F Sector C	30	03-Jul-17	01-Aug-17	07-Aug-17	06-Sep-17	0%	0%	-35	MEP work in line with /																					
Plumbing & Drainage																															
AB52310	P&D 1st fix - B2F Sector C	30	06-Feb-17	07-Mar-17	06-Feb-17	27-Jul-17	100%	12%	-133	MEP work shared with v																					
AB52320	P&D 2nd fix - B2F Sector C	45	10-Apr-17	29-May-17	10-Apr-17	11-Aug-17	100%	8%	-71	Pending for RCP submis																					
AB52330	P&D Final fix - B2F Sector C	30	03-Jul-17	01-Aug-17	11-Aug-17	10-Sep-17	0%	0%	-39																						
FS System																															
AB52340	FS 1st fix - B2F Sector C	30	15-Mar-17	16-Apr-17	15-Mar-17	24-Jul-17	100%	22%	-93	MEP work shared with v																					
AB52350	FS 2nd fix - B2F Sector C	45	10-Apr-17	29-May-17	10-Apr-17	09-Aug-17	100%	12%	-70	Pending for RCP submis																					
AB52360	FS Final fix - B2F Sector C	30	03-Jul-17	01-Aug-17	09-Aug-17	08-Sep-17	0%	0%	-38																						
HVAC System																															
AB52370	HVAC 1st fix - B2F Sector C	60	06-Feb-17	07-Apr-17	06-Feb-17	16-Aug-17	100%	22%	-124	MEP work shared with v																					
AB52380	HVAC 2nd fix - B2F Sector C	69	16-Jul-17	22-Sep-17	20-Jun-17	03-Sep-17	0%	6%	19																						
AB52390	HVAC Final fix - B2F Sector C	30	23-Sep-17	24-Oct-17	03-Sep-17	04-Oct-17	0%	0%	19																						
Workshops, Storages & Offices																															
Bulk Supply Storage, Museum Workshops, ICT Riser, Display Case -Plinth-Vitrine, Exhibit Workshops																															
AB12240	Construction of maintenance platform	48	23-Sep-17	12-Nov-17	05-Nov-17	22-Dec-17	0%	0%	-40																						
Non-Art Loading Dock, Non-Art Holding/ Shipping/ Receiving Lock-up 1, Mail Room 1																															
AB12420	Ceiling framework	21	03-Jul-17	23-Jul-17	07-Aug-17	28-Aug-17	0%	0%	-35																						
AB12430	MEP dropper	7	17-Jul-17	23-Jul-17	21-Aug-17	28-Aug-17	0%	0%	-35																						
AB12440	Ceiling close-up	14	24-Jul-17	06-Aug-17	28-Aug-17	11-Sep-17	0%	0%	-35																						
AB12450	Skim coat, application of sealer on wall, soffit and floor	14	07-Aug-17	20-Aug-17	11-Sep-17	25-Sep-17	0%	0%	-35																						
AB12460	Wall protection & corner guards installation	14	21-Aug-17	03-Sep-17	25-Sep-17	11-Oct-17	0%	0%	-35																						
AB12470	Door & ironmongeries installation	7	04-Sep-17	10-Sep-17	11-Oct-17	18-Oct-17	0%	0%	-35																						
Uniforms & Equipment Storage, RDE Storage, General Maintenance																															
AB12480	Application of epoxy paint on wall and sealer on floor	21	21-Aug-17	10-Sep-17	25-Sep-17	18-Oct-17	0%	0%	-35																						
Security Briefing Room, Security Office, Security Locker Room																															
AB12290	Acoustic ceiling framework	21	03-Jul-17	23-Jul-17	07-Aug-17	28-Aug-17	0%	0%	-35																						
AB12300	MEP dropper	7	17-Jul-17	23-Jul-17	21-Aug-17	28-Aug-17	0%	0%	-35																						
AB12310	Acoustic ceiling close up	14	24-Jul-17	06-Aug-17	28-Aug-17	11-Sep-17	0%	0%	-35																						
AB12320	Application of epoxy paint on wall	14	07-Aug-17	20-Aug-17	11-Sep-17	25-Sep-17	0%	0%	-35																						
Toilets																															
Public Toilets & Toilet Lobby (Benchmark Toilet)																															
Toilet Block																															
AB50980	Waterproofing & water test complete	0		15-Aug-17		08-Sep-17	0%	0%	-24																						
AB50990	Protective floor screeding	2	16-Aug-17	17-Aug-17	08-Sep-17	10-Sep-17	0%	0%	-24																						
AB51000	Gypsum ceiling frameworjk	7	18-Aug-17	24-Aug-17	10-Sep-17	17-Sep-17	0%	0%	-24																						
AB51100	Steel frame for vanity counter	7	19-Aug-17	25-Aug-17	11-Sep-17	18-Sep-17	0%	0%	-24																						
AB51010	Wall tiling	14	26-Aug-17	08-Sep-17	18-Sep-17	03-Oct-17	0%	0%	-24																						
AB51020	Polished concrete floor (by others)	3	09-Sep-17	11-Sep-17	03-Oct-17	07-Oct-17	0%	0%	-24																						
AB51110	MEP dropper	5	12-Sep-17	16-Sep-17	07-Oct-17	12-Oct-17	0%	0%	-24																						
AB51030	Gypsum ceiling close-up	5	17-Sep-17	21-Sep-17	12-Oct-17	17-Oct-17	0%	0%	-24																						
AB51040	Taping & jointing and painting on ceiling	7	22-Sep-17	28-Sep-17	17-Oct-17	24-Oct-17	0%	0%	-24																						
AB51050	Emulsion paint to wall gypsum board (Baby Room only)	7	29-Sep-17	07-Oct-17	24-Oct-17	01-Nov-17	0%	0%	-24																						
Toilet Lobby																															
AB51210	Floor screeding to receive resilient	2	17-Sep-17	18-Sep-17	12-Oct-17	14-Oct-17	0%	0%	-24																						
AB51130	Ceiling framework	7	19-Sep-17	25-Sep-17	14-Oct-17	21-Oct-17	0%	0%	-24																						
AB51140	Subframe & plywood furring for timber wall	6	26-Sep-17	01-Oct-17	21-Oct-17	27-Oct-17	0%	0%	-24																						
B2/F - Zone D, Zone B & Zone A (Sector D)																															
MEP Plantrooms																															
ELV (First Access Areas)																															
Builders' Works																															
AB52400	Steel Post	3	29-Jun-17	02-Jul-17	30-Jun-17	03-Jul-17	33.33%	0%	-1																						
AB52410	Blockwall	5	03-Jul-17	07-Jul-17	04-Jul-17	08-Jul-17	0%	0%	-1																						
AB52420	Wall Plastering	7	08-Jul-17	14-Jul-17	09-Jul-17	15-Jul-17	0%	0%	-1																						
AB52430	Floor Screeding	7	15-Jul-17	21-Jul-17	16-Jul-17	22-Jul-17	0%	0%	-1																						
AB52440	Sealer on ceiling soffit & application of epoxy paint on w	3	22-Jul-17	24-Jul-17	23-Jul-17	25-Jul-17	0%	0%	-1																						

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP - R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
B2/F - Zone B1U2 (Sector G)																															
Plantrooms																															
RDE Potable Water Tank																															
AB14300	Waterproofing works & water test	12	26-Jun-17	08-Jul-17	06-Aug-17	17-Aug-17	33.33%	0%	-40																						
AB14310	Plastering work (inside tank)	10	09-Jul-17	18-Jul-17	18-Aug-17	27-Aug-17	0%	0%	-40																						
AB14320	Wall & floor tiling	14	19-Jul-17	01-Aug-17	28-Aug-17	10-Sep-17	0%	0%	-40																						
AB14330	Application of sealer on soffit (outside tank)	7	02-Aug-17	08-Aug-17	11-Sep-17	17-Sep-17	0%	0%	-40																						
AB14340	Cat ladder	7	09-Aug-17	15-Aug-17	18-Sep-17	24-Sep-17	0%	0%	-40																						
AB14350	Hatch cover	7	16-Aug-17	22-Aug-17	25-Sep-17	01-Oct-17	0%	0%	-40																						
Heat Exchanger Room																															
Builders' Work																															
AB14220	Concrete plinth and waterproofing works	12	07-Jun-17	18-Jun-17	18-Jul-17	29-Jul-17	100%	0%	-40																						
AB14230	Floor Screeding & wall rendering	7	19-Jun-17	25-Jun-17	30-Jul-17	05-Aug-17	100%	0%	-40																						
AB14240	Sealer on ceiling soffit & application of epoxy paint on w	14	26-Jun-17	10-Jul-17	06-Aug-17	19-Aug-17	28.57%	0%	-40																						
BS Installation																															
AB14250	Heat Exchanger Room - MEP 2nd fix	15	11-Jul-17	25-Jul-17	20-Aug-17	03-Sep-17	0%	0%	-40																						
AB14260	Install heat exchanger	30	26-Jul-17	24-Aug-17	04-Sep-17	04-Oct-17	0%	0%	-40																						
Final Finishes																															
AB14270	Final coat of paint on wall	3	25-Aug-17	27-Aug-17	06-Oct-17	08-Oct-17	0%	0%	-40																						
AB14280	Sealer on floor	3	28-Aug-17	30-Aug-17	09-Oct-17	11-Oct-17	0%	0%	-40																						
AB14290	Door & ironmongeries installation	3	01-Sep-17	03-Sep-17	12-Oct-17	14-Oct-17	0%	0%	-39																						
ELE Room																															
Builders' Work																															
AB14370	Sealer on ceiling soffit & application of epoxy paint on w	7	09-Aug-17	15-Aug-17	18-Sep-17	24-Sep-17	0%	0%	-40																						
BS Installation																															
AB14380	ELE Room - MEP 2nd fix	14	16-Aug-17	29-Aug-17	25-Sep-17	10-Oct-17	0%	0%	-40																						
AB14390	Install ELE system	30	30-Aug-17	28-Sep-17	11-Oct-17	10-Nov-17	0%	0%	-40																						
Final Finishes																															
AB14400	Final coat of paint on wall	3	29-Sep-17	01-Oct-17	11-Nov-17	13-Nov-17	0%	0%	-40																						
Grease Trap Room																															
Builders' Work																															
AB14430	Concrete plinth and waterproofing works	12	16-Aug-17	27-Aug-17	25-Sep-17	08-Oct-17	0%	0%	-40																						
AB14440	Floor Screeding & wall rendering	7	28-Aug-17	03-Sep-17	09-Oct-17	15-Oct-17	0%	0%	-40																						
AB14450	Sealer on ceiling soffit & application of epoxy paint on w	14	04-Sep-17	17-Sep-17	16-Oct-17	30-Oct-17	0%	0%	-40																						
BS Installation																															
AB14460	Grease Trap Room - MEP 2nd fix	14	18-Sep-17	01-Oct-17	31-Oct-17	13-Nov-17	0%	0%	-40																						
CSF IR/ RW Tank & Pump Room																															
Builders' Work																															
AB14510	Concrete plinth and waterproofing works	12	04-Sep-17	15-Sep-17	16-Oct-17	27-Oct-17	0%	0%	-40																						
AB14520	Floor Screeding & wall rendering	7	16-Sep-17	22-Sep-17	29-Oct-17	04-Nov-17	0%	0%	-40																						
AB14530	Sealer on ceiling soffit & application of epoxy paint on w	14	23-Sep-17	08-Oct-17	05-Nov-17	18-Nov-17	0%	0%	-40																						
RDE FS Tank Pump Room																															
Builders' Work																															
AB14590	Concrete plinth and waterproofing works	12	23-Sep-17	06-Oct-17	05-Nov-17	16-Nov-17	0%	0%	-40																						
RDE Security Control Room																															
Builders' Work																															
AB15180	Acoustic ceiling framework	7	16-Sep-17	22-Sep-17	29-Oct-17	04-Nov-17	0%	0%	-40																						
BS Installation																															
AB15190	RDE Security Room - MEP 2nd fix	5	23-Sep-17	27-Sep-17	05-Nov-17	09-Nov-17	0%	0%	-40																						
AB15200	RDE Security Room - MEP Final fix	0	28-Sep-17		10-Nov-17		0%	0%	-40																						
Final Finishes																															
AB15210	Acoustic ceiling close-up	7	28-Sep-17	06-Oct-17	10-Nov-17	16-Nov-17	0%	0%	-40																						
General Builders' Work																															
AB14170	Steel Post	7	20-May-17	26-May-17	30-Jun-17	07-Jul-17	100%	0%	-40																						
AB14180	Blockwall	10	27-May-17	06-Jun-17	08-Jul-17	17-Jul-17	100%	0%	-40																						
AB14190	Wall Plastering	18	07-Jun-17	24-Jun-17	18-Jul-17	04-Aug-17	100%	0%	-40																						
AB14200	Floor Screeding	7	25-Jun-17	02-Jul-17	05-Aug-17	11-Aug-17	71.43%	0%	-40																						
AB14210	Drywall (MEP consealed items, close up panel)	14	03-Jul-17	16-Jul-17	12-Aug-17	25-Aug-17	0%	0%	-40																						

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Activity ID	Activity Name	CMWP Dur.	CMWP - R0.D5 Start	CMWP - R0.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
General BS Installation																															
Electrical System																															
AB52800	MEP 1st fix - B2F Sector G	30	03-Jul-17	01-Aug-17	12-Aug-17	10-Sep-17	0%	0%	-40																						
AB52810	MEP 2nd fix - B2F Sector G	45	02-Aug-17	15-Sep-17	11-Sep-17	27-Oct-17	0%	0%	-40																						
AB52820	MEP Final fix - B2F Sector G	30	16-Sep-17	17-Oct-17	29-Oct-17	27-Nov-17	0%	0%	-40																						
Plumbing & Drainage																															
AB52830	P&D 1st fix - B2F Sector G	30	03-Jul-17	01-Aug-17	12-Aug-17	10-Sep-17	0%	0%	-40																						
AB52840	P&D 2nd fix - B2F Sector G	45	02-Aug-17	15-Sep-17	11-Sep-17	27-Oct-17	0%	0%	-40																						
AB52850	P&D Final fix - B2F Sector G	30	16-Sep-17	17-Oct-17	29-Oct-17	27-Nov-17	0%	0%	-40																						
FS System																															
AB52860	FS 1st fix - B2F Sector G	30	03-Jul-17	01-Aug-17	12-Aug-17	10-Sep-17	0%	0%	-40																						
AB52870	FS 2nd fix - B2F Sector G	45	02-Aug-17	15-Sep-17	11-Sep-17	27-Oct-17	0%	0%	-40																						
AB52880	FS Final fix - B2F Sector G	30	16-Sep-17	17-Oct-17	29-Oct-17	27-Nov-17	0%	0%	-40																						
HVAC System																															
AB52890	HVAC 1st fix - B2F Sector G	60	03-Jul-17	31-Aug-17	12-Aug-17	12-Oct-17	0%	0%	-40																						
AB52900	HVAC 2nd fix - B2F Sector G	69	01-Sep-17	11-Nov-17	13-Oct-17	21-Dec-17	0%	0%	-40																						
B1/F - Zone E & Zone G (Sector A)																															
General Builders' Work																															
AB19130	Steel Post	14	02-Sep-17	15-Sep-17	08-Oct-17	21-Oct-17	0%	0%	-34																						
AB19140	Blockwall	14	16-Sep-17	29-Sep-17	22-Oct-17	05-Nov-17	0%	0%	-34																						
B1/F - Zone H, Zone G, Zone J, Zone K & Zone L (Sector B)																															
Plantrooms																															
Transformer Room C																															
Builders' Work																															
AB21130	Construct plinth	5	29-Sep-17	04-Oct-17	09-Nov-17	13-Nov-17	0%	0%	-38																						
AHU Room																															
Builders' Work																															
AB53180	Steel Post	7	29-Sep-17	07-Oct-17	09-Nov-17	15-Nov-17	0%	0%	-38																						
ELV																															
Builders' Work																															
AB53230	Steel Post	7	29-Sep-17	07-Oct-17	09-Nov-17	15-Nov-17	0%	0%	-38																						
ICT																															
Builders' Work																															
AB53280	Steel Post	7	29-Sep-17	07-Oct-17	09-Nov-17	15-Nov-17	0%	0%	-38																						
ELV Lead-in Room																															
Builders' Work																															
AB53330	Steel Post	7	29-Sep-17	07-Oct-17	09-Nov-17	15-Nov-17	0%	0%	-38																						
B1/F - Zone A1, Zone A4 & Zone A5 (Sector C)																															
Plantrooms																															
Transformer Room B																															
Builders' Work																															
AB16700	Wall tiling (1.5m high)	10	25-May-17	04-Jun-17	01-Jun-17	27-Jun-17 A	100%	100%	-22																						
AB16730	Sealer on ceiling soffit & application of epoxy paint on w	6	19-Jun-17	24-Jun-17	29-Apr-17	02-Jul-17	100%	80%	-6																						
AB16710	Floor screeding	4	05-Jun-17	08-Jun-17	30-Jun-17	04-Jul-17	100%	0%	-25																						
AB16680	Construct plinth	5	20-May-17	24-May-17	30-Jun-17	05-Jul-17	100%	0%	-40																						
AB16720	Installation of cable trench cover	10	09-Jun-17	18-Jun-17	05-Jul-17	14-Jul-17	100%	0%	-25																						
BS Installation																															
AB16740	Transformer Room B - MEP 2nd fix	14	15-May-17	28-May-17	15-May-17	12-Jul-17	100%	20%	-42	Waiting for completion c																					
AB16750	Inspection by CLP	14	01-Jun-17	14-Jun-17	12-Jul-17	26-Jul-17	100%	0%	-40																						
AB53500	H/O TX Room B to CLP	0	15-Jun-17		26-Jul-17		100%	0%	-40																						
AB53510	CLP Installation for TX Room B	90	15-Jun-17	13-Sep-17	26-Jul-17	26-Oct-17	16.67%	0%	-40																						
AB53520	TX Room B Power ON	0		20-Sep-17		02-Nov-17	0%	0%	-40																						
Final Finishes																															
AB16760	Final coat of paint on ceiling & wall	3	21-Sep-17	23-Sep-17	03-Nov-17	05-Nov-17	0%	0%	-40																						
AB16770	Door & ironmongeries installation	3	24-Sep-17	26-Sep-17	06-Nov-17	08-Nov-17	0%	0%	-40																						
Transformer Room A																															
Builders' Work																															
AB16800	Wall tiling (1.5m high)	10	25-May-17	04-Jun-17	21-Jun-17	30-Jun-17	100%	99%	-25																						

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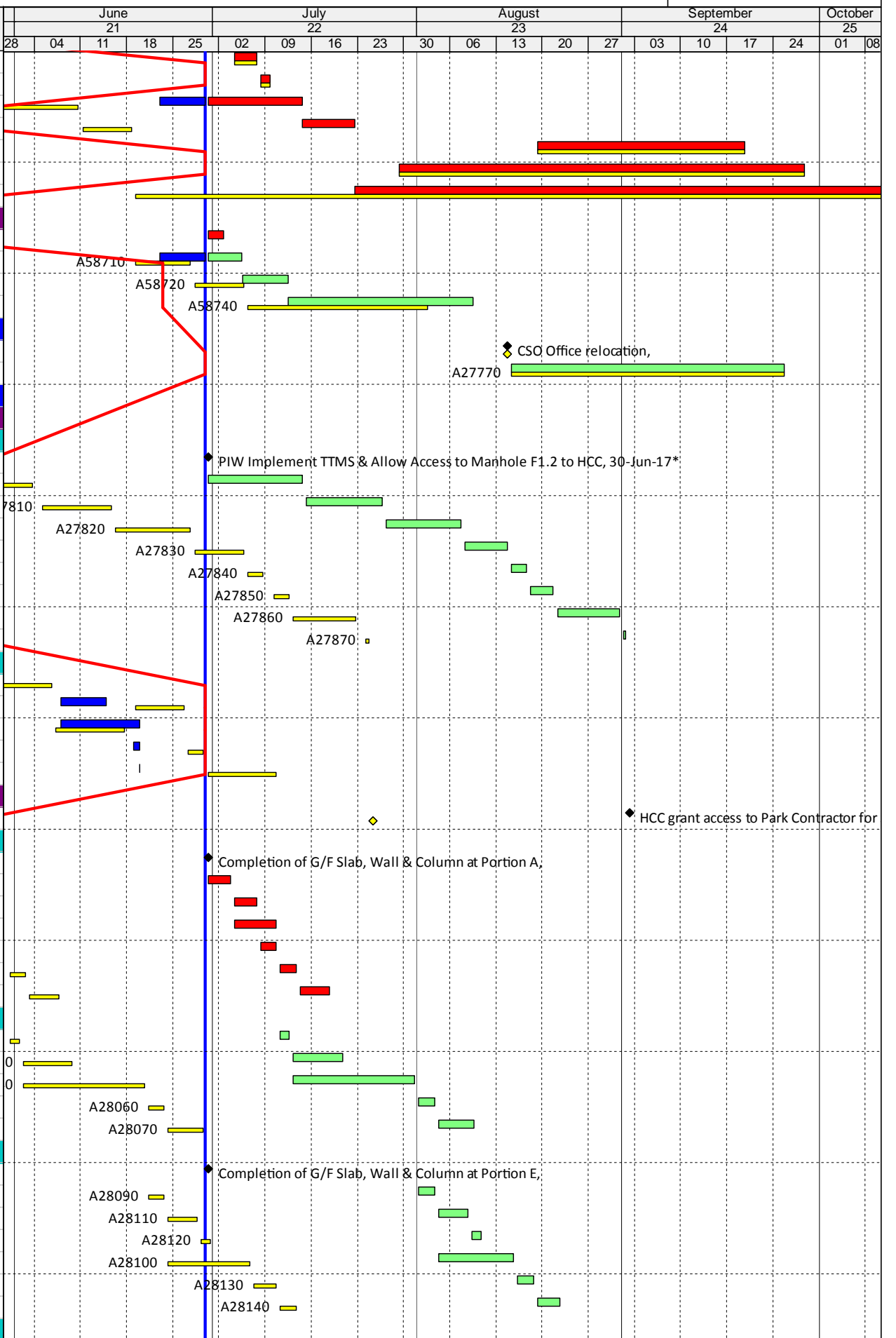
Activity ID	Activity Name	CMWP Dur.	CMWP - R.O.D5 Start	CMWP -R.O.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October	
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
Builders' Work																															
A56100	Plastering & screeding	6	02-May-17	09-May-17	02-May-17	03-Jul-17	100%	80%	-44	remark: 20% is screedir																					
BS Installation																															
A56530	SPS - Install Fans (2 nos.) & Equipment	30	19-May-17	23-Jun-17	19-May-17	19-Jul-17	100%	20%	-21	Fans delivered on 21/6																					
A56540	SPS - MEP 2nd & final fix	6	22-Jun-17	28-Jun-17	20-Jul-17	26-Jul-17	100%	0%	-23																						
Final Finishes																															
A56110	Apply paint coating on ceiling & wall	4	29-Jun-17	04-Jul-17	24-Jun-17	27-Jun-17 A	25%	100%	6																						
A56120	Apply floor sealer	3	05-Jul-17	07-Jul-17	03-Jul-17	06-Jul-17	0%	0%	2																						
A56130	Door & ironmongeries installation	3	05-Jul-17	07-Jul-17	03-Jul-17	06-Jul-17	0%	0%	2																						
Pump Station Service Yard																															
Builders' Work																															
A55730	Blockwall	12	06-May-17	19-May-17	06-May-17	22-Jun-17 A	100%	100%	-27																						
A55740	Plastering & screeding	10	10-May-17	20-May-17	10-May-17	03-Jul-17	100%	80%	-35	remark: 20% is screedir																					
A55750	Channel grating & trench cover installation	7	31-May-17	07-Jun-17	04-Jul-17	11-Jul-17	100%	0%	-28																						
BS Installation																															
A55760	SPS - MEP 2nd Fix for Pump Station Service Yard	14	08-Jun-17	23-Jun-17	29-May-17	11-Jul-17	100%	40%	-13																						
Final Finishes																															
A56500	Apply paint on ceiling & wall	10	26-Jun-17	07-Jul-17	19-Jun-17	23-Jun-17 A	40%	100%	12																						
A56520	Door & ironmongeries installation	3	14-Jul-17	17-Jul-17	26-Jun-17	04-Jul-17	0%	10%	11																						
A56510	Apply floor sealer	5	08-Jul-17	13-Jul-17	30-Jun-17	06-Jul-17	0%	0%	6																						
A56490	Install roller shutter (for security)	7	17-Jun-17	24-Jun-17	04-Jul-17	12-Jul-17	100%	0%	-13																						
Cleansing & Flushing Water Tank Room																															
Builders' Work																															
A56190	Plastering & screeding	6	10-May-17	16-May-17	10-May-17	03-Jul-17	100%	80%	-38	remark: 20% is screedir																					
A56200	Install glass-fibre water tank supporting frame	6	25-May-17	01-Jun-17	03-Jul-17	10-Jul-17	100%	0%	-31																						
BS Installation																															
A32170	SPS - Install Water Tank, Pipeworks & Testing	36	02-Jun-17	14-Jul-17	20-Jun-17	26-Jul-17	66.67%	10%	-10																						
A32160	SPS - Install Pumps, Valves & Equipment	36	25-May-17	07-Jul-17	21-Jun-17	28-Jul-17	83.33%	5%	-18																						
Final Finishes																															
A56210	Apply paint coating on ceiling & wall	7	15-Jul-17	22-Jul-17	19-Jun-17	23-Jun-17 A	0%	100%	25																						
A56220	Apply floor sealer	3	24-Jul-17	26-Jul-17	10-Jul-17	13-Jul-17	0%	0%	12																						
A56230	Door & ironmongeries installation	3	24-Jul-17	26-Jul-17	10-Jul-17	13-Jul-17	0%	0%	12																						
Sprinkler Tank																															
A56260	Wall & floor tiling	8	13-Jun-17	21-Jun-17	10-Apr-17	21-Apr-17 A	100%	100%	50	Omitted already																					
A56240	Waterproofing & water test	12	08-May-17	20-May-17	08-May-17	04-Jul-17	100%	80%	-35																						
A56270	Install Cat ladder & hatch cover	4	19-Jun-17	22-Jun-17	30-Jun-17	05-Jul-17	100%	0%	-10																						
A56250	Plaster work (inside tank)	8	03-Jun-17	12-Jun-17	22-May-17	10-Jul-17	100%	0%	-23																						
FS Tank																															
A56300	Wall & floor tiling	8	13-Jun-17	21-Jun-17	10-Apr-17	21-Apr-17 A	100%	100%	50	Omitted already																					
A56280	Waterproofing & water test	12	10-May-17	23-May-17	10-May-17	04-Jul-17	100%	80%	-33																						
A56310	Install Cat ladder & hatch cover	4	19-Jun-17	22-Jun-17	30-Jun-17	05-Jul-17	100%	0%	-10																						
A56290	Plaster work (inside tank)	8	03-Jun-17	12-Jun-17	22-May-17	10-Jul-17	100%	0%	-23																						
Accessible Unisex Toilet																															
Builders' Work																															
A56320	Waterproofing & water test	5	20-May-17	25-May-17	19-Jun-17	23-Jun-17 A	100%	100%	-23																						
A56330	Protective screeding / floor screeding	2	26-May-17	27-May-17	22-Jun-17	23-Jun-17 A	100%	100%	-21																						
A56340	Wall & floor tiling	6	29-May-17	05-Jun-17	19-Jun-17	30-Jun-17	100%	90%	-22																						
A56350	Gypsum/cement board ceiling framework & close-up	6	06-Jun-17	12-Jun-17	22-Jun-17	07-Jul-17	100%	10%	-20																						
BS Installation																															
A56360	SPS - MEP 2nd Fix for Accessible Unisex Toilet	14	13-Jun-17	28-Jun-17	07-Jul-17	21-Jul-17	100%	0%	-18																						
Final Finishes																															
A56370	Apply Taping joint & painting on ceiling	4	29-Jun-17	04-Jul-17	21-Jul-17	25-Jul-17	25%	0%	-17																						
A56390	Door & ironmongeries installation	3	11-Jul-17	13-Jul-17	25-Jul-17	28-Jul-17	0%	0%	-12																						
A56380	Sanitary wares & fitting installation	5	05-Jul-17	10-Jul-17	25-Jul-17	28-Jul-17	0%	0%	-15																						
A56400	Mirror installation	1	14-Jul-17	14-Jul-17	28-Jul-17	29-Jul-17	0%	0%	-12																						
Corridor																															
Builders' Work																															
A31875	Blockwall	10	20-May-17	01-Jun-17	22-May-17	26-Jun-17 A	100%	100%	-20																						

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R0.D5 Start	CMWP - R0.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July				August				September				October			
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	
Stage 2B																															
Install waling and Strut at +1.5mPD for Sheet Pile Type A1																															
A32880	Portion B10 - Install waling and Strut @ +1.5mPD	2	01-Mar-17	02-Mar-17	01-Mar-17	30-Jun-17	100%	75%	-96																						
Stage 3																															
B1 Slab Construction (Phase 3) - Construct B2/F to B1/F Coils, Walls & B1 Slab and Remove Struts																															
Portion A16																															
A34340	Portion A6 - Removal of Lateral Support	2	12-May-17	13-May-17	12-May-17	14-Jun-17 A	100%	100%	-25																						
A34350	Portion A16 - Columns & Walls Construction (Deffered A)	4	10-Apr-17	13-Apr-17	10-Apr-17	30-Jun-17	100%	90%	-60																						
A34360	Portion A16 - Construct B1 Slab (Deffered Area)	3	20-May-17	24-May-17	30-Jun-17	05-Jul-17	100%	0%	-34																						
Portion B18																															
A34390	Portion B6 - Removal of Lateral Support	2	12-May-17	13-May-17	12-May-17	14-Jun-17 A	100%	100%	-25																						
A34400	Portion B18 - Columns & Walls Construction (Deffered A)	3	18-Apr-17	20-Apr-17	17-Apr-17	27-Jun-17 A	100%	100%	-54																						
A34410	Portion B18 - Construct B1 Slab (Deffered Area)	3	20-May-17	24-May-17	30-Jun-17	04-Jul-17	100%	0%	-34																						
Portion A17																															
A34440	Portion A7 - Removal of Lateral Support	2	15-May-17	16-May-17	15-May-17	30-Jun-17	100%	80%	-37																						
Portion B19																															
A34470	Portion B7 - Removal of Lateral Support	2	15-May-17	16-May-17	15-May-17	09-Jun-17 A	100%	100%	-20																						
A34480	Portion B19 - Columns & Walls Construction (Deffered A)	3	02-May-17	05-May-17	02-May-17	12-Jun-17 A	100%	100%	-30																						
A34490	Portion B19 - Construct B1 Slab (Deffered Area)	3	20-May-17	24-May-17	20-May-17	15-Jun-17 A	100%	100%	-18																						
Portion A18																															
A34520	Portion A8 - Removal of Lateral Support	2	10-Apr-17	11-Apr-17	10-Apr-17	09-Jun-17 A	100%	100%	-44	additional waterproofin																					
A34540	Portion A18 - Construct B1 Slab (Deffered Area)	3	20-May-17	23-May-17	22-May-17	09-Jun-17 A	100%	100%	-13																						
Portion B20																															
A34570	Portion B8 - Removal of Lateral Support	2	29-May-17	31-May-17	29-May-17	15-Jun-17 A	100%	100%	-12																						
Portion B21																															
A34600	Portion B9 - Removal of Lateral Support	2	15-May-17	16-May-17	15-May-17	23-Jun-17 A	100%	100%	-31																						
A34610	Portion B21 - Columns & Walls Construction (Deffered A)	3	28-Apr-17	02-May-17	28-Apr-17	30-Jun-17	100%	95%	-48																						
A34620	Portion B21 - Construct B1 Slab (Deffered Area)	3	20-May-17	24-May-17	30-Jun-17	05-Jul-17	100%	0%	-34																						
Portion B22																															
A34650	Portion B10 - Removal of Lateral Support	2	08-May-17	09-May-17	08-May-17	07-Jun-17 A	100%	100%	-23																						
A34660	Portion B22 - Columns & Walls Construction (Deffered A)	3	09-May-17	11-May-17	09-May-17	12-Jun-17 A	100%	100%	-25																						
A34670	Portion B22 - Construct B1 Slab (Deffered Area)	3	22-May-17	24-May-17	22-May-17	15-Jun-17 A	100%	100%	-17																						
Portion A19																															
A34700	Portion A9 - Removal of Lateral Support	2	12-May-17	13-May-17	12-May-17	23-Jun-17 A	100%	100%	-33																						
A34720	Portion A19 - Construct B1 Slab (Deffered Area)	3	20-May-17	23-May-17	30-Jun-17	04-Jul-17	100%	0%	-34																						
Portion B23																															
A34750	Portion B11 - Removal of Lateral Support	2	31-May-17	01-Jun-17	31-May-17	30-Jun-17	100%	100%	-24																						
Portion A20																															
A34780	Portion A10 - Removal of Lateral Support	2	15-May-17	16-May-17	15-May-17	23-Jun-17 A	100%	100%	-32																						
Portion A21																															
A34830	Portion A21 - Construct B1 Slab (Deffered Area)	3	11-Apr-17	13-Apr-17	11-Apr-17	30-Jun-17	100%	66.67%	-61																						
Portion B24																															
A34860	Portion B12 - Removal of Lateral Support	2	29-May-17	31-May-17	03-Jun-17	30-Jun-17	100%	50%	-26																						
Portion B25																															
A34890	Portion B13 - Removal of Lateral Support	2	31-May-17	02-Jun-17	31-May-17	14-Jun-17 A	100%	100%	-9																						
A34900	Portion B25 - Columns & Walls Construction (Deffered A)	3	22-May-17	24-May-17	22-May-17	23-Jun-17 A	100%	100%	-24																						
A34910	Portion B25 - Construct B1 Slab (Deffered Area - Stage 1)	3	25-May-17	27-May-17	07-Jun-17	23-Jun-17 A	100%	100%	-21																						
A34920	Portion B13 - Removal of Lateral Support	2	07-Jun-17	08-Jun-17	26-Jun-17	30-Jun-17	100%	50%	-19																						
Roof Slab (Portion A) - Construct B1/F to Roof Lvl Coils, Walls & Roof Slab																															
Portion A23																															
A34950	Portion A23 - Columns & Walls Construction	13	20-Feb-17	06-Mar-17	20-Feb-17	03-Jul-17	100%	90%	-93																						
A34960	Portion A23 - Construct Roof Slab	7	16-May-17	23-May-17	16-May-17	03-Jul-17	100%	80%	-32																						
Portion A24																															
A34970	Portion A24 - Columns & Walls Construction	7	16-May-17	23-May-17	16-May-17	21-Jun-17 A	100%	100%	-24																						
A34980	Portion A24 - Construct Roof Slab	4	26-May-17	31-May-17	22-May-17	23-Jun-17 A	100%	100%	-19																						
Portion A25																															
A35000	Portion A25 - Construct Roof Slab	4	26-May-17	31-May-17	22-May-17	30-Jun-17	100%	80%	-26																						
A34990	Portion A25 - Columns & Walls Construction	7	10-May-17	17-May-17	10-May-17	03-Jul-17	100%	80%	-37																						

Three Months Rolling Programme (3MRP) - Mth 21 - 30 June 2017

Activity ID	Activity Name	CMWP Dur.	CMWP - R0.D5 Start	CMWP - R0.D5 Finish	Actual / Forecast Start	Actual / Forecast Finish	Planned B/L % Complete	Actual % Complete	Finish Variance (+/-d)	Comments / Mitigating Measures	June					July					August					September				October										
											28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	25									
A58650	Delivery of sea water pump	4	04-Jul-17	07-Jul-17	04-Jul-17*	07-Jul-17	0%	0%	0																															
A58660	Install sea water pump	2	08-Jul-17	09-Jul-17	08-Jul-17	09-Jul-17	0%	0%	0																															
A58610	Dismantle the existing unused Equipment	21	20-May-17	10-Jun-17	23-Jun-17	14-Jul-17	100%	35%	-33																															
A58620	Builder's work	8	11-Jun-17	18-Jun-17	14-Jul-17	22-Jul-17	100%	0%	-33																															
A58680	Install Pump motor	32	19-Aug-17	19-Sep-17	19-Aug-17	19-Sep-17	0%	0%	0																															
A58670	Install electrical & Control	62	29-Jul-17	28-Sep-17	29-Jul-17	28-Sep-17	0%	0%	0																															
A58640	Install DI pump	124	19-Jun-17	23-Oct-17	22-Jul-17	26-Nov-17	8.87%	0%	-33																															
Plumbing & Drainage																																								
A58730	Delivery of Sump Pumps	2	20-May-17	21-May-17	30-Jun-17*	02-Jul-17	100%	0%	-40																															
A58710	Dismantle the existing unused Equipment	9	19-Jun-17	27-Jun-17	23-Jun-17	05-Jul-17	100%	50%	-7																															
A58720	Builder's work	7	28-Jun-17	05-Jul-17	05-Jul-17	12-Jul-17	28.57%	0%	-7																															
A58740	Install Sump Pumps	28	06-Jul-17	02-Aug-17	12-Jul-17	09-Aug-17	0%	0%	-7																															
Demolition of CSO Office																																								
A27760	CSO Office relocation	0		14-Aug-17		14-Aug-17*	0%	0%	0																															
A27770	Demolish Existing CSO Office	36	15-Aug-17	25-Sep-17	15-Aug-17	25-Sep-17	0%	0%	0																															
Sewerage																																								
Sewerage Interface with PIW & F2 Contractor																																								
Sewerage at Austin Road West (Portion L08)																																								
A27790	PIW Implement TTMS & Allow Access to Manhole F1.2	0	20-May-17		30-Jun-17*		100%	0%	-34	PIW will not implemen																														
A27800	Excavate Trial Trench for UU within Austin Road West Ar	12	20-May-17	03-Jun-17	30-Jun-17	14-Jul-17	100%	0%	-34																															
A27810	Demolished Existing Planter	10	05-Jun-17	15-Jun-17	15-Jul-17	26-Jul-17	100%	0%	-34																															
A27820	Excavate & Install Lateral Support	10	16-Jun-17	27-Jun-17	27-Jul-17	07-Aug-17	100%	0%	-34																															
A27830	Construct M+ Terminal Manhole F1.3A	6	28-Jun-17	05-Jul-17	08-Aug-17	14-Aug-17	33.33%	0%	-34																															
A27840	Lay down DN375 F1.3B to F1.3A to F1.2	3	06-Jul-17	08-Jul-17	15-Aug-17	17-Aug-17	0%	0%	-34																															
A27850	Pressure Test	3	10-Jul-17	12-Jul-17	18-Aug-17	21-Aug-17	0%	0%	-34																															
A27860	Back fill & Reinstate pavement / Reinstate Planter	9	13-Jul-17	22-Jul-17	22-Aug-17	31-Aug-17	0%	0%	-34																															
A27870	HCC connect DN375 to F1.2	1	24-Jul-17	24-Jul-17	01-Sep-17	01-Sep-17	0%	0%	-34																															
Sewerage adjacent to CLP Station (Portion L19)																																								
A27890	Excavate Trench and install shoring for sewer drain along	14	20-May-17	06-Jun-17	16-May-17	17-May-17 A	100%	100%	17																															
A27910	Lay down DN375 from F1.3C to F1.3B (approx. 39m)	7	19-Jun-17	26-Jun-17	08-Jun-17	15-Jun-17 A	100%	100%	10																															
A27900	Construct manholes F1.3C and F1.3B	10	07-Jun-17	17-Jun-17	08-Jun-17	20-Jun-17 A	100%	100%	-1																															
A27920	Pressure Test	3	27-Jun-17	29-Jun-17	19-Jun-17	20-Jun-17 A	100%	100%	9																															
A27930	Backfill to adjacent ground level	8	30-Jun-17	10-Jul-17	20-Jun-17	20-Jun-17 A	0%	100%	17																															
Sewerage at Portion M01, Gridline A / 3-14																																								
A27940	HCC grant access to Park Contractor for SM100 construct	0	25-Jul-17		02-Sep-17		0%	0%	-34																															
MH F2.1B to MH F2.1A																																								
A27960	Completion of G/F Slab, Wall & Column at Portion A	0		19-May-17		30-Jun-17	100%	0%	-34	Late Access due to the c																														
A27970	Manhole & Trench Excavation for Sewerage Pipe betwee	2	20-May-17	22-May-17	30-Jun-17	03-Jul-17	100%	0%	-34																															
A27990	Lay Sewerage Pipe DN300 between MH F2.1A to F2.1B	4	23-May-17	26-May-17	04-Jul-17	07-Jul-17	100%	0%	-34																															
A27980	Construct Manhole F2.1A	6	23-May-17	29-May-17	04-Jul-17	10-Jul-17	100%	0%	-34																															
A28000	Lay & Connect Sewerage Pipe incoming from M+ to MH	2	27-May-17	29-May-17	08-Jul-17	10-Jul-17	100%	0%	-34																															
A28010	Pressure Test	3	31-May-17	02-Jun-17	11-Jul-17	13-Jul-17	100%	0%	-34																															
A28020	Backfill to ground level	4	03-Jun-17	07-Jun-17	14-Jul-17	18-Jul-17	100%	0%	-34																															
MH F2.1C to MH F2.1B																																								
A28030	Manhole & Trench Excavation for Sewerage Pipe betwee	2	31-May-17	01-Jun-17	11-Jul-17	12-Jul-17	100%	0%	-34	Late access (early July 2																														
A28050	Lay Sewerage Pipe DN300 between MH F2.1C to F2.1B	7	02-Jun-17	09-Jun-17	13-Jul-17	20-Jul-17	100%	0%	-34																															
A28040	Construct Manhole F2.1B & F2.1C	16	02-Jun-17	20-Jun-17	13-Jul-17	31-Jul-17	100%	0%	-34																															
A28060	Pressure test	3	21-Jun-17	23-Jun-17	01-Aug-17	03-Aug-17	100%	0%	-34																															
A28070	Backfill to ground level	5	24-Jun-17	29-Jun-17	04-Aug-17	09-Aug-17	100%	0%	-34																															
MH F2.1D to MH F2.1C																																								
A28080	Completion of G/F Slab, Wall & Column at Portion E	0		19-May-17		30-Jun-17	100%	0%	-34																															
A28090	Manhole & Trench Excavation for Sewerage Pipe betwee	3	21-Jun-17	23-Jun-17	01-Aug-17	03-Aug-17	100%	0%	-34																															
A28110	Lay Sewerage Pipe DN375 between MH F2.1D to F2.1C	4	24-Jun-17	28-Jun-17	04-Aug-17	08-Aug-17	100%	0%	-34																															
A28120	Lay & Connect Sewerage Pipe incoming from M+ to MH	2	29-Jun-17	30-Jun-17	09-Aug-17	10-Aug-17	50%	0%	-34																															
A28100	Construct Manhole F2.1D	10	24-Jun-17	06-Jul-17	04-Aug-17	15-Aug-17	50%	0%	-34																															
A28130	Pressure Test	3	07-Jul-17	10-Jul-17	16-Aug-17	18-Aug-17	0%	0%	-34																															
A28140	Backfill to ground level	3	11-Jul-17	13-Jul-17	19-Aug-17	22-Aug-17	0%	0%	-34																															
MH F2.1E to MH F2.1D																																								



Lyric Theatre Complex

Activity ID	Activity Name	Durn. (Days)	Programme Rev A Start	Programme Rev A Finish	Current / Actual Start	Current / Actual Finish	Physical % Complete	Finish Variance	Float (Days)	2016												2017												2018										
										Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb									
										1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26									
F2 Foundation Works for Lyric Theatre Complex																																												
Summary for Major Works																																												
Pre-bored H-Pile																																												
Pre-bored H-Pile Construction																																												
LT.0087	Trial Pile and Obtain BD's Acknowledgement	18	22-Feb-16	12-Mar-16	08-Mar-16 A	09-Mar-16 A	100%	4																																				
LT.0088	Predrilling, Excluding Portions L02 and L03; 56 nos.	71	20-Feb-16	20-May-16	01-Mar-16 A	13-Jul-16 A	100%	-43																																				
LT.0089	Pre-bored H-Pile Construction; Rig 1, 104 nos	243	01-Apr-16	21-Jan-17	17-Mar-16 A	21-Jan-17 A	100%	1																																				
LT.2225	Pre-bored H-Pile Construction; Rig 2, 99 nos	255	01-Apr-16	08-Feb-17	30-Mar-16 A	20-Feb-17 A	100%	-9																																				
LT.2226	Pre-bored H-Pile Construction; Rig 3, 25 nos	25	01-Apr-16	30-Apr-16	30-Apr-16 A	05-Jul-16 A	100%	-51																																				
LT.3315	Pre-bored H-Pile Construction; Rig 3, 8 nos	24			23-Sep-16 A	22-Oct-16 A	100%																																					
LT.3340	Pre-bored H-Pile Construction; Rig 4, 6 nos	13			27-Sep-16 A	14-Oct-16 A	100%																																					
LT.3370	Pre-bored H-Pile Construction; Rig 3, 19 nos	40			11-Nov-16 A	30-Dec-16 A	100%																																					
Contract Administrator's Instruction No. 8																																												
LT.3010	Predrilling in Portions L02 and L03; 14 nos.	30	14-Oct-16	17-Nov-16	08-Aug-16 A	01-Sep-16 A	100%	64																																				
LT.3015	Pre-bored H-Pile Construction; Rig 1, 21 nos	65	14-Feb-17	06-May-17	20-Jan-17 A	01-Mar-17 A	100%	52																																				
LT.3020	Pre-bored H-Pile Construction; Rig 2, 16 nos	67	14-Feb-17	09-May-17	24-Jan-17 A	02-Mar-17 A	100%	53																																				
LT.3390	Pre-bored H-Pile Construction; Rig 4, 16 nos	25			17-Nov-16 A	16-Dec-16 A	100%																																					
LT.3750	Pre-bored H-Pile Construction; Rig 3, 10 nos	25			28-Dec-16 A	21-Jan-17 A	100%																																					
BA14 and Testing																																												
LT.0094	Submission of BA14	6	06-Jun-17	12-Jun-17	24-Mar-17 A	07-Apr-17 A	100%	67																																				
LT.0095	CA's Selection of Proof Drilling Locations	14	09-May-17	23-May-17	20-Feb-17 A	03-Mar-17 A	100%	82																																				
LT.0096	Proof Drilling	14	23-May-17	06-Jun-17	04-Mar-17 A	16-Mar-17 A	100%	83																																				
LT.0097	BD's Selection of Test Piles	28	12-Jun-17	10-Jul-17	08-Apr-17 A	21-Apr-17 A	100%	81																																				
LT.0098	Load Testing and Submit Reports	32	10-Jul-17	11-Aug-17	10-May-17 A	10-Jul-17	83%	32	33																																			
LT.0099	BD's Acknowledgement	45	11-Aug-17	25-Sep-17	11-Jul-17	24-Aug-17	0%	32	50																																			
Bored Pile																																												
Bored Pile Construction																																												
LT.0102	Predrilling, Excluding Portions L02 and L03; 145 nos.	125	20-Feb-16	25-Jul-16	02-Mar-16 A	02-Sep-16 A	100%	-33																																				
LT.0103	Bored Pile Construction; RCD Rig 1, 32 nos.	244	07-Apr-16	27-Jan-17	12-Mar-16 A	08-May-17 A	100%	-76																																				
LT.1895	Bored Pile Construction; RCD Rig 2, 29 nos.	268	18-Mar-16	13-Feb-17	17-Mar-16 A	01-Apr-17 A	100%	-40																																				
LT.1905	Bored Pile Construction; RCD Rig 3, 25 nos.	243	14-Apr-16	06-Feb-17	21-Mar-16 A	28-Mar-17 A	100%	-43																																				
LT.1915	Bored Pile Construction; RCD Rig 4, 26 nos. (Including 1 no. under CAI 017)	245	29-Mar-16	20-Jan-17	23-Mar-16 A	29-Apr-17 A	100%	-77																																				
LT.1925	Bored Pile Construction; RCD Rig 5, 15 nos.	200	28-Apr-16	24-Dec-16	26-Apr-16 A	10-Dec-16 A	100%	13																																				
LT.1935	Bored Pile Construction; RCD Rig 6, 12 nos. (Including 4 nos. under CAI 017)	175	12-Jul-16	10-Feb-17	13-Jul-16 A	10-Apr-17 A	100%	-48																																				
LT.1945	Bored Pile Construction; RCD Rig 7, 12 nos. (Including 1 no. under CAI 023)	146	14-Jul-16	06-Jan-17	22-Jul-16 A	04-Mar-17 A	100%	-45																																				
LT.2215	Sonic Logging and Interface Coring Test; Excluding Portions L02 and L03	145	10-Sep-16	08-Mar-17	06-Oct-16 A	26-May-17 A	100%	-61																																				
LT.3260	Completion of Bored Pile Construction in Area 6	0				08-May-17 A	100%																																					
Contract Administrator's Instruction No. 8																																												
LT.2891	Predrilling in Portions L02 and L03; 11 nos.	24	13-Sep-16	13-Oct-16	03-Aug-16 A	24-Aug-16 A	100%	41																																				
LT.2895	Bored Pile Construction; RCD Rig 4, 4 nos.	51	10-Dec-16	14-Feb-17	24-Aug-16 A	24-Oct-16 A	100%	92																																				
LT.2905	Bored Pile Construction; RCD Rig 1, 3 nos.	43	20-Dec-16	14-Feb-17	27-Aug-16 A	04-Oct-16 A	100%	108																																				
LT.2915	Bored Pile Construction; RCD Rig 4, 2 nos.	30	06-May-17	10-Jun-17	21-Sep-16 A	12-Nov-16 A	100%	168																																				
LT.2925	Bored Pile Construction; RCD Rig 1, 2 nos.	29	09-May-17	12-Jun-17	11-Oct-16 A	10-Nov-16 A	100%	171																																				
LT.2935	Sonic Logging and Interface Coring Test; Portions L02 and L03	12	13-Jun-17	26-Jun-17	17-Jan-17 A	23-Mar-17 A	100%	75																																				
BA14 and Testing																																												
LT.0108	Submission of BA14	3	27-Jun-17	29-Jun-17	29-May-17 A	02-Jun-17 A	100%	24																																				
LT.0109	BD's Selection of Test Piles	28	30-Jun-17	27-Jul-17	03-Jun-17 A	03-Jul-17	90%	24	25																																			
LT.0110	Concrete Coring Test and Submit Reports	13	27-Jul-17	11-Aug-17	03-Jul-17	18-Jul-17	0%	21	22																																			
LT.0111	BD's Acknowledgement	45	12-Aug-17	25-Sep-17	21-Jul-17	03-Sep-17	0%	22	40																																			

- Secondary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

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



Date	Revision	Checked	Approved
30-Jun-17	For Information	R.L.	K.K.

C. Action and Limit Levels for Construction Phase

Air Quality

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

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

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

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

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

Noise

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

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

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

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

Air Quality

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

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

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

Event**Action**

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

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

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

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

Landscape and Visual Impact

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

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

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

E. Monitoring Schedule

JUNE 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	2	3
4	5	6	7 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	8	9	10
11	12	13 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	14	15	16	17
18	19 AM1, AM2A - 24hrTSP, 1hr TSP x3 NM1A - Noise Impact Monitoring	20	21	22	23 AM1, AM2A - 24hrTSP, 1hr TSP x3	24
25	26	27	28	29	30 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) *The impact monitoring originally scheduled on 29 Jun was rescheduled to 30 Jun due to site closure on 29 Jun.				

JULY 2017

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

F. Calibration Certifications

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM1(ICC)
 Calibrated by : K.T.Ho
 Date : 12/04/2017

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 20 Mar 2017
 Slope (m) : 2.08464
 Intercept (b) : -0.03684
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1014
 Ta(K) : 292

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.0	3.196	1.551	57	57.61
2 13 holes	8.2	2.894	1.406	50	50.54
3 10 holes	6.0	2.476	1.205	42	42.45
4 7 holes	4.2	2.071	1.011	34	34.36
5 5 holes	2.4	1.566	0.769	22	22.24

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): 44.426 Intercept(b): -11.359 Correlation Coefficient(r): 0.9991

Checked by: 
 Magnum Fan

Date: 18/04/2017

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM1 (ICC)
 Calibrated by : K.T.Ho
 Date : 12/06/2017

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 20 Mar 2017
 Slope (m) : 2.08464
 Intercept (b) : -0.03684
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1007
 Ta(K) : 303

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	9.8	3.095	1.503	54	53.39
2 13 holes	7.8	2.761	1.342	48	47.46
3 10 holes	5.6	2.340	1.140	38	37.57
4 7 holes	3.8	1.927	0.942	30	29.66
5 5 holes	2.0	1.398	0.688	20	19.78

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): 41.883 Intercept(b): -9.467 Correlation Coefficient(r): 0.9991

Checked by: 
 Magnum Fan

Date: 16/06/2017

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM2A (Harbourside)
 Calibrated by : K.T.Ho
 Date : 12/04/2017

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 20 Mar 2017
 Slope (m) : 2.08464
 Intercept (b) : -0.03684
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1014
 Ta(K) : 292

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.8	3.472	1.683	54	54.58
2 13 holes	8.8	2.998	1.456	46	46.49
3 10 holes	6.8	2.636	1.282	39	39.42
4 7 holes	4.2	2.071	1.011	30	30.32
5 5 holes	2.2	1.499	0.737	21	21.23

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): 35.358 Intercept(b): -5.218 Correlation Coefficient(r): 0.9994

Checked by: 
 Magnum Fan

Date: 18/04/2017

High-Volume TSP Sampler
5-Point Calibration Record

Location : AM2A (Harbourside)
 Calibrated by : K.T.Ho
 Date : 12/06/2017

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 20 Mar 2017
 Slope (m) : 2.08464
 Intercept (b) : -0.03684
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1007
 Ta(K) : 303

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.0	3.425	1.661	58	57.35
2 13 holes	9.0	2.966	1.441	50	49.44
3 10 holes	7.0	2.616	1.273	42	41.53
4 7 holes	4.4	2.074	1.013	32	31.64
5 5 holes	2.4	1.532	0.752	22	21.75

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): 39.568 Intercept(b): -8.240 Correlation Coefficient(r): 0.9994

Checked by: 
 Magnum Fan

Date: 16/06/2017



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 20, 2017 Rootsmeter S/N 0438320 Ta (K) - 293
 Operator Tisch Orifice I.D. - 2454 Pa (mm) - 759.46

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.4390	3.2	2.00
2	NA	NA	1.00	1.0240	6.4	4.00
3	NA	NA	1.00	0.9170	7.9	5.00
4	NA	NA	1.00	0.8730	8.8	5.50
5	NA	NA	1.00	0.7200	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0120	0.7033	1.4257	0.9958	0.6920	0.8784
1.0078	0.9842	2.0163	0.9916	0.9683	1.2423
1.0057	1.0967	2.2543	0.9895	1.0791	1.3889
1.0045	1.1507	2.3643	0.9884	1.1322	1.4567
0.9992	1.3878	2.8514	0.9831	1.3654	1.7568
Qstd slope (m) = 2.08464			Qa slope (m) = 1.30537		
intercept (b) = -0.03684			intercept (b) = -0.02270		
coefficient (r) = 0.99994			coefficient (r) = 0.99994		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

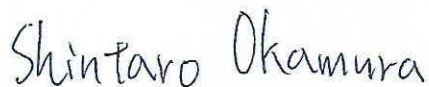
CALIBRATION CERTIFICATE

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 ³
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
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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

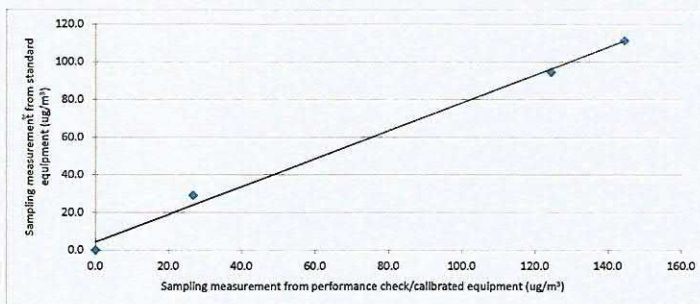
EQUIPMENT PERFORMANCE CHECK / CALIBRATION RESULTS:

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 ³ (Standard equipment) (Y - Axis)	Total Count ² (Performance Check / Calibrated equipment)	Concentration in Count/Minute ³ (Performance Check / Calibrated equipment) (X - Axis)
Zero Check ¹	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 ³
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

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.



SIBATA SCIENTIFIC TECHNOLOGY LTD.

DATE 19/ December /2016

APPROVE BY 	VERIFIED BY 	ISSUED BY 
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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

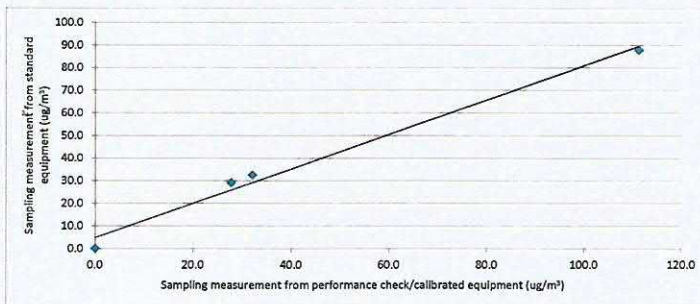
EQUIPMENT PERFORMANCE CHECK / CALIBRATION RESULTS:

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 ³ (Standard equipment) (Y - Axis)	Total Count ² (Performance Check / Calibrated equipment)	Concentration in Count/Minute ³ (Performance Check / Calibrated equipment) (X - Axis)
Zero Check ¹	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 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

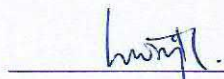
DATE OF TEST / 測試日期 : 29 July 2016

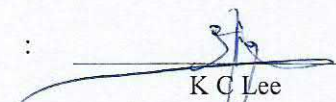
TEST RESULTS / 測試結果

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

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

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

Tested By : 
測試 : H T Wong
Technical Officer

Certified By : 
核證 : K C Lee
Project Engineer

Date of Issue : 1 August 2016
簽發日期

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

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

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

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

Certificate of Calibration

校正證書

Certificate No. : C164166
證書編號

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

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.

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Certificate of Calibration

校正證書

Certificate No. : C164166

證書編號

6.2.2 Tone Burst Signal (2 kHz)

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

6.3 Frequency Weighting

6.3.1 A-Weighting

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

6.3.2 C-Weighting

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

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

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Certificate of Calibration

校正證書

Certificate No. : C164166

證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
50 - 110	LAeq	A	10 sec.	4	1	1/10	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

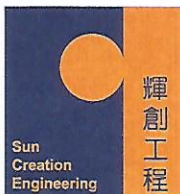
- Uncertainties of Applied Value :

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.



Certificate of Calibration 校正證書

Certificate No. : C171447
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-0633) Date of Receipt / 收件日期 : 16 March 2017

Description / 儀器名稱 : Sound Level Calibrator
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10486660
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 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

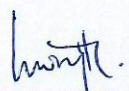
DATE OF TEST / 測試日期 : 17 March 2017


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 : 23 March 2017
簽發日期

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

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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. : C171447

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 :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C163709
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	93.6	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.987	1 kHz ± 2 %	± 1

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

Note :

Only the original copy or the laboratory's certified true copy is valid.

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.

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

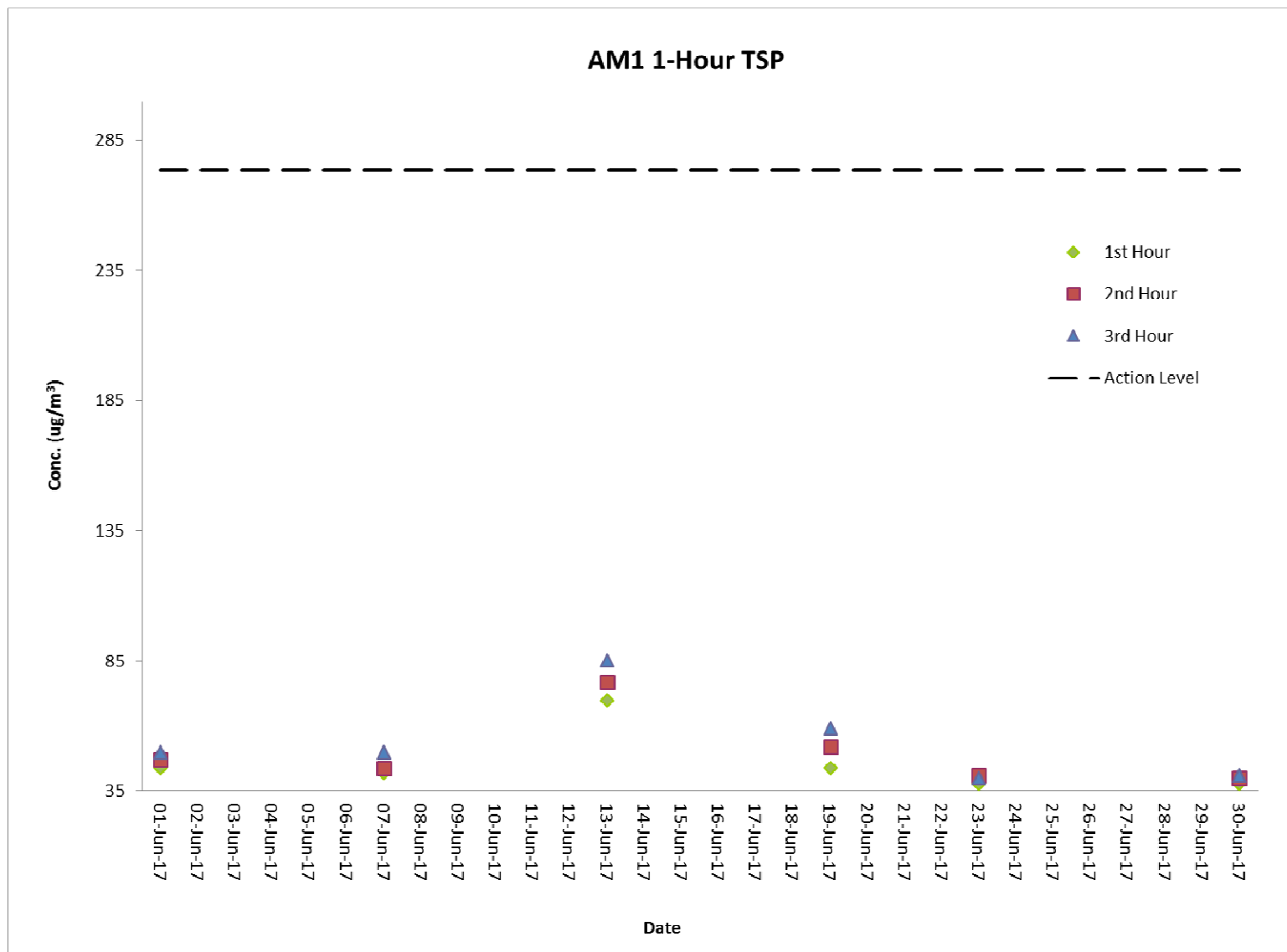
Website/網址: www.suncreation.com

G. Graphical Plots of the Monitoring Results

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

Date	Weather Condition	Time	Conc. ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1 st Hour	2 nd Hour	3 rd Hour		
01-Jun-17	Fine	10:48 - 16:00	44	47	50	273.7	500
07-Jun-17	Sunny	10:40 - 16:00	42	44	50	273.7	500
13-Jun-17	Cloudy	14:00 - 17:00	70	77	85	273.7	500
19-Jun-17	Cloudy	10:40 - 16:00	44	52	59	273.7	500
23-Jun-17	Fine	8:02 - 11:02	38	41	40	273.7	500
30-Jun-17	Fine	8:00 - 11:00	38	40	41	273.7	500

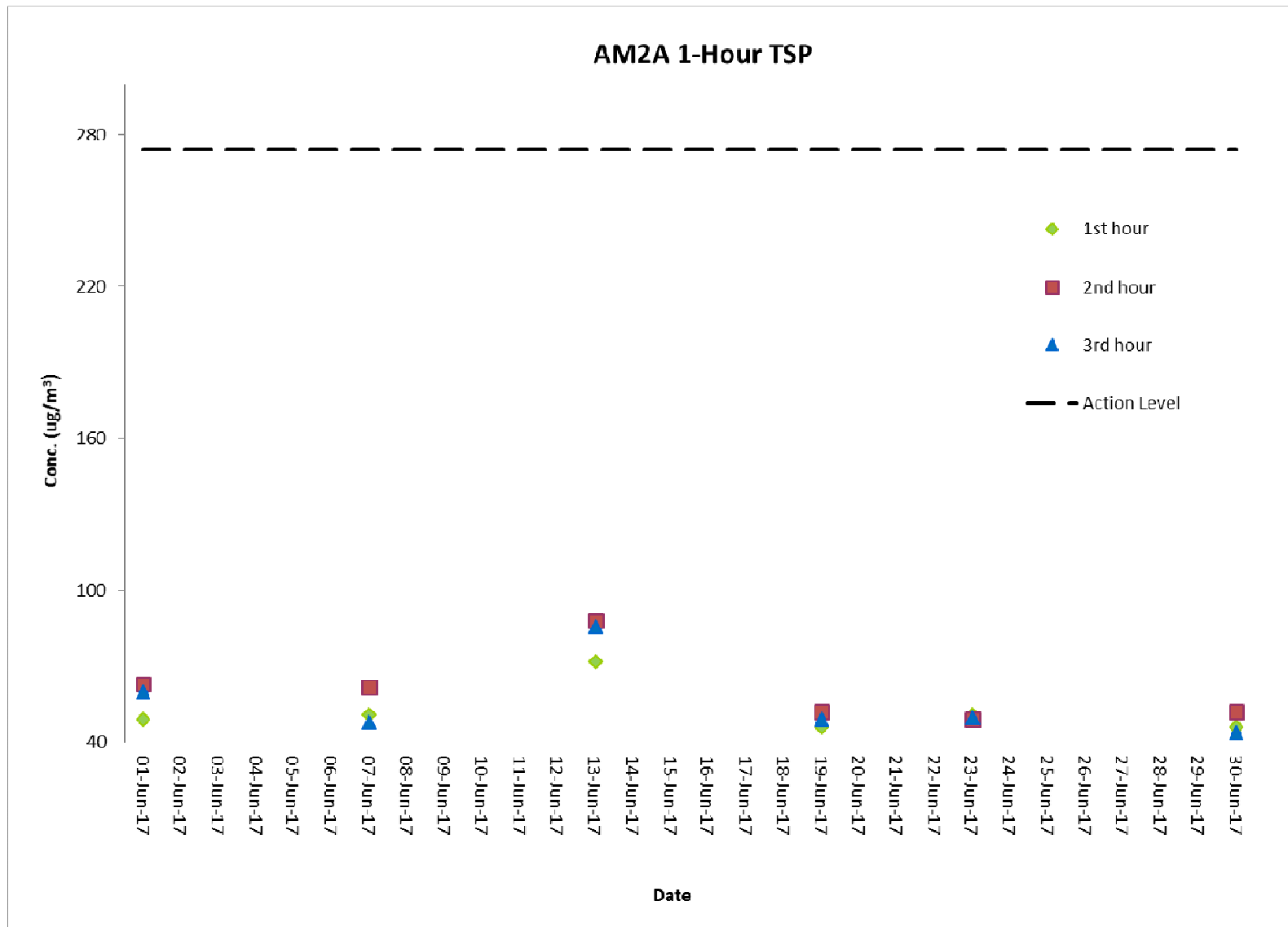
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



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

Date	Weather Condition	Time	Conc. ($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
			1 st Hour	2 nd Hour	3 rd Hour		
01-Jun-17	Fine	11:12 - 16:10	49	63	60	274.2	500
07-Jun-17	Sunny	10:52 - 16:10	51	62	48	274.2	500
13-Jun-17	Cloudy	14:12 - 17:12	72	88	86	274.2	500
19-Jun-17	Cloudy	10:52 - 16:10	46	52	49	274.2	500
23-Jun-17	Fine	8:14 - 11:14	51	49	50	274.2	500
30-Jun-17	Fine	8:12 - 11:12	46	52	44	274.2	500

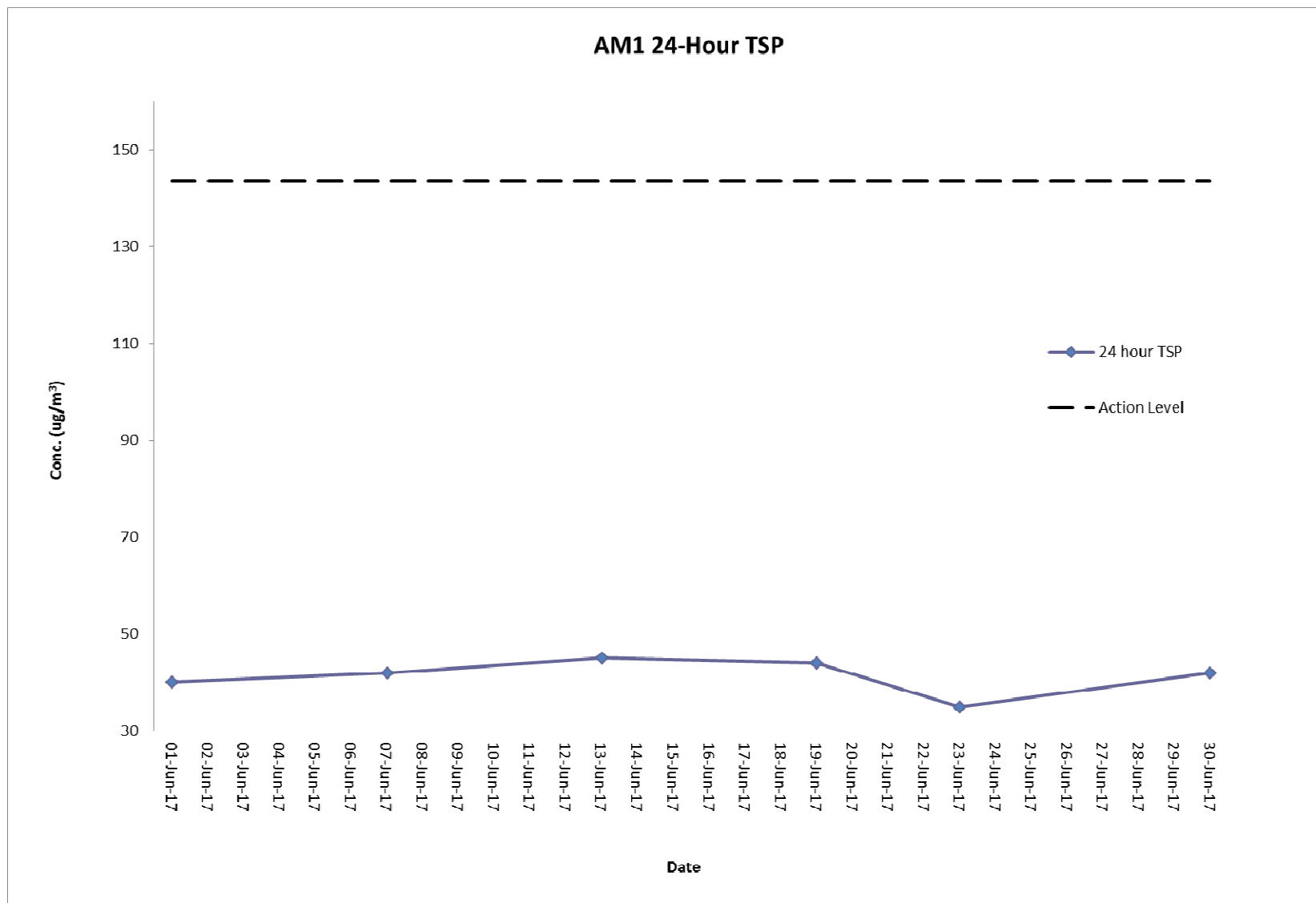
Graphical Presentation of Air Quality Monitoring Result at Station AM2A (1-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			Conc. (µg/m ³)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
01-Jun-17	11:00	02-Jun-17	11:00	2.6572	2.7284	21120.38	21144.38	24	1.25	1.25	1.25	40	Fine	143.6	260
07-Jun-17	10:38	08-Jun-17	10:38	2.6535	2.73	21144.38	21168.38	24	1.25	1.25	1.25	42	Sunny	143.6	260
13-Jun-17	14:02	14-Jun-17	14:02	2.62	2.7	21168.38	21192.38	24	1.23	1.23	1.23	45	Cloudy	143.6	260
19-Jun-17	10:42	20-Jun-17	10:42	2.633	2.711	21192.38	21216.38	24	1.23	1.23	1.23	44	Cloudy	143.6	260
23-Jun-17	08:00	24-Jun-17	08:00	2.6381	2.6997	21216.38	21240.38	24	1.23	1.23	1.23	35	Fine	143.6	260
30-Jun-17	08:02	01-Jul-17	08:02	2.6356	2.71	21240.38	21264.38	24	1.23	1.23	1.23	42	Fine	143.6	260

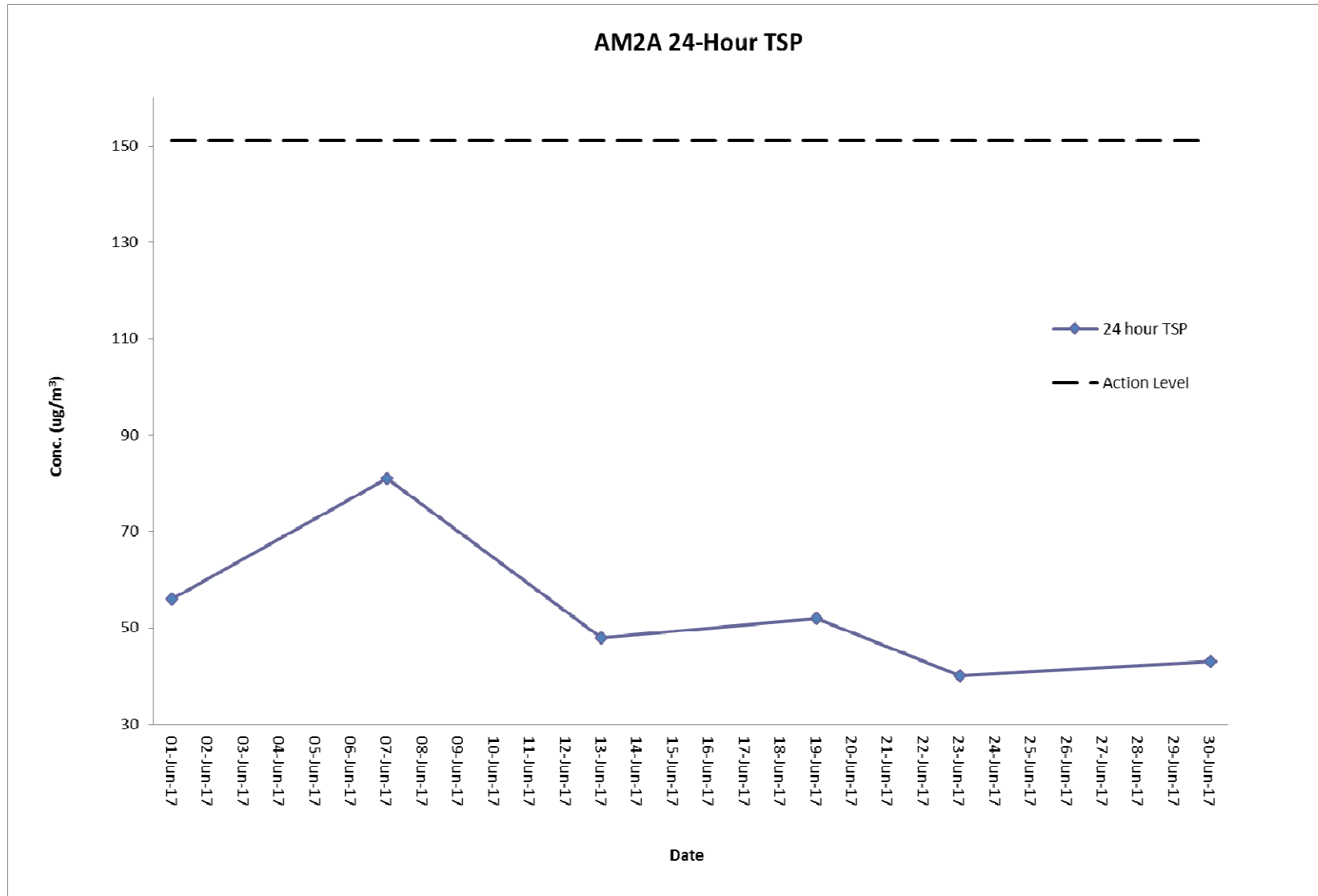
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			Conc. (µg/m ³)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
01-Jun-17	11:10	02-Jun-17	11:10	2.6596	2.7628	16775.59	16799.59	24	1.28	1.28	1.28	56	Fine	151.1	260
07-Jun-17	10:50	08-Jun-17	10:50	2.6536	2.8022	16799.59	16823.59	24	1.28	1.28	1.28	81	Sunny	151.1	260
13-Jun-17	14:14	14-Jun-17	14:14	2.6312	2.7191	16823.59	16847.59	24	1.27	1.27	1.27	48	Cloudy	151.1	260
19-Jun-17	10:54	20-Jun-17	10:54	2.6609	2.7552	16847.59	16871.59	24	1.27	1.27	1.27	52	Cloudy	151.1	260
23-Jun-17	08:12	24-Jun-17	08:12	2.6265	2.7001	16871.59	16895.59	24	1.27	1.27	1.27	40	Fine	151.1	260
30-Jun-17	08:14	01-Jul-17	08:14	2.6221	2.7009	16895.59	16919.59	24	1.27	1.27	1.27	43	Fine	151.1	260

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



Noise Monitoring Result at Station NM1A

Date	Time	Measured L ₁₀ dB(A)	Measured L ₉₀ dB(A)	L _{eq} (30 min.) dB(A)
01-Jun-17	14:00	67.7	63.1	69
01-Jun-17	14:05	68.8	64.1	
01-Jun-17	14:10	67.7	63.8	
01-Jun-17	14:15	66.0	62.7	
01-Jun-17	14:20	66.7	62.9	
01-Jun-17	14:25	67.9	63.4	
07-Jun-17	14:00	68.0	63.7	69
07-Jun-17	14:05	67.1	62.7	
07-Jun-17	14:10	68.8	64.0	
07-Jun-17	14:15	68.0	63.5	
07-Jun-17	14:20	67.7	63.4	
07-Jun-17	14:25	69.2	64.1	
13-Jun-17	16:25	67.0	63.1	69
13-Jun-17	16:30	68.4	64.1	
13-Jun-17	16:35	67.0	63.9	
13-Jun-17	16:40	66.7	62.7	
13-Jun-17	16:45	68.0	63.9	
13-Jun-17	16:50	67.4	62.9	
19-Jun-17	14:00	68.0	64.1	69
19-Jun-17	14:05	67.1	63.2	
19-Jun-17	14:10	66.8	62.1	
19-Jun-17	14:15	66.7	61.7	
19-Jun-17	14:20	68.9	64.9	
19-Jun-17	14:25	68.0	63.2	
30-Jun-17	10:30	67.9	63.1	70
30-Jun-17	10:35	68.2	64.1	
30-Jun-17	10:40	67.9	63.9	
30-Jun-17	10:45	69.4	64.7	
30-Jun-17	10:50	68.8	64.4	
30-Jun-17	10:55	69.0	64.8	

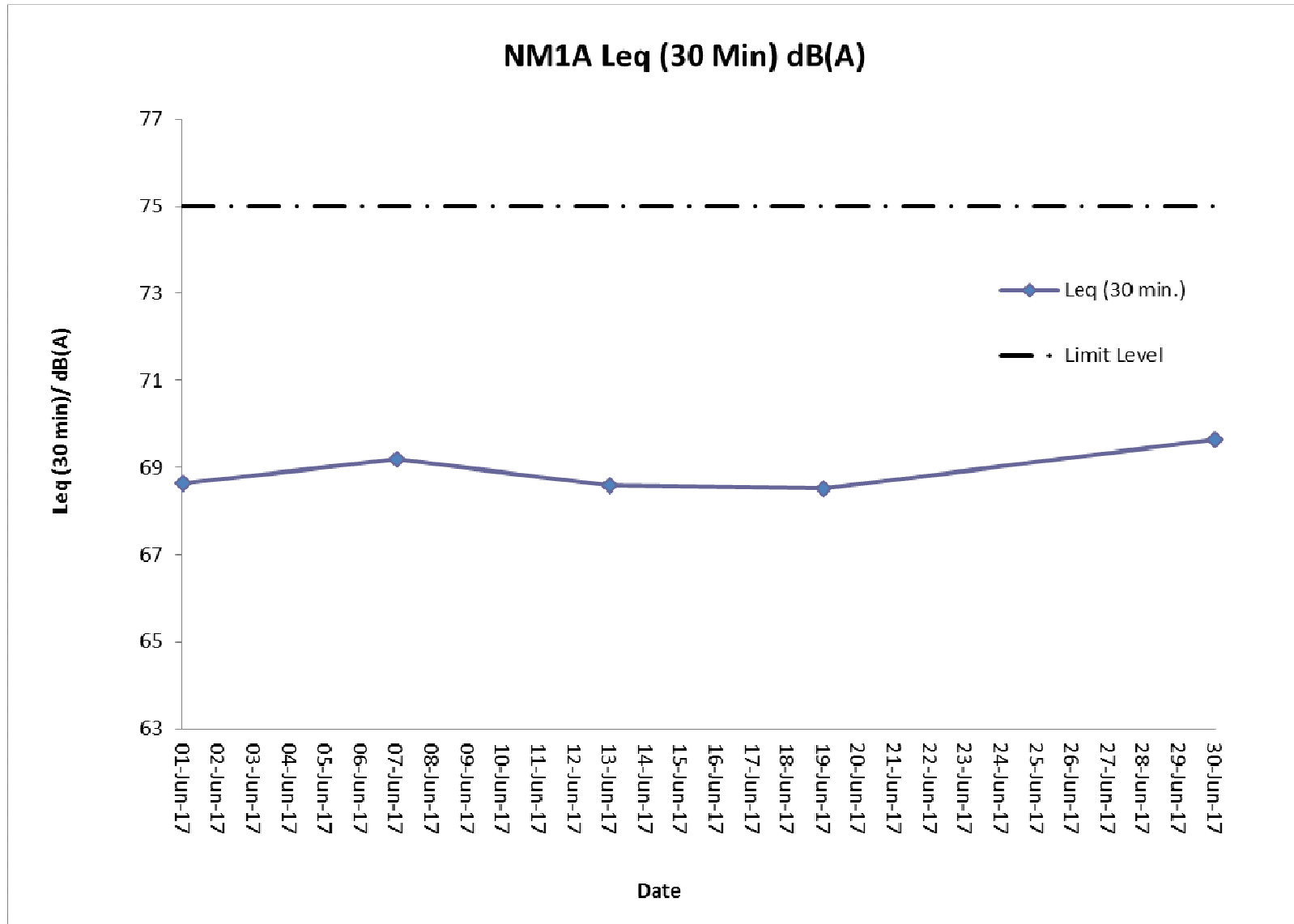
Remarks:

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



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

Graphical Presentation Noise Monitoring Result at Station NM1A



H. Meteorological Data Extracted from Hong Kong Observatory

EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG, JUNE 2017 (Table 1)

Date June	Mean Pressure (hPa)	Air Temperature			Mean Dew Point Temperature (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)				
1	1003.2	30.6	29.1	27.8	26.0	83	88	Trace
2	1002.6	30.6	29.4	28.6	26.6	85	88	Trace
3	1002.7	32.5	30.0	28.5	26.6	83	84	-
4	1003.6	31.2	30.0	29.3	26.5	81	88	Trace
5	1006.2	33.5	30.3	28.8	26.3	80	67	Trace
6	1009.2	33.8	30.4	28.5	26.0	78	59	Trace
7	1010.0	34.0	30.0	27.2	26.0	80	50	4.3
8	1009.9	32.5	29.8	28.3	25.9	80	63	-
9	1009.2	31.9	29.5	28.1	25.8	81	81	1.1
10	1008.3	33.8	29.9	28.0	25.7	79	77	Trace
11	1007.0	34.1	29.8	28.1	25.6	78	47	Trace
12	1001.9	30.0	27.6	25.3	25.2	87	80	37.7
13	1006.2	28.9	26.4	24.3	25.1	93	91	219.4
14	1008.6	29.5	28.3	25.5	25.5	85	88	15.6
15	1007.6	31.1	29.2	26.8	25.7	81	88	14.5
16	1005.1	29.6	29.0	27.8	26.1	85	88	13.5
17	1003.7	28.4	25.5	24.4	24.8	96	93	138.0
18	1004.7	27.3	26.2	24.7	24.6	91	91	24.2
19	1005.3	28.3	26.2	25.3	24.8	92	86	32.6
20	1005.1	28.2	26.5	25.2	24.9	91	88	24.8
21	1005.3	29.2	27.4	25.2	25.5	90	89	95.9
22	1007.8	32.4	29.3	28.0	25.7	81	80	Trace
23	1007.7	31.6	28.9	27.5	25.8	84	80	10.5
24	1006.3	30.8	28.5	26.4	25.8	85	79	18.3
25	1006.9	31.5	29.2	26.8	25.1	79	81	4.2
26	1008.4	32.0	29.8	28.6	25.4	78	85	0.1
27	1009.5	31.5	29.5	28.6	25.5	79	83	1.3
28	1010.2	32.3	29.7	28.2	25.2	77	58	-
29	1009.7	32.8	29.6	27.9	25.4	78	62	-
30	1007.8	33.7	29.9	27.6	24.8	75	64	-
Mean/Total	1006.7	31.3	28.8	27.2	25.6	83	78	656.0
Normal*	1006.1	30.2	27.9	26.2	24.6	82	77	456.1
Station	Hong Kong Observatory							

EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG, JUNE 2017 (Table 2)

Date June	Number of hours of Reduced Visibility* (hours)	Total Bright Sunshine (hours)	Daily Global Solar Radiation (MJ/m ²)	Total Evaporation (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1	0	1.3	11.85	2.7	240	37.8
2	0	0.5	8.58	2.0	240	36.1
3	0	6.2	21.85	4.8	240	30.5
4	0	1.5	9.44	2.4	210	22.9
5	0	5.2	18.70	3.8	160	21.3
6	0	6.5	20.57	4.9	150	19.4
7	0	10.3	26.98	5.3	150	14.6
8	0	8.3	22.67	4.0	120	15.4
9	0	7.8	22.51	4.5	120	20.6
10	0	8.7	21.66	4.3	150	16.1
11	0	8.7	21.00	5.7	130	10.8
12	0	4.4	17.54	1.1	080	53.5
13	0	-	2.12	1.7	240	32.0
14	0	-	6.78	1.3	210	19.8
15	0	3.0	14.42	3.4	230	31.3
16	0	-	4.84	2.7	230	40.3
17	0	-	2.94	2.1	230	19.8
18	0	-	6.11	1.8	250	16.2
19	0	0.3	7.08	1.8	260	11.7
20	0	0.2	4.84	1.8	240	13.9
21	0	0.4	4.86	1.0	210	27.6
22	0	5.6	18.16	3.3	210	22.4
23	0	5.2	15.87	4.2	180	19.5
24	0	6.1	17.32	3.6	190	23.0
25	0	8.4	22.74	4.7	240	25.6
26	0	6.3	21.40	4.3	230	28.1
27	0	5.1	16.66	3.7	230	24.8
28	0	10.7	26.97	5.1	240	18.3
29	0	8.8	22.86	4.5	230	9.5
30	0	9.4	23.34	4.9	150	7.9
Mean/Total	0	138.9	15.42	101.4	240	23.0
Normal*	17.6 [§]	146.1	14.19	117.1	220	22.9
Station	Hong Kong International Airport	King's Park		Waglan Island [^]		

The minimum pressure recorded at the Hong Kong Observatory was 995.5 hectopascals at 2008 HKT on 12 June.

The maximum air temperature recorded at the Hong Kong Observatory was 34.1 degrees C at 1345 HKT on 11 June.

The minimum air temperature recorded at the Hong Kong Observatory was 24.3 degrees C at 0921 HKT on 13 June.

The maximum gust peak speed recorded at Waglan Island was 113 kilometres per hour from 010 degrees at 1953 HKT on 12 June.

The maximum 1-minute mean rainfall rate recorded at the Hong Kong Observatory was 164 millimetres per hour at 0848 HKT on 13 June.

Reduced visibility refers to visibility below 8 kilometres when there is no fog, mist or precipitation.

- The visibility readings at the Hong Kong International Airport are based on hourly observations by professional meteorological observers in 2004 and before, and average readings over the 10-minute period before the clock hour of the visibility meter near the middle of the south runway from 2005 onwards. The change of the data source in 2005 is an improvement of the visibility assessment using instrumented observations following the international trend.

- Before 10 October 2007, the number of hours of reduced visibility at the Hong Kong International Airport in 2005 and thereafter displayed in this web page was based on hourly visibility observations by professional meteorological observers. Since 10 October 2007, the data have been revised using the average visibility readings over the 10-minute period before the clock hour, as recorded by the visibility meter near the middle of the south runway.

^ In case the data are not available from Waglan Island, observations of Cheung Chau or other nearby weather stations will be incorporated in computing the Prevailing Wind Direction and Mean Wind Speed.

* 1981-2010 Climatological Normal, unless otherwise specified

§ 1997-2016 Mean value

Remarks:

Graphical presentations for wind speed and wind direction from the nearest HKO's weather station were not available.

I. Waste Flow table

M+ Museum

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2015													
Nov	46607.4	0.0	0.0	8240.0	38367.4	0.0	0.0	76.2	0.0	0.0	0.0	0.0	67.6
Dec	29652.9	0.0	0.0	29621.4	31.5	0.0	0.0	26.3	0.0	0.0	0.0	1.0	66.0
Sub-total (2015)	76260.3	0.0	0.0	37861.4	38398.9	0.0	0.0	102.5	0.0	0.0	0.0	1.0	133.6
2016													
Jan	21077.4	0.0	6352.0	14576.0	149.4	0.0	0.0	18.8	0.0	0.0	0.0	0.0	23.2
Feb	7626.2	0.0	3424.0	4048.0	154.2	0.0	0.0	59.8	0.0	0.0	0.0	0.0	20.5
Mar	10442.5	0.0	1600.0	7888.0	954.5	0.0	0.0	29.7	0.0	0.0	0.0	0.0	46.3
Apr	30413.2	0.0	6352.0	23408.0	653.2	0.0	0.0	25.8	0.1	0.0	27.8	0.0	34.5
May	24083.5	0.0	112.0	23216.0	755.5	0.0	0.0	61.5	0.4	0.0	33.6	0.0	62.3
Jun	7880.1	0.0	4736.0	2384.0	760.1	0.0	0.0	106.6	0.1	0.0	14.6	0.0	52.8
Jul	5893.1	0.0	2656.0	2240.0	997.1	0.0	0.0	77.6	0.0	0.0	33.6	0.0	83.1
Aug	13709.6	0.0	0.0	12432.0	1277.6	0.0	0.0	111.3	0.3	0.0	38.5	0.0	104.9
Sep	6702.0	0.0	0.0	5648.0	1000.1	53.9	0.0	104.2	0.0	0.0	45.5	0.2	107.9
Oct	2103.6	0.0	0.0	496.0	1595.4	12.2	0.0	83.0	0.4	0.0	73.5	0.0	108.2
Nov	3302.7	0.0	0.0	2384.0	855.5	63.2	0.0	88.4	0.6	0.0	63.0	0.0	129.1
Dec	899.8	0.0	0.0	736.0	126.8	37.0	0.0	48.3	0.6	0.0	70.0	0.0	89.0
Sub-total (2016)	134133.5	0.0	25232.0	99456.0	9279.3	166.3	0.0	814.9	2.5	0.0	400.1	0.2	861.8
2017													
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	1881.3	0.0	0.0	1280.0	491.6	109.8	0.0	62.8	0.4	0.0	98.0	0.0	148.5
Apr	710.9	0.0	0.0	160.0	393.4	157.5	0.0	87.5	0.7	0.0	175.0	0.0	102.5
May	1153.7	0.0	0.0	528.0	452.0	173.7	0.0	71.1	0.0	0.0	280.0	0.0	139.0
June	650.0	0.0	0.0	0.0	451.6	198.4	0.0	58.2*	1.4	0.0	350.0	0.0	98.7
Sub-total (2017)	5998.8	0.0	0.0	3168.0	2152.1	678.7	0.0	429.6	4.1	0.0	1057.0	0.0	649.7
Total	216392.6	0.0	25232.0	140485.4	49830.2	845.0	0.0	1347.0	6.5	0.0	1457.1	1.2	1645.1

Note:

*Since some metal generation amounts are still outstanding at the time of this report submission, the actual total amount of metals generated in June 2017 will be updated in the next reporting month.

-40.78 ton, 119.16 ton and 291.63 ton of inert C&D material were disposed of as public fill to Chai Wan Public Fill Barging Point, Tuen Mun Area 38 and Tseung Kwan O Area 137 Public Fill respectively in the reporting month.

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

Lyric Theatre Complex

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

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposed to Sorting Facility	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Wood/ Timber	Chemical Waste	Others, e.g. General Refuse
	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)	(in ton)
2016													
Mar	2702.1	0.0	0.0	0.0	2702.1	0.0	0.0	4.5	0.1	0.0	0.0	0.0	30.6
Apr	8631.5	0.0	0.0	0.0	8631.5	0.0	0.0	16.0	0.0	0.0	0.0	0.0	19.2
May	12487.8	0.0	0.0	0.0	12487.8	0.0	0.0	34.0	0.0	0.0	0.0	0.7	60.5
Jun	8600.8	0.0	0.0	0.0	8600.8	0.0	0.0	31.4	0.2	0.0	0.0	0.5	13.5
Jul	12624.2	0.0	0.0	0.0	12624.2	0.0	0.0	19.6	0.0	0.0	0.0	2.0	9.9
Aug	14419.9	0.0	0.0	0.0	14419.9	0.0	0.0	43.9	0.0	0.0	0.0	0.0	11.1
Sep	13671.3	0.0	0.0	0.0	13671.3	0.0	0.0	59.8	0.0	0.0	0.0	1.6	12.4
Oct	13088.9	0.0	0.0	0.0	13088.9	0.0	0.0	37.1	0.2	1.5	0.0	0.0	15.2
Nov	12424.7	0.0	0.0	0.0	12424.7	0.0	0.0	74.7	0.0	0.0	0.0	1.4	10.2
Dec	12487.6	0.0	0.0	0.0	12487.6	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
2017													
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	11361.7	0.0	0.0	0.0	11361.7	0.0	0.0	16.1	0.0	0.0	0.0	1.4	8.5
Apr	2591.5	0.0	0.0	0.0	2591.5	0.0	0.0	35.7	0.0	0.0	0.0	0.0	4.7
May	2579.3	0.0	0.0	99.0	2480.3	0.0	0.0	20.9	0.1	0.0	0.0	0.5	10.0
Jun	476.0	0.0	0.0	341.0	129.7	5.3	0.0	0.0	0.0	0.0	0.0	0.0	7.6
Sub-total (2017)	35724.5	0.0	0.0	440.0	35279.3	5.3	0.0	152.4	0.3	0.0	0.0	2.7	47.8
Total	146863.3	0.0	0.0	440.0	146418.0	5.3	0.0	487.2	0.7	1.5	0.0	10.3	239.4

Note:

-129.72 tonnes of inert C&D material were disposed of as public fill to Tseung Kwan O Area 137 in the reporting month.

J. Environmental Mitigation Measures – Implementation Status

Table J-1: Environmental Mitigation Measures Implementation Status

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

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

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	<ul style="list-style-type: none"> Wherever possible the final discharge point from particulate matter arrestment plant, where is not necessary to achieve dispersion from residual pollutants, should be at low level to minimise the effect on the local community in the case of abnormal emissions and to facilitate maintenance and inspection 	✓	✓
	Emission Limits		
	<ul style="list-style-type: none"> All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist or smoke 	✓	✓
	Engineering Design/Technical Requirements		
	<ul style="list-style-type: none"> As a general guidance, the loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to prevent the release of visible dust and/or other noxious or offensive emissions 	✓	✓
-	<p>Non-Road Mobile Machinery (NRMM):</p> <p>All NRMMs operating on-site which are subject to emission control of Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation are approved/exempted (as the case may be) and affixed with the requisite approval/exemption labels.</p>	✓	✓
Noise Impact (Construction)			
3.1 & 10.4.1	<p>Good Site Practice</p> <p>Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:</p> <ul style="list-style-type: none"> only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works; machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs; mobile plant should be sited as far away from NSRs as possible; and material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Obs	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
3.1 & 10.4.1	<p>Adoption of Quieter PME</p> <p>The recommended quieter PME adopted in the assessment were taken from the EPD's QPME Inventory and "Sound Power Levels of Other Commonly Used PME" are presented in Table 4.26 in the EIA report. It should be noted that the silenced PME selected for assessment can be found in Hong Kong.</p>	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
3.1 & 10.4.1	Use of Movable Noise Barriers Movable noise barriers can be very effective in screening noise from particular items of plant when constructing the Project. Noise barriers located along the active works area close to the noise generating component of a PME could produce at least 10 dB(A) screening for stationary plant and 5 dB(A) for mobile plant provided the direct line of sight between the PME and the NSRs is blocked.	✓	✓
3.1 & 10.4.1	Use of Noise Enclosure/ Acoustic Shed The use of noise enclosure or acoustic shed is to cover stationary PME such as air compressor and concrete pump. With the adoption of the noise enclosure, the PME could be completely screened, and noise reduction of 15 dB(A) can be achieved according to the EIAO Guidance Note No.9/2010.	N/A	N/A
3.1 & 10.4.1	Use of Noise Insulating Fabric Noise insulating fabric can also be adopted for certain PME (e.g. drill rig, pilling machine etc). The fabric should be lapped such that there are no openings or gaps on the joints. According to the approved Tsim Sha Tsui Station Northern Subway EIA report (AEIAR-127/2008), a noise reduction of 10 dB(A) can be achieved for the PME lapped with the noise insulating fabric.	✓	✓
3.1 & 10.4.1	Scheduling of Construction Works outside School Examination Periods During construction phase, the contractor should liaise with the educational institutions (including NSRs LCS and CRGPS) to obtain the examination schedule and avoid the noisy construction activities during school examination periods.	N/A	N/A
Water Quality Impact (Construction)			
4.1 & 10.5.1	Construction site runoff and drainage The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts: <ul style="list-style-type: none"> At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system should be undertaken by the WKCDA's Contractor prior to the commencement of construction; Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the WKCDA's Contractor prior to the commencement of construction. All drainage facilities and erosion and sediment control structures should be regularly inspected and 	Obs	✓
		✓	✓
		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"> Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities. 	✓	✓
	<ul style="list-style-type: none"> All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. 	✓	✓
	<ul style="list-style-type: none"> Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. 	✓	✓
	<ul style="list-style-type: none"> Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and stormwater runoff being directed into foul sewers. 	✓	✓
	<ul style="list-style-type: none"> Precautions should be taken at any time of the year when rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. 	Obs	✓
	<ul style="list-style-type: none"> Bentonite slurries used in piling or slurry walling should be reconditioned and reused wherever practicable. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 	N/A	N/A
	Barging facilities and activities		
	Recommendations for good site practices during operation of the proposed barging point include:		
	<ul style="list-style-type: none"> All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; 	N/A	N/A
	<ul style="list-style-type: none"> Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of 	N/A	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	materials or polluted water during loading or transportation;		
	<ul style="list-style-type: none"> All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site. 	N/A	N/A
		N/A	N/A
4.1 & 10.5.1	Sewage effluent from construction workforce Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	✓	✓
4.1 & 10.5.1	General construction activities <ul style="list-style-type: none"> Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used. Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event. 	✓	✓
		Obs	Rem/Obs
Waste Management Implications (Construction)			
6.1 & 10.7.1	Good Site Practices Recommendations for good site practices during the construction activities include:		
	<ul style="list-style-type: none"> Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site Training of site personnel in proper waste management and chemical handling procedures Provision of sufficient waste disposal points and regular collection of waste Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction to public roads Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the inert or non-inert C&D materials is not anticipated 	✓	✓
		✓	✓
		Obs	✓
		✓	✓
		✓	✓
		✓	✓

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
6.1 & 10.7.1	Waste Reduction Measures		
	Recommendations to achieve waste reduction include:		
	• Sort inert C&D material to recover any recyclable portions such as metals	✓	✓
	• Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal	✓	✓
	• Encourage collection of recyclable waste such as waste paper and aluminium cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force	✓	✓
	• Proper site practices to minimise the potential for damage or contamination of inert C&D materials	✓	✓
	• Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	✓	✓
6.1 & 10.7.1	Inert and Non-inert C&D Materials		
	In order to minimise impacts resulting from collection and transportation of inert C&D material for off-site disposal, the excavated materials should be reused on-site as fill material as far as practicable. In addition, inert C&D material generated from excavation works could be reused as fill materials in local projects that require public fill for reclamation.	✓	✓
	• The surplus inert C&D material will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong.	✓	✓
	• Liaison with the CEDD Public Fill Committee (PFC) on the allocation of space for disposal of the inert C&D materials at PFRF is underway. No construction work is allowed to proceed until all issues on management of inert C&D materials have been resolved and all relevant arrangements have been endorsed by the relevant authorities including PFC and EPD.	✓	✓
	• The C&D materials generated from general site clearance should be sorted on site to segregate any inert materials for reuse or disposal of at PFRFs whereas the non-inert materials will be disposed of at the designated landfill site.	✓	✓
	• In order to monitor the disposal of inert and non-inert C&D materials at respectively PFRFs and the designated landfill site, and to control fly-tipping, it is recommended that the Contractor should follow the Technical Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition Materials issued by Development Bureau. In addition, it is also recommended that the Contractor should prepare and implement a Waste Management Plan detailing their various waste arising and waste management practices in accordance with the relevant requirements of the Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site.	✓	✓

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

EM&A Ref.	Recommendation Measures	Implementation Stage	
		M+ Museum	Lyric Theatre Complex
	<ul style="list-style-type: none"> The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out; Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater; Truck bodies and tailgates should be sealed to stop any discharge; Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping; Speed control for trucks carrying contaminated materials should be exercised; Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and Maintain records of waste generation and disposal quantities and disposal arrangements. 	N/A	N/A
Ecological Impact (Construction)			
No mitigation measure is required.			
Landscape and Visual Impact (Construction)			
Table 9.1 & 10.8 (CM1)	Trees should be retained in situ on site as far as possible. Should tree removal be unavoidable due to construction impacts, trees will be transplanted or felled with reference to the stated criteria in the Tree Removal Applications to be submitted to relevant government departments for approval in accordance to ETWB TCW No. 29/2004 and 3/2006.	✓	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	5	0	0