M+ Museum Main Works at West Kowloon Cultural District

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

February 2016

Mott MacDonald

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Executive Summary

In October 2015, 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 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 commenced on 31 October 2015.

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

This Monthly EM&A Report presents the monitoring works conducted from 1 January to 31 January 2016. Construction phase weekly site inspections were carried out on 8, 14, 21 and 28 January 2016 to confirm the implementation measures undertaken by the Contractor 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 K**.

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) in this reporting month. Noise monitoring was suspected as permission and access to the podium level of the identified noise sensitive receivers could not be granted. Liaision with the management office of the International Commerce Centre for the other location identified at the International Commerce Centre are in progress for granting access to conduct noise monitoring.

Implementation of Mitigation Measures

Construction phase weekly site inspections were carried out on 8, 14, 21 and 28 January 2016 to confirm the implementation measures undertaken by the Contractor 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 K.

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

Record of Complaints

No environmental complaint was recorded in the reporting month.

Record of Notification of Summons and Successful Prosecutions

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

Future Key Issues

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

- Pile Cap Construction
- Site formation
- Concrete pouring
- Excavation
- Formworks installation
- Slab construction
- Underground drainage works

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

In October 2015, 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 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 commenced on 31 October 2015.

The overall works for the WKCD fall under two separate categories of Designated Project (DP) of the Environmental Impact Assessment Ordinance (EIAO), namely an "engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100 000" (Item 3 of Schedule 3) and "an underpass more than 100m in length under the built areas" (Item A.9, Part I, Schedule 2). An Environmental Permit No. EP-453/2013/A (EP) was issued with respect to the "Underpass Road and Austin Road Flyover Serving the West Kowloon Cultural District" which specifically includes the abovementioned category of DP under Item A.9, Part I, Schedule 2 of the EIAO. The captioned project (i.e. The M+ Museum Mian Works at WKCD) includes 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. Basement of the M+ museum, which is part of the WKCD integrated basement consists of the underpass road.This report focuses on main works for M+ museum.

The Monthly EM&A Report is prepared in accordance with the Condition 3.4 of the Environmental Permit No. EP-453/2013/A. This Monthly EM&A Report presents the monitoring works conducted from 1 January to 31 January 2016. The purpose of this report is to summarise the findings in the EM&A of the project over the reporting period.

1.2 Project Organisation

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

1.3 Environmental Status in the Reporting Period

During the reporting period, construction works of the Project undertaken include:

- Pile Cap Construction
- Site formation
- Concrete pouring
- Excavation

- Rebar /earthing installation
- Formworks installation
- Slab construction
- Underground drainage works

The captioned project involves part of the Schedule 2 Designated Project (DP), .i.e. “an underpass more than 100m in length under the built areas” (Item A.9, Part I, Schedule 2). Currently, only excavation works was being carried out for the M+ Museum. The construction of the underpass will not commence until the excavation works reach its boundary. The schedule 2 DP has not been physically commenced.

The Construction Works Programme of the Project is provided in **Appendix B**. A layout plan of the Project is provided in **Figure 1**. Please refer to **Table 4.3** on the status of the environmental licenses.

1.4 Summary of EM&A Requirements

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

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

Table 1.1: Summary of Impact EM&A Requirements

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

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

with details has been submitted to EPD on 20 January 2016 for consideration and futher comments was received on 29 January 2016. The preparation of response to comments is in progress.

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. Correspondence from The Harbourside and The Arch management offices is attached in **Appendix C** for reference. Nevertheless, suitable air quality monitoring location at AM2 was identified on the ground floor in front of The Harbourside Tower 1, which is at the same location as that of baseline monitoring for consistency. No management approval is required at the ground floor for conducting the air monitoring and a secure electricity supply is available there. Noise monitoring at G/F of Harbourside will not be representative and thus NM1 will be suspended until permission and access is granted by The Harbourside management office or the other location identified at the International Commerce Centre. As there is no alternative locations for noise monitoring station identified, so liaision with the management office of the International Commerce Centre are in progress for granting access to conduct noise monitoring at the podium floor which is free from screening to the construction activities . Therefore, 2 air quality monitoring stations were confirmed for the impact monitoring.

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

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

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 K**.

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 F**.

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

2.2 Air Quality

2.2.1 Monitoring Parameters, Frequency and Duration

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

Table 2.1: Air Quality Monitoring Parameters, Frequency and Duration

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

2.2.2 Monitoring Locations

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

Table 2.2: Air Quality Monitoring Station

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

2.2.3 Monitoring Equipment

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

Table 2.3: TSP Monitoring Equipment

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

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

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

2.2.4 Monitoring Methodology

24-hour TSP Monitoring

Installation

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

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

Preparation of Filter Papers

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

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

Field Monitoring Procedures

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

Maintenance and Calibration

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

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

Field Monitoring

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

- Turn the power on.

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

Maintenance and Calibration

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

Weather Condition

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

2.3 Noise

Currently, the works under the captioned project are confined in the western part of the WKCD site. Therefore, only the monitoring station NM1 was set up. However, the Harbourside management office formally rejected our proposal of setting up noise monitoring equipment on its premises at the podium level of Tower 1 (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. Since noise monitoring at G/F of Harbourside will not be representative and thus NM1 is being suspended until permission and access is granted by The Harbourside management office or the other location identified at the International Commerce Centre. Liaision with the management office of the International Commerce Centre are in progress for granting access to conduct noise monitoring.

2.4 Landscape and Visual

2.4.1 Monitoring Program

Table 2.4 details the monitoring program (as proposed in the WKCD EIA report) for landscape and visual impact during the construction phase.

Table 2.4: 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 and landscape and visual impact was undertaken in compliance with the EM&A Manual during the reporting month.

3.2 Air Quality Monitoring

3.2.1 1-hour TSP

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

Table 3.1: Summary of 1-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	1-hour TSP (µg/m^3)			Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
			1st Result	2nd Result	3rd Result			
AM1	05-Jan-16	10:30	78	85	91	51-97	273.7	500
	11-Jan-16	10:20	78	86	95			
	15-Jan-16	8:00	80	64	71			
	21-Jan-16	10:30	78	85	97			
	27-Jan-16	10:43	55	51	62			
AM2	05-Jan-16	10:45	80	87	94	61-98	274.2	500
	11-Jan-16	10:32	80	88	98			
	15-Jan-16	8:12	65	81	61			
	21-Jan-16	10:40	80	86	96			
	27-Jan-16	10:55	81	73	70			

3.2.2 24-hour TSP

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

Table 3.2: Summary of 24-hour TSP monitoring results

Monitoring Station	Monitoring Date	Start Time	Monitoring Results (µg/m^3)	Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
AM1	05-Jan-16	10:33	50	45-50	143.6	260
	11-Jan-16	10:22	48			
	15-Jan-16	08:02	49			
	21-Jan-16	10:28	45			
	27-Jan-16	10:45	48			
AM2	05-Jan-16	10:43	58	43-72	151.1	260
	11-Jan-16	10:36	56			

Monitoring Station	Monitoring Date	Start Time	Monitoring Results (µg/m^3)	Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
	15-Jan-16	08:15	56			
	21-Jan-16	10:38	43			
	27-Jan-16	10:58	72			

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

3.3 Noise Monitoring

The noise impact monitoring is being suspended until permission and access is granted by The Harbourside management office or the other location identified at the International Commerce Centre. Liaision with the management office of the International Commerce Centre are in progress for granting access to conduct noise monitoring. Please refer to **Section 2.3** for details.

3.4 Landscape and Visual Impact

Landscape and visual impact inspections were conducted as part of the weekly site inspections on 8 and 21 January 2016 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 K**.

4 Environmental Site Inspection

4.1 Site Inspection

Construction phase weekly site inspections were carried out on 8, 14, 21 and 28 January 2016. The joint site inspection with IEC, ET, ER and Contractor was held on 8 January 2016. No site inspection was conducted by the EPD during the reporting month. No non-compliance was recorded during the site inspection. All observations have been recorded in the site inspection checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from the site inspections and associated recommendations are summarized in **Table 4.1**.

Table 4.1: Summary of Site Inspections and Recommendations

Inspection Date	Parameter	Observation / Recommendation	Contactor's Responses / Action(s) Undertaken	Close-out (Date)
31 Dec 2015	Waste management	The contractor was reminded to clean up the drip tray of chemical storage for wastewater treatment.	The drip tray of chemical storage was cleaned up.	4 Dec 2016
31 Dec 2015	Waste management	The contractor was reminded to provide locks for chemical waste storage.	The contractor has provided locks for chemical waste storage.	4 Dec 2016
8 Jan 2016	Air quality	The contractor was reminded to enhance water spraying frequency for unpaved area.	The contractor has enhanced water spraying frequency for unpaved area.	14 Jan 2016
8 Jan 2016	Water quality	Overflow was observed at wetsep. The contractor was reminded to review the capacity of wetsep or consider other measures to solve the overflow problem. The contractor was also reminded to remove all stagnant water in site area including area near hoarding.	No overflow was observed. All stagnant water has been removed. The contractor is arranging to install one more wetsep and a new drainage plan to further improve the condition.	21 Jan 2016
8 Jan 2016	Air quality	The stockpile was not well covered. The contractor was reminded to well cover the stockpile to reduce dust impact.	All the stockpile has been applied with dust suppression spraying.	15 Jan 2016
21 Jan 2016	Waste managment	Chemicals without drip tray were observed. The contractor was reminded to provide drip trays for chemicals.	The contractor has provided drip trays for the chemicals	22 Jan 2016
28 Jan 2016	Water quality/ Air quality	Some of the dust supression spraying of the stockpile was found outside the boundary of M66. The contractor was reminded to ensure dust supression spraying is effective in covering the stockpile well and remove the spraying outside M66.	Follow-up status will be provided in the next reporting month.	On-going
28 Jan 2016	Waste management	Oil was observed on the ground because of overflow of drip tray under heavy rain. The contractor was reminded to remove the chemical waste in drip tray more frequently and remove the oil overflowed from the drip tray.	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 Contractor has 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.

As advised by the Contractor, 21,077.4 ton of excavated waste was disposed. The details of disposal and reuse of excavated waste was shown in **Table 4.2**, while 23.2 ton of general refuse was disposed of at SENT landfill. 0 ton of metals and 0 ton of timber were collected by recycling contractors in the reporting month. 0 ton of inert C&D materials was reused on site. 0 ton of inert C&D materials was reused in other projects. 0 ton of chemical wastes was collected by licensed contractors in the reporting period.

Table 4.2: Disposal/ Reuse/Storage of Excavated Waste in the Reporting Month

Site of Disposal/ Reuse/ Storage	Quantities (tonnes)
Fill Bank at Tseung Kwan O Area 137	149.4
Green Valley	8,528
Design and Construction of Kai Tak Cable Tunnel, CLP	448
MTR Contract 1002 Whampoa Station and Overrun Tunnel	5,600
M+ Stockpile (M66, storage site near M+)	2,880
Hsin Chong Stockpile (Storage site near M+)	3,472

Note: 16 tonnes per truckload is assumed.

The actual amounts of different types of waste generated by the activities of the Project in the reporting month are shown in **Appendix J**.

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**.

Table 4.3: Status of Environmental Submissions, Licenses and Permits

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	--

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Construction Noise Permit				
GW-RE1220-15	04-Dec-15	03-Jun-16	Valid	
Wastewater Discharge License				
WT00022693-2015	12-Nov-15	30-Nov-20	Valid	--

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 K**. In particular, the following mitigation measures were brought to attention during the site inspections:

Chemical and Waste Management

- All chemicals store on site should be provided with drip trays.
- Drip trays should be kept in good condition.
- Chemical waste in drip trays should be frequently removed.
- Chemical waste storage should be securely closed.

Air Quality

- Regular watering with complete coverage should be implemented to reduce the overall dust emission of the construction site.
- Stockpiles of cement and other construction materials should be kept covered when not being used.
- Maintain high standard of housekeeping to prevent emission of fugitive dust.

Water Quality

- Silty effluent should be treated/ desilted before discharged. Untreated effluent should be prevented from entering public drain channel.
- Stagnant water in site area should be cleared.
- The capacity of the wetsep should be reviewed to avoid overflow problem.
- Dust suppression spraying for stockpile should be applied appropriately to avoid any leakage of spraying from the site.

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

5.1 Record on Non-compliance of Action and Limit Levels

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

5.2 Record on Environmental Complaints Received

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

5.3 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 L**.

5.4 Review of Reasons for and Implications of Non-compliance, Complaints, Summons and Prosecutions

As no notifications of summons or successful prosecution were received, the associated review was not required.

5.5 Follow-up Actions Taken

As no notifications of summons or successful prosecution were received, the associated follow-up actions were not required.

6 Future Key Issues

6.1 Construction Works for the Coming Month(s)

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

- Pile Cap Construction
- Site formation
- Concrete pouring
- Excavation
- Rebar /earthing installation
- Formworks installation
- Slab construction
- Underground drainage works

6.2 Key Issues for the Coming Month

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.

6.3 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 in accordance with the approved EM&A Manual has commenced since 31 October 2015. The noise impact monitoring is being suspended until permission and access is granted by The Harbourside management office or the other location identified at the International Commerce Centre. Liaision with the management office of the International Commerce Centre are in progress for granting access to conduct noise monitoring. Please refer to Section 2.3 for details.The tentative monitoring schedule for the coming month is shown in the **Appendix F**.

7 Conclusions and Recommendations

7.1 Conclusions

The EM&A programme as recommended in the EM&A Manual has been undertaken since the construction works commenced on 31 October 2015.

Monitoring of air quality with respect to the Project is underway. In particular, the 1-hour TSP, 24-hour TSP 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 in the reporting month. Noise monitoring was suspended as the permission and access at podium of the identified noise sensitive receiver could not be granted. Liaision with the management office of the International Commerce Centre for the other location identified at the International Commerce Centre are in progress for granting access to conduct noise monitoring.

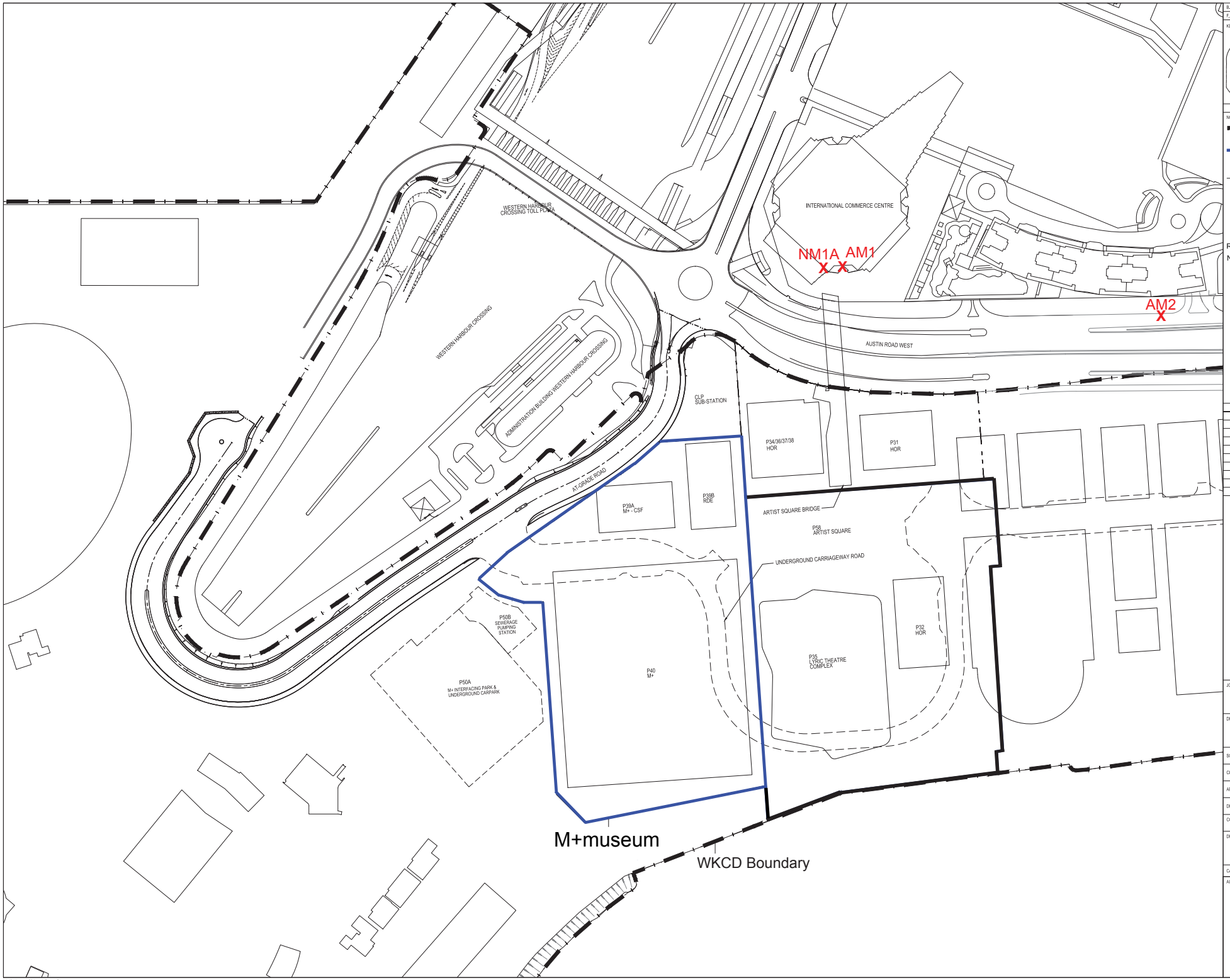
No environmental complaint and no notifications of summons or successful prosecution were received during the reporting month.

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

7.2 Recommendations

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

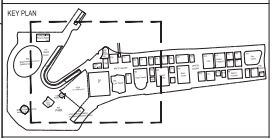
Figure 1 Site Layout Plan and Monitoring Stations



B.D. REF:

F.S.D. REF:

KEY PLAN



KEY PLAN

NOTES:

WKCD BOUNDARY

M+ MUSEUM SITE BOUNDARY

BOUNDARY OF UNDERPASS ROAD SERVING THE PLANNED WKCD

X CONSTRUCTION AIR/NOISE MONITORING STATION

Remarks:

NM1 has been rejected. NM1A is under liaision.

REV.	DATE	DESCRIPTION	INITIAL

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

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

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

CONTRACT NO.

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

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

AUTHORITY

westKowloon 西九文化區

A1 (841mm x 594mm) Sheet Size

Appendices

Appendix A. Project Organisation
Appendix B. Tentative Construction Programme
Appendix C. Correspondence from The Harbourside and The Arch management offices
Appendix D. Action and Limit Levels for Construction Phase
Appendix E. Event and Action Plan for Air Quality, Noise, Landscape and Visual Impact
Appendix F. Monitoring Schedule
Appendix G. Calibration Certifications
Appendix H. Graphical Plots of the Monitoring Results
Appendix I. Meteorological Data Extracted from Hong Kong Observatory
Appendix J. Waste Flow table
Appendix K. Environmental Mitigation Measures – Implementation Status
Appendix L. Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Appendix A. Project Organisation

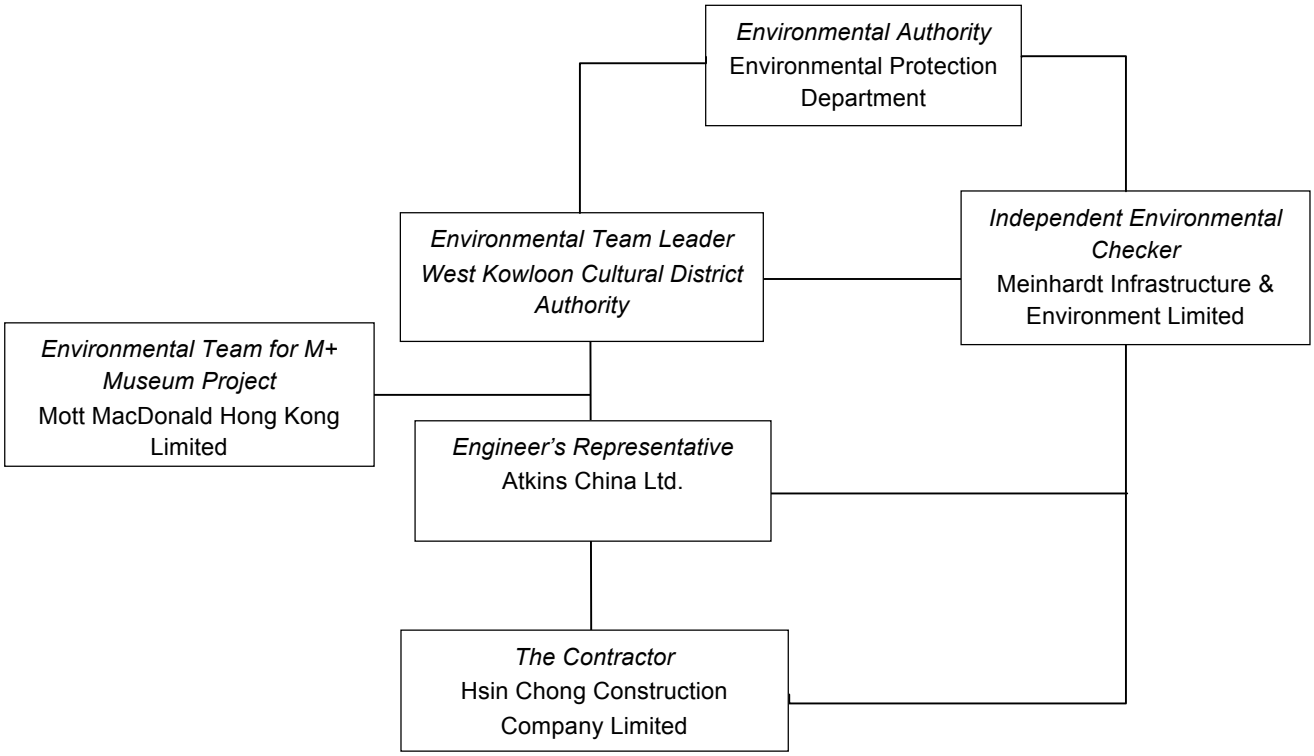


Table B-1: Contact information

Company Name	Role	Name	Telephone
Atkins China Ltd.	Senior Resident Engineer	Mr. Alfred Lee	5401 7289
Meinhardt Infrastructure & Environment Limited	IEC	Mr. Fredrick Leong	2859 1739
Hsin Chong Construction Company Limited	Environmental Officer	Mr. Andy Leung	9489 0035
Mott MacDonald Hong Kong Ltd.	Contractor's Environmental Team Leader	Mr Brandon Wong	2828 5875
West kowloon Cultural District Authority	Senior Environmental Specialist	Mr. Brian Tam	2200 0059

Appendix B. Tentative Construction Programme

Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
M+3MRP - Rev B (1st Draft)							
M+.10 Prelims							
M+.10.00 Key Dates / IAS / LOC							
Access Date							
3M3A1020	Access date M05 - SPS	11-Feb-16		0			286
3M3A1030	Access date M06 - ICP	11-Feb-16		0			286
3M3A1040	Access date M07 - ICP	11-Feb-16		0			286
3M3A1050	Access date M22 - ICP/SPS	11-Feb-16		0			286
3M3A1060	Access date M23 - Park Area	31-Dec-15		0			319
3M3A1070	Access date M32 - ICP & SPS	11-Feb-16		0			286
3M3A1080	Access date M65 , M67 , M68 - Virtual Mock Up (VMU)	05-Dec-15		0			340
Vacation Date							
3MVD1000	M21-M+ north west area within at-grade road, M22-ICP/SPS frontage within at-grade road, (M72)	30-Nov-15		0			344
3MVD1010	M34-Area between park phase 3 boundary and new access raod, M35 Temp Access Road Junction at KVB	06-Nov-15 A		0			
3MVD1020	M14a, M15, M16, East boundary Lyric Interface	03-Mar-16		0			269
Milestone Dates							
Cost Centre A - Preliminaries & General requirements							
3MMSA01	Complete Construction Programme and Methodology Submission and Presentation	28-Nov-15		0			346
3MMSA02	Obtain approval from Contractor Admin on: Proj Man Doc's. Construction Prog., Insurance, mobilisation, etc	28-Nov-15		0			346
3MMSA03	Compliance Review to the Contract Administrator's satisfaction	30-Dec-15		0			320
Cost Centre B - M+							
3MMSB01	Complete Initial Mobilization (3nr Excavators)	28-Nov-15 A		0			
Other information as requested by the Contract Administrator							
3MMS01	Obtain Interface Schedule from CA (Draft for Comments)	20-Nov-15 A		0			
M+.10.10 Site Accommodation & Facilities							
M+ Site Offices							
Stage 1							
Existing Container Offices - Area M10							
3MSO015	Existing Container Offices to be relocated to Area M66	28-Nov-15 A	28-Nov-15 A	38			
3MSO018	Relocate Existing Container Offices from Area M10 to Area M66	16-Nov-15 A	20-Nov-15 A	16			
Stage 2							
Temporary Container Offices - Area M66							
3MSO060	Access / Egress - Area M66		16-Nov-15 A	0			
3MSO065	Set up Containers from M10 to M66	16-Nov-15 A	04-Dec-15	16			185
3MSO075	Period for Occupying the Temporary Containers	16-Nov-15 A	31-May-16	147			203
3MSO085	Demobilize Containers	16-May-16	31-May-16	14			203
Clocken Flap Event							
3MSO080	Setup for 5m wide Strip for Clocken Flap Portaloo	16-Nov-15 A	26-Nov-15 A	9			
3MSO095	Clocken flap	27-Nov-15 A	29-Nov-15	2			338
3MSO105	Demobilize Toilet	30-Nov-15	04-Dec-15	5			344
Stage 3							
Contractor's Site Office - Area M10 (1000m2)							
3MSO021	Start clearing and setting up of Contractor's Office at Area M10	05-Dec-15		0			294
3MSO031	Site Construction / Setup 1000m2 / 100nr person Office with 2 Levels	05-Dec-15	30-Jan-16	45			298
3MSO035	Site Construction / Setup- 1000m2 = 100 Nr of Person (2 Floors)	05-Dec-15	30-Jan-16	44			294
3MSO041	Period of Occupancy	30-Jan-16		0			298
3MSO045	Start to Occupancy	30-Jan-16		0			368
ASIO - Area L22 & L23 (3660 m2)							
3MSO000	Prepare submission to BD & FSD	28-Nov-15 A	28-Nov-15	20			252
3MSO005	Konwo Sub Contractor Works	30-Nov-15	22-Mar-16	91			252
3MSO010	CAI - Design / Approvals	28-Nov-15	30-Nov-15	2			252
3MSO020	FSD / Liaise / Approvals	01-Dec-15	31-Dec-15	25			323
3MSO030	Konwoo S/C Works	15-Dec-15	31-Mar-16	84			252
3MSO040	Start to Occupancy	01-Apr-16		0			252
M+.10.40 Site Administration							
Statutory procedures and consents (e.g. notification, permit, consent, etc.)							
Statutory Notice & Forms							
3MSA006	EPD - Storm water discharge permit to harbour application & approval	16-Oct-15 A	13-Jan-16	72			308
Building Department Consents							
3MSA007	ELS (Stage 2)		04-Dec-15	0			6
Key Domestic Subcontractors							
Finalize Major subcontractor agreements							
3MDS.10001	Gartner - Facade	26-Sep-15 A	29-Nov-15	29			344
3MDS.10002	Alliance - Concrete	26-Sep-15 A	02-Dec-15	29			342
3MDS.10003	Ming Tai - Formworks	26-Sep-15 A	30-Nov-15	29			343
3MDS.10004	Tin Wo - Rebar	26-Sep-15 A	30-Nov-15	29			343
3MDS.10005	Gammon Steel - Steel Truss	26-Sep-15 A	01-Dec-15	29			343
3MDS.10006	Liebherr- Tower Crane	26-Sep-15 A	03-Dec-15	29			341
3MDS.10007	Hsin Chong Aster - MEP - Drainage	26-Sep-15 A	28-Nov-15	29			345
3MDS.10008	Hsin Chong Aster - MEP - Earthing	26-Sep-15 A	28-Nov-15	29			345
3MDS.10009	Chun Sing - ELS	26-Sep-15 A	30-Nov-15	29			297
Design & Realization							
Basement							
3MDR.1001	Preparation and submission for BIM for B2 Underground	09-Oct-15 A	03-Nov-15 A	21			
3MDR.1002	Consultant/CA Review & Approval (MJV)	04-Nov-15 A	30-Nov-15	11			19
3MDR.1003	Preparation and submission for CSID / CBWD for B2 underground	09-Oct-15 A	06-Nov-15 A	23			
3MDR.1004	Consultant/CA Review & Approval	18-Nov-15 A	01-Dec-15	11			18
3MDR.1005	Preparation and submission for Drainage drawings at B2 underground	09-Oct-15 A	05-Dec-15	29			4
3MDR.1006	Consultant/CA Review & Approval	05-Dec-15	19-Dec-15	11			4

HSIN新昌 CHONG

M+ 3 Months Rolling Programme (3MRP)
Revision B (1st Draft)

M+3 Months Rolling Programme

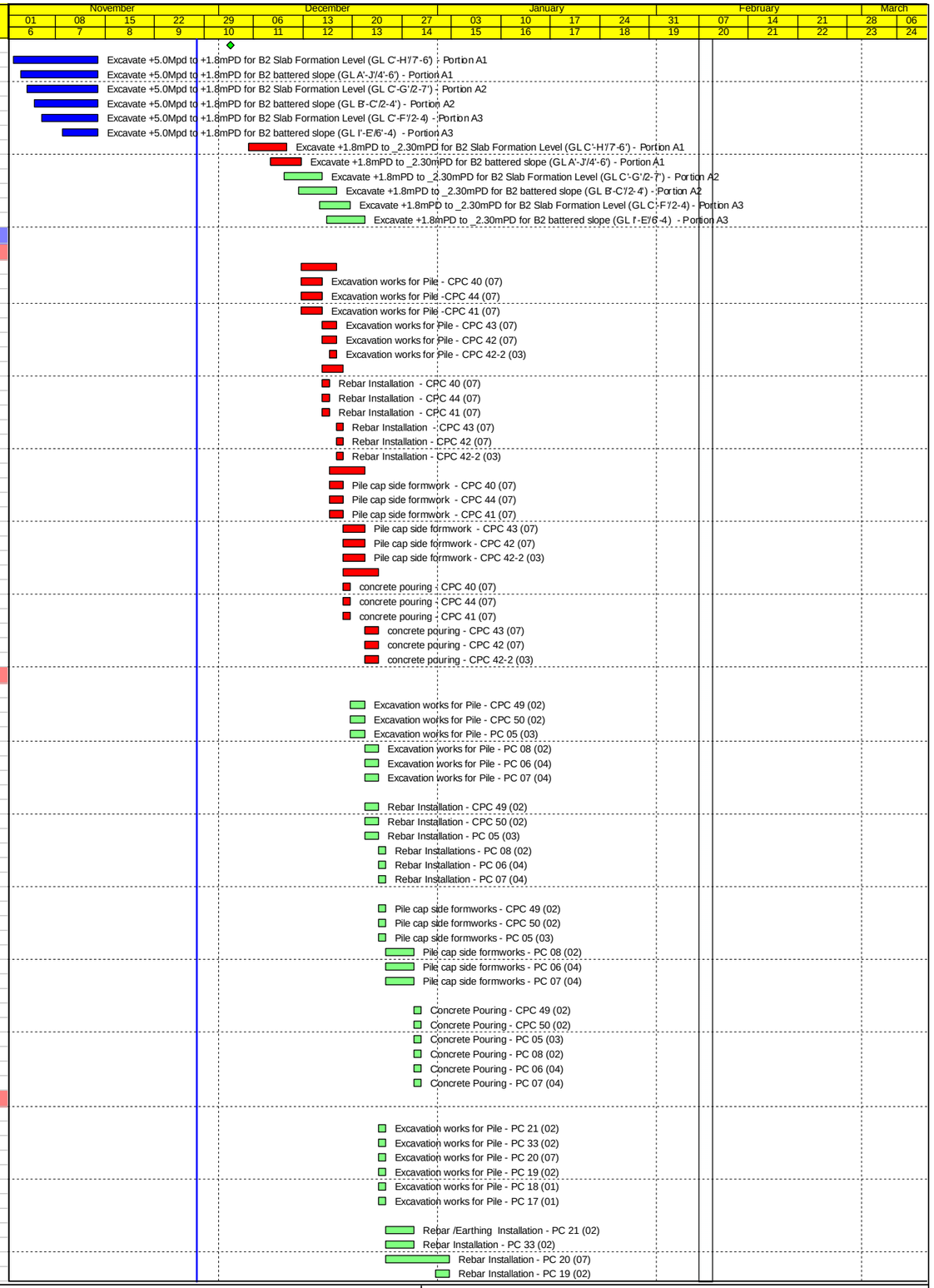
Date	Revision	Checked	Approved
22-Oct-15	MOBP/3MRP Prog Rev B	Edgar Payos	Leo Harnett
02-Dec-15	3MRP Rev B (1st Draft)	Edgar Payos	Leo Harnett

Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
3MDR.1007	Preparation and submission for BIM at B2/F	23-Oct-15 A	24-Nov-15 A	26			
3MDR.1008	Consultant/CA Review & Approval	28-Nov-15	11-Dec-15	11			271
3MDR.1009	Preparation and submission for CSID / CBWD at B2/F	23-Oct-15 A	27-Nov-15 A	29			
3MDR.1010	Consultant/CA Review & Approval	28-Nov-15	11-Dec-15	11			271
3MDR.1011	Preparation and submission for BIM at B1/F	30-Oct-15 A	28-Dec-15	49			258
3MDR.1012	Consultant/CA Review & Approval	28-Dec-15	11-Jan-16	11			310
3MDR.1013	Preparation and submission for CSID / CBWD at B1/F	30-Oct-15 A	05-Jan-16	54			258
3MDR.1014	Consultant/CA Review & Approval	05-Jan-16	19-Jan-16	11			303
3MDR.1015	Preparation and submission for BIM at LG/F	28-Nov-15	15-Jan-16	39			258
3MDR.1016	Consultant/CA Review & Approval	15-Jan-16	29-Jan-16	11			295
3MDR.1017	Preparation and submission for CSID / CBWD at LG/F	28-Nov-15	20-Jan-16	43			258
3MDR.1018	Consultant/CA Review & Approval	20-Jan-16	03-Feb-16	11			291
3MDR.1019	Preparation and submission for BIM at G/F	11-Dec-15	17-Jan-16	30			258
3MDR.1020	Consultant/CA Review & Approval	20-Jan-16	03-Feb-16	11			291
3MDR.1021	Preparation and submission for CSID / CBWD at LG/F	11-Dec-15	02-Mar-16	66			258
3MDR.1022	Consultant/CA Review & Approval	03-Mar-16	16-Mar-16	11			258
Interfacing Carpark and Sewage Pumping Station (SPS)							
3MDR.1023	Study of Underground utilities for ICP/SPS	16-Oct-15 A	13-Jan-16	72			308
Pre-construction submission for the early works							
Method Statement & Material Submission							
3MPS.1025	Dewatering proposal	09-Oct-15 A	15-Oct-15 A	6			
3MPS.1026	Consultant/CA Review & Approval	16-Oct-15 A	30-Nov-15	11			9
3MPS.1026a	New Revised Dewatering Proposal Method Statement	30-Oct-15 A	27-Nov-15 A	5			
3MPS.1026b	New Installation Proposed Dewatering	10-Nov-15 A	02-Dec-15	5			7
3MPS.1027	ELS - Materials submission	28-Nov-15	11-Dec-15	11			282
3MPS.1028	Consultant/CA Review & Approval	12-Dec-15	18-Dec-15	6			282
3MPS.1029	Waterproofing - Material submission	09-Oct-15 A	05-Nov-15 A	22			
3MPS.1030	Consultant/CA Review & Approval	06-Nov-15 A	03-Dec-15	11			34
3MPS.1031	Concrete design mix for structure & trial mix	09-Oct-15 A	22-Oct-15 A	11			
3MPS.1032	Consultant/CA Review & Approval	23-Oct-15 A	01-Dec-15	11			12
3MPS.1035	Rebar - Material submission & lab test	09-Oct-15 A	22-Oct-15 A	11			
3MPS.1036	Consultant/CA Review & Approval	23-Oct-15 A	01-Dec-15	11			12
3MPS.1037	Formwork design for basement structure	23-Oct-15 A	07-Dec-15	15			20
3MPS.1038	Consultant/CA Review & Approval	07-Dec-15	21-Dec-15	11			20
3MPS.1039	BS/MEP & Cast-in material submission (for basement pipe works & fittings)	16-Oct-15 A	04-Nov-15 A	16			
3MPS.1040	Consultant/CA Review & Approval	05-Nov-15 A	03-Dec-15	11			10
3MPS.1041	F3+ - Formwork material submission	16-Oct-15 A	25-Oct-15 A	8			
3MPS.1042	Consultant/CA Review & Approval	26-Oct-15 A	30-Nov-15	11			12
3MPS.1043	Material submission for pile cap sheer plate	09-Oct-15 A	22-Oct-15 A	11			
3MPS.1044	Consultant/CA Review & Approval	23-Oct-15 A	28-Nov-15	11			14
3MPS.1045	Method statement for ELS (M+ & DCS)	12-Oct-15 A	19-Oct-15 A	6			
3MPS.1046	Consultant/CA Review & Approval	20-Oct-15 A	30-Nov-15	6			8
3MPS.1047	Method statement for B2 structure (M+ & DCS)	20-Oct-15 A	15-Dec-15	18			13
3MPS.1048	Consultant/CA Review & Approval	16-Dec-15	29-Dec-15	11			13
3MPS.1049	Method statement for B1 structure (M+ & DCS)	28-Nov-15	25-Dec-15	22			312
3MPS.1050	Consultant/CA Review & Approval	25-Dec-15	08-Jan-16	11			312
3MPS.1051	Falsework design for B1 structure (M+ & DCS)	28-Nov-15	05-Jan-16	31			303
3MPS.1052	Consultant/CA Review & Approval	05-Jan-16	19-Jan-16	11			303
3MPS.1053	Method statement for setting up TC1 &TC3	15-Nov-15 A	12-Dec-15	15			42
3MPS.1054	Consultant/CA Review & Approval	12-Dec-15	26-Dec-15	11			42
3MPS.1055	Method statements for Mega Trusses (sequence, falsework etc)	11-Dec-15	18-Jan-16	31			298
3MPS.1056	Consultant/CA Review & Approval	18-Jan-16	26-Jan-16	7			298
3MPS.1057	Material submission for Mega Trusses (welding, steel etc)	23-Oct-15 A	10-Nov-15 A	15			
3MPS.1058	Consultant/CA Review & Approval	10-Nov-15 A	03-Dec-15	11			341
3MPS.1059	Back propping design for Cranage for Mega Trusses	11-Dec-15	18-Jan-16	31			298
3MPS.1060	Consultant/CA Review & Approval	18-Jan-16	26-Jan-16	7			298
Facade Submission and Approval							
3MPS.1061	Facade Issue of preliminary work programme	28-Nov-15	28-Nov-15	1			334
3MPS.1062	Consultant/CA Review & Approval	29-Nov-15	12-Dec-15	11			334
3MPS.1063	Facade Design proposal sketches for all areas of the facade system(s)	28-Nov-15	28-Nov-15	1			334
3MPS.1064	Consultant/CA Review & Approval	29-Nov-15	12-Dec-15	11			334
3MPS.1065	Facade Programme of works including all critical milestone dates for approval and order of materials.	28-Nov-15	28-Nov-15	1			334
3MPS.1066	Consultant/CA Review & Approval	29-Nov-15	12-Dec-15	11			334
3MPS.1067	Facade Design coordintaiton with BMU	28-Nov-15	28-Nov-15	1			334
3MPS.1068	Consultant/CA Review & Approval	29-Nov-15	12-Dec-15	11			334
Essential submissions on Programme, Health and Safety, Security, Quality etc							
HSEQ & Management Plan							
3MPS.1081	Prepare and submission - Health and safety plan	26-Sep-15 A	02-Nov-15 A	30			
3MPS.1082	Consultant/CA Review & Approval	02-Nov-15 A	30-Nov-15	11			343
3MPS.1083	Prepare and submission - Environmental management plan	26-Sep-15 A	02-Nov-15 A	30			
3MPS.1084	Consultant/CA Review & Approval	02-Nov-15 A	16-Nov-15 A	11			
3MPS.1085	Prepare and submission - Quality management plan	26-Sep-15 A	02-Nov-15 A	30			
3MPS.1086	Consultant/CA Review & Approval	02-Nov-15 A	30-Nov-15	11			343
Temporary services and site facilities							
Site Establishment & Temporary Facilities							
3MPS.1003	Hoarding Handover and Modification Works	28-Nov-15	04-Jan-16	30			316
3MPS.1004	WSD - Apply for temporary water supply (Bachy)	02-Oct-15 A	30-Dec-15	72			319
Procurement							
3MPS.1006	Install and carry out dewatering	26-Sep-15 A	15-Dec-15	20			277
M+.20 Construction Works (Excavation & ELS)							
M+ AEL North - North of AEL							
Stage 1							
Stage 1 - Site Formation (Area A)							

M+3 Months Rolling Programme

Date	Revision	Checked	Approved
22-Oct-15	MOBP/3MRP Prog Rev B	Edgar Payos	Leo Harnett
02-Dec-15	3MRP Rev B (1st Draft)	Edgar Payos	Leo Harnett

Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
3MSS.1000	Dewatering Commence	02-Dec-15		0			7
3MSS.1000.1	Excavate +5.0Mpd to +1.8mPD for B2 Slab Formation Level (GL C'-H'/7'-6') - Portion A1	02-Nov-15 A	14-Nov-15 A	4			
3MSS.1000.11	Excavate +5.0Mpd to +1.8mPD for B2 battered slope (GL A'-J'/4'-6') - Portion A1	03-Nov-15 A	14-Nov-15 A	4			
3MSS.1000.21	Excavate +5.0Mpd to +1.8mPD for B2 Slab Formation Level (GL C'-G'/2-7') - Portion A2	04-Nov-15 A	14-Nov-15 A	4			
3MSS.1000.31	Excavate +5.0Mpd to +1.8mPD for B2 battered slope (GL B'-C'/2-4') - Portion A2	05-Nov-15 A	14-Nov-15 A	4			
3MSS.1000.41	Excavate +5.0Mpd to +1.8mPD for B2 Slab Formation Level (GL C'-F'/2-4) - Portion A3	06-Nov-15 A	14-Nov-15 A	4			
3MSS.1000.51	Excavate +5.0Mpd to +1.8mPD for B2 battered slope (GL I'-E'/6'-4) - Portion A3	09-Nov-15 A	14-Nov-15 A	4			
3MSS.1002	Excavate +1.8mPD to _2.30mPD for B2 Slab Formation Level (GL C'-H'/7'-6') - Portion A1	05-Dec-15	10-Dec-15	5	5,475m3	2 machines @ 700m3/day	0
3MSS.1003	Excavate +1.8mPD to _2.30mPD for B2 battered slope (GL A'-J'/4'-6') - Portion A1	08-Dec-15	12-Dec-15	5	4,215m3	2 machines @ 700m3/day	0
3MSS.1004	Excavate +1.8mPD to _2.30mPD for B2 Slab Formation Level (GL C'-G'/2-7') - Portion A2	10-Dec-15	15-Dec-15	5	4,073m3	2 machines @ 700m3/day	10
3MSS.1005	Excavate +1.8mPD to _2.30mPD for B2 battered slope (GL B'-C'/2-4') - Portion A2	12-Dec-15	17-Dec-15	5	1,697m3	2 machines @ 700m3/day	10
3MSS.1006	Excavate +1.8mPD to _2.30mPD for B2 Slab Formation Level (GL C'-F'/2-4) - Portion A3	15-Dec-15	19-Dec-15	5	1,365m3	2 machines @ 700m3/day	10
3MSS.1007	Excavate +1.8mPD to _2.30mPD for B2 battered slope (GL I'-E'/6'-4) - Portion A3	16-Dec-15	21-Dec-15	5	3,996m3	2 machines @ 700m3/day	19
Stage 1 - Pile Cap Construction (Area A)							
Portion A1							
3MSS.1010	Local Excavation for Pile caps (-3.3mPD)- (GL C'-H'/7'-6') - Portion A1 -CPC40(7),41(7),42-2(3),42(7),43(7),40(7)	12-Dec-15	17-Dec-15	4	140m3	1 machine @ 190m3/day	0
3MSS.1011	Excavation works for Pile - CPC 40 (07)	12-Dec-15	15-Dec-15	2	24.5m3	1 machine @ 190m3/day	0
3MSS.1012	Excavation works for Pile -CPC 44 (07)	12-Dec-15	15-Dec-15	2	24.5m3	1 machine @ 190m3/day	0
3MSS.1013	Excavation works for Pile -CPC 41 (07)	12-Dec-15	15-Dec-15	2	24.5m3	1 machine @ 190m3/day	0
3MSS.1014	Excavation works for Pile - CPC 43 (07)	15-Dec-15	17-Dec-15	2	24.5m3	1 machine @ 190m3/day	0
3MSS.1015	Excavation works for Pile - CPC 42 (07)	15-Dec-15	17-Dec-15	2	24.5m3	1 machine @ 190m3/day	0
3MSS.1016	Excavation works for Pile - CPC 42-2 (03)	16-Dec-15	17-Dec-15	1	14.34m3	1 machine @ 190m3/day	0
3MSS.1017	Rebar Installation for Pile cap- Portion A1	15-Dec-15	18-Dec-15	3	123T	5 men @ 0.9T/man/day	0
3MSS.1018	Rebar Installation - CPC 40 (07)	15-Dec-15	16-Dec-15	1	22.05T		0
3MSS.1019	Rebar Installation - CPC 44 (07)	15-Dec-15	16-Dec-15	1	22.05T		0
3MSS.1020	Rebar Installation - CPC 41 (07)	15-Dec-15	16-Dec-15	1	22.05T		0
3MSS.1021	Rebar Installation - CPC 43 (07)	17-Dec-15	18-Dec-15	1	22.05T		0
3MSS.1022	Rebar Installation - CPC 42 (07)	17-Dec-15	18-Dec-15	1	22.05T		0
3MSS.1023	Rebar Installation - CPC 42-2 (03)	17-Dec-15	18-Dec-15	1	12.90T		0
3MSS.1024	Pile cap side formworks - Portion A1	16-Dec-15	21-Dec-15	4	162m2	2 men @ 22m2/d/man	0
3MSS.1025	Pile cap side formwork - CPC 40 (07)	16-Dec-15	18-Dec-15	2	28m3		0
3MSS.1026	Pile cap side formwork - CPC 44 (07)	16-Dec-15	18-Dec-15	2	28m3		0
3MSS.1027	Pile cap side formwork - CPC 41 (07)	16-Dec-15	18-Dec-15	2	28m3		0
3MSS.1028	Pile cap side formwork - CPC 43 (07)	18-Dec-15	21-Dec-15	2	28m3		0
3MSS.1029	Pile cap side formwork - CPC 42 (07)	18-Dec-15	21-Dec-15	2	28m3		0
3MSS.1030	Pile cap side formwork - CPC 42-2 (03)	18-Dec-15	21-Dec-15	2	21.44m3		0
3MSS.1031	Portion A1 concrete pouring for Pile cap	18-Dec-15	23-Dec-15	3	140m3		0
3MSS.1032	concrete pouring - CPC 40 (07)	18-Dec-15	19-Dec-15	1	24.5m3		2
3MSS.1033	concrete pouring - CPC 44 (07)	18-Dec-15	19-Dec-15	1	24.5m3		2
3MSS.1034	concrete pouring - CPC 41 (07)	18-Dec-15	19-Dec-15	1	24.5m3		2
3MSS.1035	concrete pouring - CPC 43 (07)	21-Dec-15	23-Dec-15	1	24.5m3		0
3MSS.1036	concrete pouring - CPC 42 (07)	21-Dec-15	23-Dec-15	1	24.5m3		0
3MSS.1037	concrete pouring - CPC 42-2 (03)	21-Dec-15	23-Dec-15	1	14.34m3		0
Portion A2							
3MSS.1038	Local Excavation for Pile caps (-3.3mPD) - (GL C'-G'/2-7') - Portion A2- CPC49(2),50(2), PC 05(3),06(4),07(4),08(	19-Dec-15	23-Dec-15	2	64m3	1 machine @ 190m3/day	10
3MSS.1039	Excavation works for Pile - CPC 49 (02)	19-Dec-15	21-Dec-15	1	5.6m3	1 machine @ 190m3/day	10
3MSS.1040	Excavation works for Pile - CPC 50 (02)	19-Dec-15	21-Dec-15	1	5.6m3	1 machine @ 190m3/day	10
3MSS.1041	Excavation works for Pile - PC 05 (03)	19-Dec-15	21-Dec-15	1	14.34m3	1 machine @ 190m3/day	10
3MSS.1042	Excavation works for Pile - PC 08 (02)	21-Dec-15	23-Dec-15	1	5.6m3	1 machine @ 190m3/day	10
3MSS.1043	Excavation works for Pile - PC 06 (04)	21-Dec-15	23-Dec-15	1	15.68m3	1 machine @ 190m3/day	10
3MSS.1044	Excavation works for Pile - PC 07 (04)	21-Dec-15	23-Dec-15	1	15.68m3	1 machine @ 190m3/day	10
3MSS.1045	Rebar Installation for Pile cap- Portion A2	21-Dec-15	24-Dec-15	2	44T	5 men @ 0.9T/man/day	10
3MSS.1046	Rebar Installation - CPC 49 (02)	21-Dec-15	23-Dec-15	1	5.04T		10
3MSS.1047	Rebar Installation - CPC 50 (02)	21-Dec-15	23-Dec-15	1	5.04T		10
3MSS.1048	Rebar Installation - PC 05 (03)	21-Dec-15	23-Dec-15	1	12.9T		10
3MSS.1049	Rebar Installations - PC 08 (02)	23-Dec-15	24-Dec-15	1	5.04T		10
3MSS.1050	Rebar Installation - PC 06 (04)	23-Dec-15	24-Dec-15	1	14.11T		10
3MSS.1051	Rebar Installation - PC 07 (04)	23-Dec-15	24-Dec-15	1	14.11T		10
3MSS.1052	Pile cap side formworks - Portion A2	23-Dec-15	28-Dec-15	2	114m2	2 men @ 22m2/d/man	10
3MSS.1053	Pile cap side formworks - CPC 49 (02)	23-Dec-15	24-Dec-15	1	15.2m2		10
3MSS.1054	Pile cap side formworks - CPC 50 (02)	23-Dec-15	24-Dec-15	1	15.2m2		10
3MSS.1055	Pile cap side formworks - PC 05 (03)	23-Dec-15	24-Dec-15	1	21.44m2		10
3MSS.1056	Pile cap side formworks - PC 08 (02)	24-Dec-15	28-Dec-15	1	15.2m2		10
3MSS.1057	Pile cap side formworks - PC 06 (04)	24-Dec-15	28-Dec-15	1	22.4m2		10
3MSS.1058	Pile cap side formworks - PC 07 (04)	24-Dec-15	28-Dec-15	1	22.4m2		10
3MSS.1059	Portion A2 concrete pouring	28-Dec-15	29-Dec-15	1	64M3		10
3MSS.1060	Concrete Pouring - CPC 49 (02)	28-Dec-15	29-Dec-15	1	5.6m3		10
3MSS.1061	Concrete Pouring - CPC 50 (02)	28-Dec-15	29-Dec-15	1	5.6m3		10
3MSS.1062	Concrete Pouring - PC 05 (03)	28-Dec-15	29-Dec-15	1	14.34m3		10
3MSS.1063	Concrete Pouring - PC 08 (02)	28-Dec-15	29-Dec-15	1	5.6m3		10
3MSS.1064	Concrete Pouring - PC 06 (04)	28-Dec-15	29-Dec-15	1	15.68m3		10
3MSS.1065	Concrete Pouring - PC 07 (04)	28-Dec-15	29-Dec-15	1	15.68m3		10
Portion A3							
3MSS.1066	Local Excavation for Pile caps (-3.3mPD) - (GL C'-F'/2-4) - Portion A3 -PC17(1),18(1),19(2),20(7),21(2),33(2)	23-Dec-15	24-Dec-15	1	46m3	1 machine @ 190m3/day	22
3MSS.1067	Excavation works for Pile - PC 21 (02)	23-Dec-15	24-Dec-15	1	5.6m3	1 machine @ 190m3/day	17
3MSS.1068	Excavation works for Pile - PC 33 (02)	23-Dec-15	24-Dec-15	1	5.6m3	1 machine @ 190m3/day	17
3MSS.1069	Excavation works for Pile - PC 20 (07)	23-Dec-15	24-Dec-15	1	25m3	1 machine @ 190m3/day	17
3MSS.1070	Excavation works for Pile - PC 19 (02)	23-Dec-15	24-Dec-15	1	5.6m3	1 machine @ 190m3/day	22
3MSS.1071	Excavation works for Pile - PC 18 (01)	23-Dec-15	24-Dec-15	1	2m3	1 machine @ 190m3/day	22
3MSS.1072	Excavation works for Pile - PC 17 (01)	23-Dec-15	24-Dec-15	1	2m3	1 machine @ 190m3/day	22
3MSS.1073	Rebar Installation - Portion A3	24-Dec-15	02-Jan-16	5	41T	5 men @ 0.9T/man/day	18
3MSS.1074	Rebar /Earthing Installation - PC 21 (02)	24-Dec-15	28-Dec-15	1	5.04T	-do-	17
3MSS.1076	Rebar Installation - PC 33 (02)	24-Dec-15	28-Dec-15	1	5.04T	-do-	17
3MSS.1077	Rebar Installation - PC 20 (07)	24-Dec-15	02-Jan-16	5	22.05T	-do-	17
3MSS.1078	Rebar Installation - PC 19 (02)	31-Dec-15	02-Jan-16	1	5.04T	-do-	18



M+3 Months Rolling Programme

Date	Revision	Checked	Approved
22-Oct-15	MOBP/3MRP Prog Rev B	Edgar Payos	Leo Harnett
02-Dec-15	3MRP Rev B (1st Draft)	Edgar Payos	Leo Harnett

Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
3MSS.1079	Rebar /Earthing Installation - PC 18 (01)	31-Dec-15	02-Jan-16	1	1.8T	-do-	18
3MSS.1081	Rebar Installation - PC 17 (01)	31-Dec-15	02-Jan-16	1	1.8T	-do-	18
3MSS.1082	Pile cap side formworks - Portion A3	28-Dec-15	05-Jan-16	6	91m2	2 men @ 22m2/d/man	17
3MSS.1083	Pile cap side formworks - PC 21 (02)	28-Dec-15	29-Dec-15	1	15.2m2	-do-	21
3MSS.1084	Pile cap side formworks -PC 33 (02)	28-Dec-15	29-Dec-15	1	15.2m2	-do-	21
3MSS.1085	Pile cap side formworks -PC 20 (07)	02-Jan-16	05-Jan-16	2	28m2	-do-	17
3MSS.1086	Pile cap side formworks -PC 19 (02)	04-Jan-16	05-Jan-16	1	15.2m2	-do-	17
3MSS.1087	Pile cap side formworks -PC 18 (01)	04-Jan-16	05-Jan-16	1	8m2	-do-	17
3MSS.1088	Pile cap side formworks -PC 17 (01)	04-Jan-16	05-Jan-16	1	8m2	-do-	17
3MSS.1089	Portion A3 concrete pouring	05-Jan-16	06-Jan-16	1	46m3		17
3MSS.1090	Concrete Pouring - PC 21 (02)	05-Jan-16	06-Jan-16	1	5.6m3	-do-	17
3MSS.1091	Concrete Pouring - PC 33 (02)	05-Jan-16	06-Jan-16	1	5.6m3	-do-	17
3MSS.1092	Concrete Pouring - PC 20 (07)	05-Jan-16	06-Jan-16	1	25m3	-do-	17
3MSS.1093	Concrete Pouring - PC 19 (02)	05-Jan-16	06-Jan-16	1	5.6m3	-do-	17
3MSS.1094	Concrete Pouring - PC 18 (01)	05-Jan-16	06-Jan-16	1	2m3	-do-	17
3MSS.1095	Concrete Pouring - PC 17 (01)	05-Jan-16	06-Jan-16	1	2m3	-do-	17
Manhole(Type 1,25,19,38,2,14) - Portion A							
3MSS.1100	Excavation (Type 1) - GL 6'7"-D'E'	19-Dec-15	21-Dec-15	1	5m3	1 machine @ 190m3/day	7
3MSS.1101	Rebar Installation (Type 1) - GL 6'7"-D'E'	21-Dec-15	23-Dec-15	1			7
3MSS.1102	Formworks (Type 1) - GL 6'7"-D'E'	23-Dec-15	24-Dec-15	1			7
3MSS.1103	Concrete Pouring (Type 1) - GL 6'7"-D'E'	24-Dec-15	28-Dec-15	1			7
3MSS.1104	Excavation (Type 25) - GL 6'7"-D'E'	21-Dec-15	23-Dec-15	1	5m3	1 machine @ 190m3/day	7
3MSS.1105	Rebar Installation(Type 25) - GL 6'7"-D'E'	23-Dec-15	24-Dec-15	1			7
3MSS.1106	Formworks (Type 25) - GL 6'7"-D'E'	24-Dec-15	28-Dec-15	1			7
3MSS.1107	Concrete Pouring (Type 25) - GL 6'7"-D'E'	28-Dec-15	29-Dec-15	1			7
3MSS.1108	Excavation (Type 19) - GL 7'-1/D-'E'	29-Dec-15	30-Dec-15	1	5m3	1 machine @ 190m3/day	13
3MSS.1109	Rebar Installation (Type 19) - GL 7'-1/D-'E'	30-Dec-15	31-Dec-15	1			13
3MSS.1110	Formworks (Type 19) - GL 7'-1/D-'E'	31-Dec-15	02-Jan-16	1			13
3MSS.1111	Concrete Pouring (Type 19) - GL 7'-1/D-'E'	02-Jan-16	02-Jan-16	0			14
3MSS.1112	Excavation (Type 38) - GL 1/C-'D'	30-Dec-15	31-Dec-15	1	5m3	1 machine @ 190m3/day	13
3MSS.1113	Rebar Installation (Type 38) - GL 1/C-'D'	31-Dec-15	02-Jan-16	1			13
3MSS.1114	Formworks (Type 38) - GL 1/C-'D'	02-Jan-16	04-Jan-16	1			13
3MSS.1115	Concrete Pouring (Type 38) - GL 1/C-'D'	04-Jan-16	04-Jan-16	0			13
3MSS.1116	Excavation (Type 2) - GL 2/D-'E'	06-Jan-16	07-Jan-16	1	5m3	1 machine @ 190m3/day	19
3MSS.1117	Rebar Installation (Type 2) - GL 2/D-'E'	07-Jan-16	08-Jan-16	1			19
3MSS.1118	Formworks (Type 2) - GL 2/D-'E'	08-Jan-16	09-Jan-16	1			19
3MSS.1119	Concrete Pouring (Type 2) - GL 2/D-'E'	09-Jan-16	11-Jan-16	1			19
3MSS.1120	Excavation (Type 14) - GL 2-3/E'-F'	07-Jan-16	08-Jan-16	1	5m3	1 machine @ 190m3/day	19
3MSS.1121	Rebar Installation (Type 14) - GL 2-3/E'-F'	08-Jan-16	09-Jan-16	1			19
3MSS.1122	Formworks (Type 14) - GL 2-3/E'-F'	09-Jan-16	11-Jan-16	1			19
3MSS.1123	Concrete Pouring (Type 14) - GL 2-3/E'-F'	11-Jan-16	12-Jan-16	1			19
Stage 1 - Site Formation (Area B)							
3MSS.1124	Dewatering Commence	02-Dec-15		0			17
3MSS.1125	Initial Site formation	02-Nov-15 A	14-Nov-15 A	1			
3MSS.1125.1	Excavate +5.0Mpd to +1.8mPD for B2 Slab Formation Level (GL A-K'/9-3)	03-Nov-15 A	14-Nov-15 A	4			
3MSS.1125.11	Excavate +5.0Mpd to +1.8mPD for B2 battered slope (GL A/2-10')	04-Nov-15 A	14-Nov-15 A	4			
3MSS.1125.21	Excavate +5.0Mpd to +1.8mPD for B2 Slab Formation Level (GL K'-A'/8-3)	05-Nov-15 A	14-Nov-15 A	4			
3MSS.1125.31	Excavate +5.0Mpd to +1.8mPD for B2 battered slope (GL A-B'/3-7')	06-Nov-15 A	14-Nov-15 A	4			
3MSS.1125.41	Excavate +5.0Mpd to +1.8mPD for B2 Slab Formation Level (GL A'-C/2-6)	07-Nov-15 A	14-Nov-15 A	4			
3MSS.1125.51	Excavate +5.0Mpd to +1.8mPD battered slope (GL A-E/10-4)	09-Nov-15 A	14-Nov-15 A	4			
3MSS.1126	Excavate +1.8mPD to -2.3mPD for B2 Slab Formation Level (GL A-K'/9-3)	08-Dec-15	14-Dec-15	5			17
3MSS.1127	Excavate +1.8mPD to -2.3mPD for B2 battered slope (GL A/2-10')	09-Dec-15	15-Dec-15	5	4,215m3	2 machines @ 700m3/day	17
3MSS.1128	Excavate +1.8mPD to -2.3mPD for B2 Slab Formation Level (GL K'-A'/8-3)	11-Dec-15	17-Dec-15	5	3,723m3	2 machines @ 700m3/day	29
3MSS.1129	Excavate +1.8mPD to -2.3mPD for B2 battered slope (GL A-B'/3-7')	14-Dec-15	19-Dec-15	5	1,697m3	2 machines @ 700m3/day	29
3MSS.1130	Excavate +1.8mPD to -2.3mPD for B2 Slab Formation Level (GL A'-C/2-6)	16-Dec-15	23-Dec-15	5	7,665m3	2 machines @ 700m3/day	29
3MSS.1131	Excavate +1.8mPD to -2.3mPD for B2 battered slope (GL A-E/10-4)	17-Dec-15	24-Dec-15	5	3,996m3	2 machines @ 700m3/day	47
Stage 1 - Pile Cap Construction (Area B)							
Portion B1							
3MSS.1132	Local Excavation for Pile caps (-3.3mPD)- (GL A-K'/9-3) - Portion B1 - PC 39(2),50(2),59(2) ; PC72 - 33%	17-Dec-15	21-Dec-15	3	391m3	1 machine @ 190m3/day	29
3MSS.1133	Excavation works for Pile - PC 72 - 33% (S1)	15-Dec-15	17-Dec-15	2	380m3	1 machine @ 190m3/day	17
3MSS.1134	Excavation works for Pile - PC 39 (02)	17-Dec-15	21-Dec-15	3	5.6m3	1 machine @ 190m3/day	17
3MSS.1135	Excavation works for Pile - PC 59 (02)	17-Dec-15	21-Dec-15	3	5.6m3	1 machine @ 190m3/day	29
3MSS.1136	Excavation works for Pile - PC 50 (02)	17-Dec-15	21-Dec-15	3	5.6m3	1 machine @ 190m3/day	29
3MSS.1137	Rebar Installation - Portion B1	21-Dec-15	23-Jan-16	25	355T	5 men @ 0.9T/man/day	17
3MSS.1138	Rebar Installation - PC 72 - 33% (s1)	21-Dec-15	23-Jan-16	25	341T		17
3MSS.1139	Rebar /Earthing Installation - PC 39 (02)	21-Dec-15	23-Dec-15	1	5.04T		36
3MSS.1140	Rebar /Earthing Installation -PC 59 (02)	21-Dec-15	23-Dec-15	1	5.04T		36
3MSS.1141	Rebar /Earthing Installation - PC 50 (02)	23-Dec-15	24-Dec-15	1	5.04T		36
3MSS.1142	Pile cap side formworks - Portion B1	23-Dec-15	26-Jan-16	26	129m2	2 men @ 22m2/d/man	17
3MSS.1143	Pile cap side formworks -PC 72 - 33% (s1)	23-Jan-16	26-Jan-16	2	82m2		17
3MSS.1144	Pile cap side formworks - PC 39 (02)	23-Dec-15	24-Dec-15	1	15.2m2		37
3MSS.1145	Pile cap side formworks - PC 59 (02)	23-Dec-15	24-Dec-15	1	15.2m2		37
3MSS.1146	Pile cap side formworks - PC 50 (02)	24-Dec-15	28-Dec-15	1	15.2m2		36
3MSS.1147	Portion B1 concrete pouring	24-Dec-15	27-Jan-16	26	391m3		17
3MSS.1148	concrete pouring - PC 72 - 33% (s1)	26-Jan-16	27-Jan-16	1	380m3		17
3MSS.1149	concrete pouring - PC 39 (02)	24-Dec-15	28-Dec-15	1	5.6m3		37
3MSS.1150	concrete pouring - PC 59 (02)	24-Dec-15	28-Dec-15	1	5.6m3		37
3MSS.1151	concrete pouring - PC 50 (02)	28-Dec-15	29-Dec-15	1	5.6m3		36
Portion B2							
3MSS.1152	Local Excavation for Pile caps (-3.3mPD)- (GL K'-A'/8-3) - Portion B2 - PC 40(7),51(2),60(2)	21-Dec-15	24-Dec-15	2	36m3	1 machine @ 190m3/day	29
3MSS.1153	Excavation works for Pile - PC 60 (02)	21-Dec-15	23-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1154	Excavation works for Pile - PC 40 (07)	21-Dec-15	24-Dec-15	2	24.5m3	1 machine @ 190m3/day	29
3MSS.1155	Excavation works for Pile - PC 51 (02)	23-Dec-15	24-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1156	Rebar Installation - Portion B2	23-Dec-15	05-Jan-16	8	33T	5 men @ 0.9T/man/day	35

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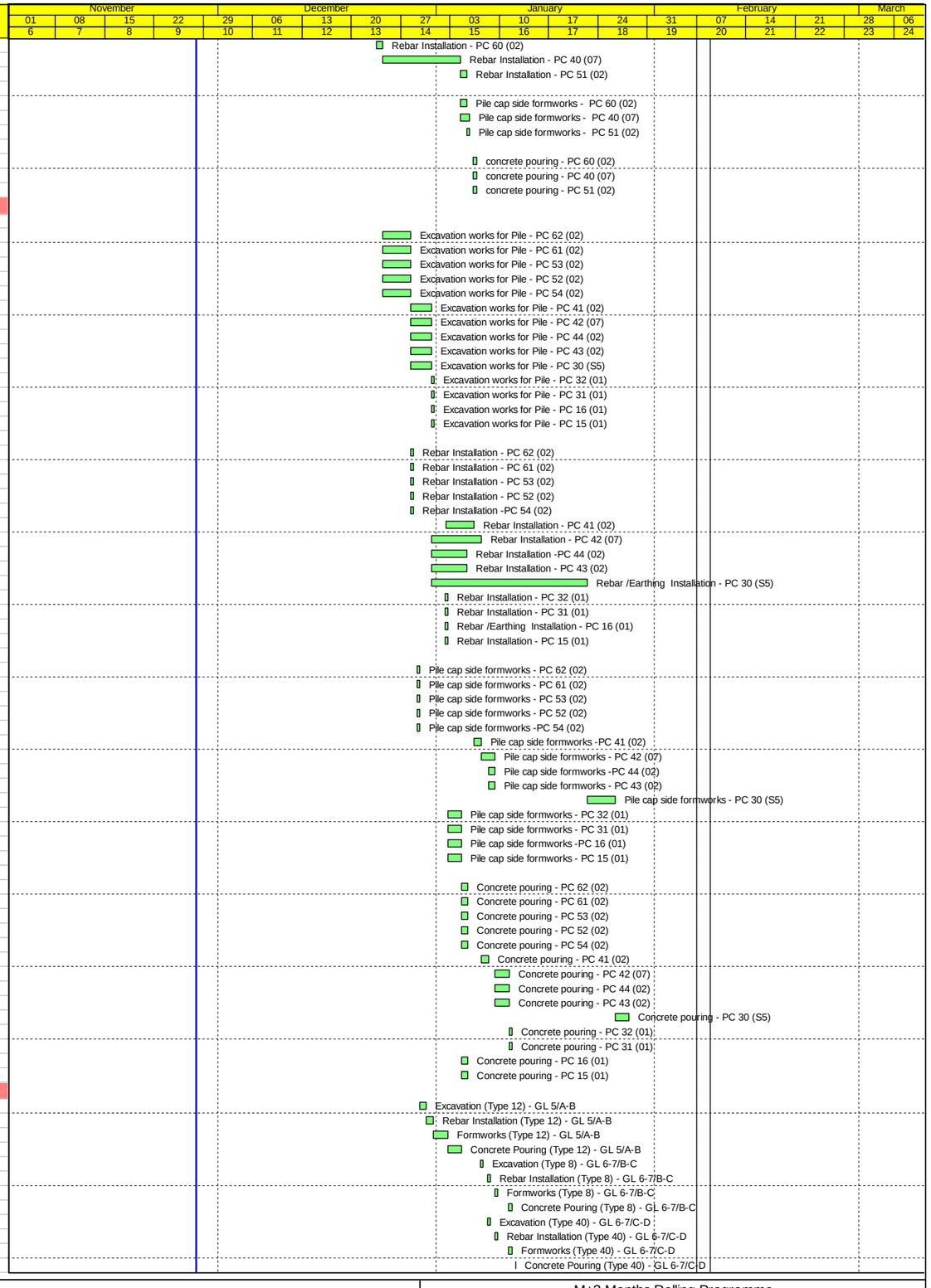
Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
3MSS.1157	Rebar Installation - PC 60 (02)	23-Dec-15	24-Dec-15	1	5.04T		49
3MSS.1158	Rebar Installation - PC 40 (07)	24-Dec-15	04-Jan-16	6	22.05T		35
3MSS.1159	Rebar Installation - PC 51 (02)	04-Jan-16	05-Jan-16	1	5.04T		35
3MSS.1160	Pile cap side formworks - Portion B2	04-Jan-16	05-Jan-16	2	59m2	2 men @ 22m2/d/man	35
3MSS.1161	Pile cap side formworks - PC 60 (02)	04-Jan-16	05-Jan-16	1	15.2m2		43
3MSS.1162	Pile cap side formworks - PC 40 (07)	04-Jan-16	05-Jan-16	2	28m2		35
3MSS.1163	Pile cap side formworks - PC 51 (02)	05-Jan-16	05-Jan-16	1	15.2m2		35
3MSS.1164	Portion B2 concrete pouring	06-Jan-16	06-Jan-16	1	36m3		35
3MSS.1165	concrete pouring - PC 60 (02)	06-Jan-16	06-Jan-16	1	5.6m3		42
3MSS.1166	concrete pouring - PC 40 (07)	06-Jan-16	06-Jan-16	1	24.5m3		35
3MSS.1167	concrete pouring - PC 51 (02)	06-Jan-16	06-Jan-16	1	5.6m3		35
Portion B3							
3MSS.1168	Local Exc'n for Pile (GL A'-C/2-6) - Portion B3 - PC 41(2),52(2),61(2),61(1),16(6),30(s5),42(2),62(2),31(1),32(1),4	24-Dec-15	31-Dec-15	5	219m3	1 machine @ 190m3/day	44
3MSS.1169	Excavation works for Pile - PC 62 (02)	24-Dec-15	28-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1170	Excavation works for Pile - PC 61 (02)	24-Dec-15	28-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1171	Excavation works for Pile - PC 53 (02)	24-Dec-15	28-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1172	Excavation works for Pile - PC 52 (02)	24-Dec-15	28-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1173	Excavation works for Pile - PC 54 (02)	24-Dec-15	28-Dec-15	1	5.6m3	1 machine @ 190m3/day	29
3MSS.1174	Excavation works for Pile - PC 41 (02)	28-Dec-15	31-Dec-15	3	5.6m3	1 machine @ 190m3/day	29
3MSS.1175	Excavation works for Pile - PC 42 (07)	28-Dec-15	31-Dec-15	3	24.5m3	1 machine @ 190m3/day	29
3MSS.1176	Excavation works for Pile - PC 44 (02)	28-Dec-15	31-Dec-15	3	5.6m3	1 machine @ 190m3/day	29
3MSS.1177	Excavation works for Pile - PC 43 (02)	28-Dec-15	31-Dec-15	3	5.6m3	1 machine @ 190m3/day	29
3MSS.1178	Excavation works for Pile - PC 30 (S5)	28-Dec-15	31-Dec-15	3	142m3	1 machine @ 190m3/day	29
3MSS.1179	Excavation works for Pile - PC 32 (01)	31-Dec-15	31-Dec-15	1	2m3	1 machine @ 190m3/day	44
3MSS.1180	Excavation works for Pile - PC 31 (01)	31-Dec-15	31-Dec-15	1	2m3	1 machine @ 190m3/day	44
3MSS.1181	Excavation works for Pile - PC 16 (01)	31-Dec-15	31-Dec-15	1	2m3	1 machine @ 190m3/day	44
3MSS.1182	Excavation works for Pile - PC 15 (01)	31-Dec-15	31-Dec-15	1	2m3	1 machine @ 190m3/day	44
3MSS.1183	Rebar Installation - Portion B3	28-Dec-15	02-Jan-16	5	176T	5 men @ 0.9T/man/day	44
3MSS.1184	Rebar Installation - PC 62 (02)	28-Dec-15	28-Dec-15	1	5.04T		48
3MSS.1185	Rebar Installation - PC 61 (02)	28-Dec-15	28-Dec-15	1	5.04T		48
3MSS.1186	Rebar Installation - PC 53 (02)	28-Dec-15	28-Dec-15	1	5.04T		49
3MSS.1187	Rebar Installation - PC 52 (02)	28-Dec-15	28-Dec-15	1	5.04T		49
3MSS.1188	Rebar Installation -PC 54 (02)	28-Dec-15	28-Dec-15	1	5.04T		49
3MSS.1189	Rebar Installation - PC 41 (02)	02-Jan-16	06-Jan-16	3	5.04T		43
3MSS.1190	Rebar Installation - PC 42 (07)	31-Dec-15	07-Jan-16	5	22.05T		42
3MSS.1191	Rebar Installation -PC 44 (02)	31-Dec-15	05-Jan-16	3	5.04T		45
3MSS.1192	Rebar Installation - PC 43 (02)	31-Dec-15	05-Jan-16	3	5.04T		45
3MSS.1193	Rebar /Earthing Installation - PC 30 (S5)	31-Dec-15	22-Jan-16	18	128.55T		29
3MSS.1194	Rebar Installation - PC 32 (01)	02-Jan-16	02-Jan-16	1	1.8T		44
3MSS.1195	Rebar Installation - PC 31 (01)	02-Jan-16	02-Jan-16	1	1.8T		44
3MSS.1196	Rebar /Earthing Installation - PC 16 (01)	02-Jan-16	02-Jan-16	1	1.8T		44
3MSS.1197	Rebar Installation - PC 15 (01)	02-Jan-16	02-Jan-16	1	1.8T		44
3MSS.1198	Pile cap side formworks - Portion B3	29-Dec-15	04-Jan-16	5	169m2	2 men @ 22m2/d/man	44
3MSS.1199	Pile cap side formworks - PC 62 (02)	29-Dec-15	29-Dec-15	1	15.2m2		48
3MSS.1200	Pile cap side formworks - PC 61 (02)	29-Dec-15	29-Dec-15	1	15.2m2		48
3MSS.1201	Pile cap side formworks - PC 53 (02)	29-Dec-15	29-Dec-15	1	15.2m2		49
3MSS.1202	Pile cap side formworks - PC 52 (02)	29-Dec-15	29-Dec-15	1	15.2m2		49
3MSS.1203	Pile cap side formworks -PC 54 (02)	29-Dec-15	29-Dec-15	1	15.2m2		49
3MSS.1204	Pile cap side formworks -PC 41 (02)	06-Jan-16	07-Jan-16	1	15.2m2		43
3MSS.1205	Pile cap side formworks - PC 42 (07)	07-Jan-16	09-Jan-16	2	28m2		42
3MSS.1206	Pile cap side formworks -PC 44 (02)	08-Jan-16	09-Jan-16	1	15.2m2		42
3MSS.1207	Pile cap side formworks - PC 43 (02)	08-Jan-16	09-Jan-16	1	15.2m2		42
3MSS.1208	Pile cap side formworks - PC 30 (S5)	22-Jan-16	26-Jan-16	3	69m2		29
3MSS.1209	Pile cap side formworks - PC 32 (01)	02-Jan-16	04-Jan-16	1	8m2		44
3MSS.1210	Pile cap side formworks - PC 31 (01)	02-Jan-16	04-Jan-16	1	8m2		44
3MSS.1211	Pile cap side formworks -PC 16 (01)	02-Jan-16	04-Jan-16	1	8m2		44
3MSS.1212	Pile cap side formworks - PC 15 (01)	02-Jan-16	04-Jan-16	1	8m2		44
3MSS.1213	Portion B3 concrete pouring	04-Jan-16	04-Jan-16	0	190m3		44
3MSS.1214	Concrete pouring - PC 62 (02)	04-Jan-16	05-Jan-16	1	5.6m3		45
3MSS.1215	Concrete pouring - PC 61 (02)	04-Jan-16	05-Jan-16	1	5.6m3		45
3MSS.1216	Concrete pouring - PC 53 (02)	04-Jan-16	05-Jan-16	1	5.6m3		46
3MSS.1217	Concrete pouring - PC 52 (02)	04-Jan-16	05-Jan-16	1	5.6m3		46
3MSS.1218	Concrete pouring - PC 54 (02)	04-Jan-16	05-Jan-16	1	5.6m3		46
3MSS.1219	Concrete pouring - PC 41 (02)	07-Jan-16	08-Jan-16	1	5.6m3		43
3MSS.1220	Concrete pouring - PC 42 (07)	09-Jan-16	11-Jan-16	1	25m3		42
3MSS.1221	Concrete pouring - PC 44 (02)	09-Jan-16	11-Jan-16	1	5.6m3		42
3MSS.1222	Concrete pouring - PC 43 (02)	09-Jan-16	11-Jan-16	1	5.6m3		42
3MSS.1223	Concrete pouring - PC 30 (S5)	26-Jan-16	28-Jan-16	2	142m3		29
3MSS.1224	Concrete pouring - PC 32 (01)	11-Jan-16	11-Jan-16	1	2m3		87
3MSS.1225	Concrete pouring - PC 31 (01)	11-Jan-16	11-Jan-16	1	2m3		87
3MSS.1226	Concrete pouring - PC 16 (01)	04-Jan-16	05-Jan-16	1	2m3		44
3MSS.1227	Concrete pouring - PC 15 (01)	04-Jan-16	05-Jan-16	1	2m3		44
Manhole (Type 12,8,40,1,11) - Portion B							
3MSS.1300	Excavation (Type 12) - GL 5/A-B	29-Dec-15	30-Dec-15	1	5m3	1 machine @ 190m3/day	45
3MSS.1301	Rebar Installation (Type 12) - GL 5/A-B	30-Dec-15	31-Dec-15	1			45
3MSS.1302	Formworks (Type 12) - GL 5/A-B	31-Dec-15	02-Jan-16	1			45
3MSS.1303	Concrete Pouring (Type 12) - GL 5/A-B	02-Jan-16	04-Jan-16	1			45
3MSS.1304	Excavation (Type 8) - GL 6-7/B-C	07-Jan-16	07-Jan-16	1	5m3	1 machine @ 190m3/day	42
3MSS.1305	Rebar Installation (Type 8) - GL 6-7/B-C	08-Jan-16	08-Jan-16	1			42
3MSS.1306	Formworks (Type 8) - GL 6-7/B-C	09-Jan-16	09-Jan-16	1			42
3MSS.1307	Concrete Pouring (Type 8) - GL 6-7/B-C	11-Jan-16	11-Jan-16	1			43
3MSS.1308	Excavation (Type 40) - GL 6-7/C-D	08-Jan-16	08-Jan-16	1	5m3	1 machine @ 190m3/day	42
3MSS.1309	Rebar Installation (Type 40) - GL 6-7/C-D	09-Jan-16	09-Jan-16	1			42
3MSS.1310	Formworks (Type 40) - GL 6-7/C-D	11-Jan-16	11-Jan-16	1			42
3MSS.1311	Concrete Pouring (Type 40) - GL 6-7/C-D	12-Jan-16	12-Jan-16	0			43

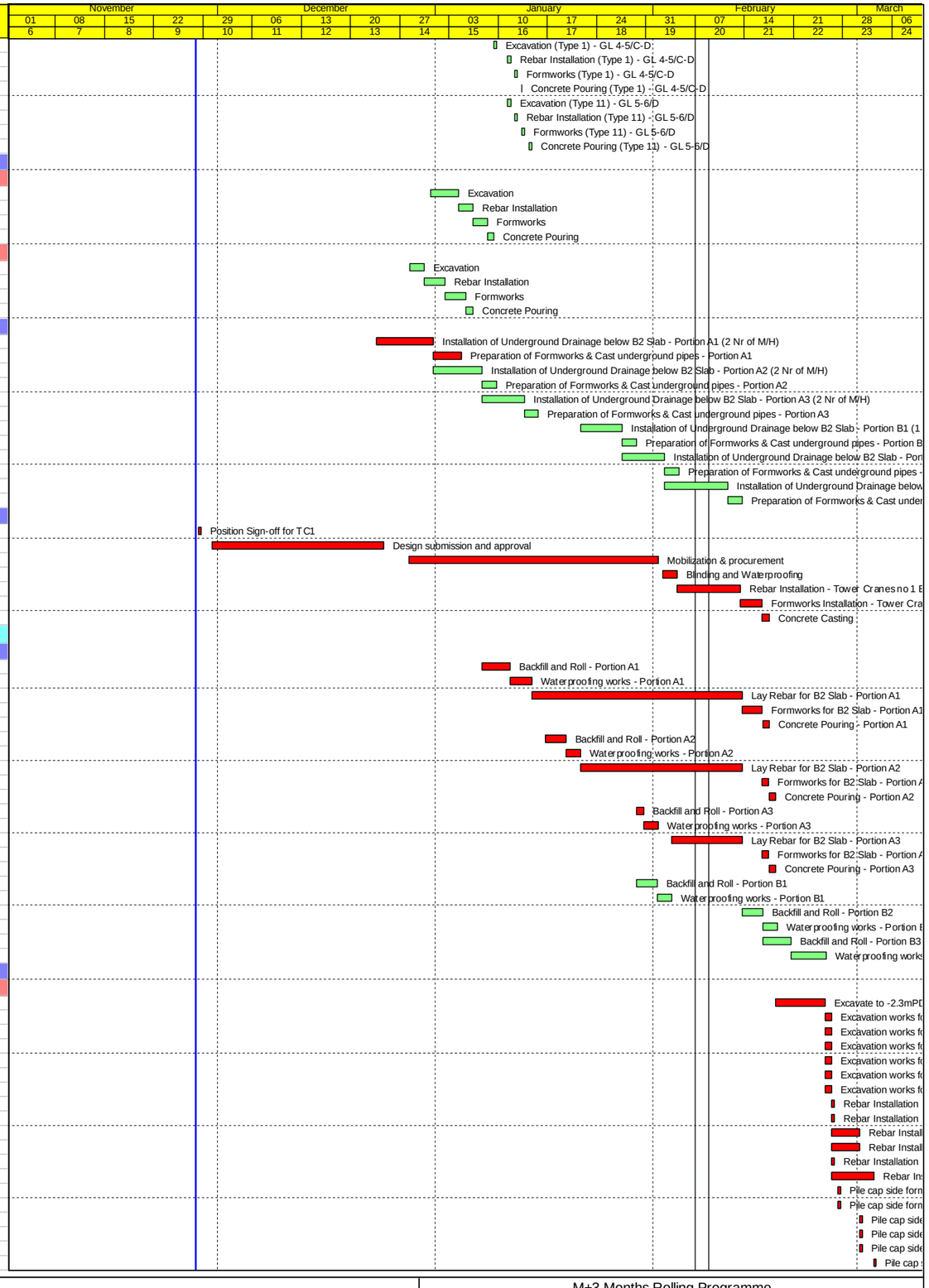


M+ 3 Months Rolling Programme (3MRP)
Revision B (1st Draft)

M+3 Months Rolling Programme

Date	Revision	Checked	Approved
22-Oct-15	MOBP/3MRP Prog Rev B	Edgar Payos	Leo Harnett
02-Dec-15	3MRP Rev B (1st Draft)	Edgar Payos	Leo Harnett

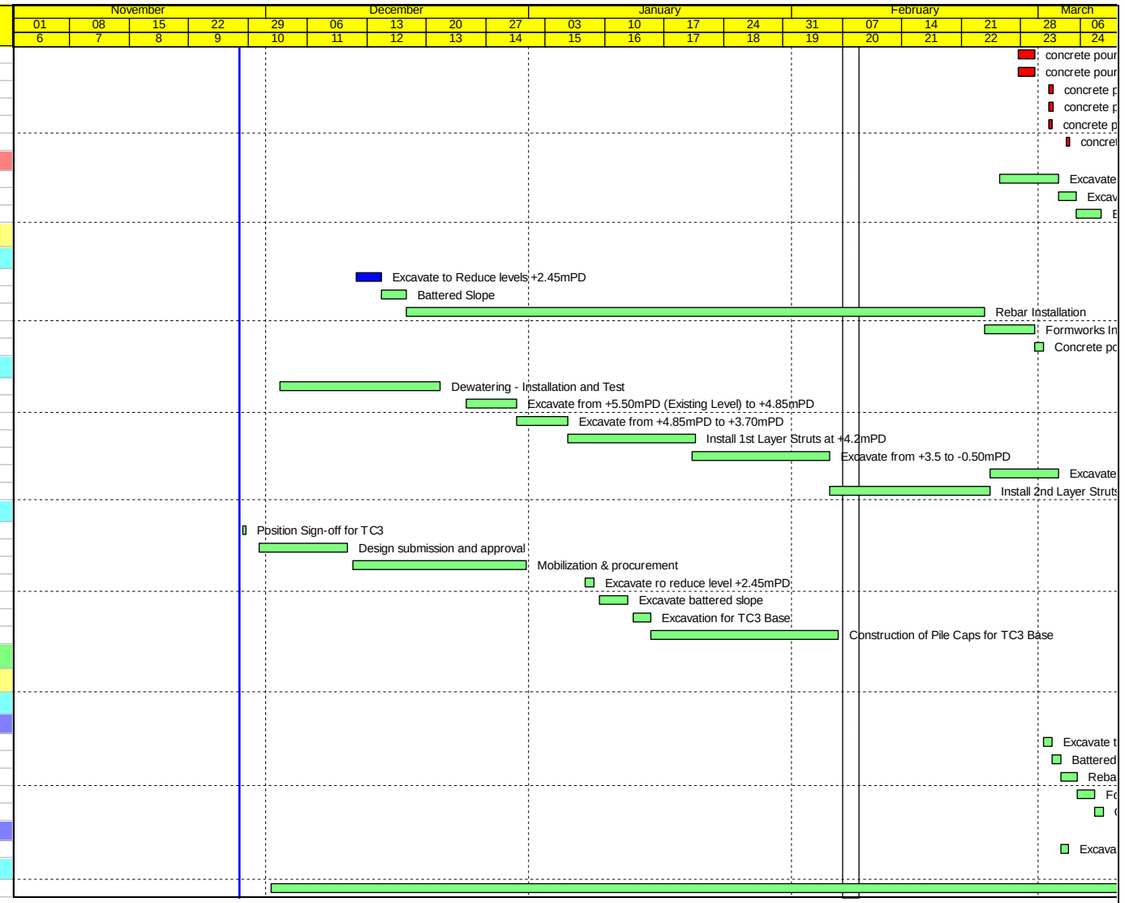
Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
3MSS.1312	Excavation (Type 1) - GL 4-5/C-D	09-Jan-16	09-Jan-16	1	5m3	1 machine @ 190m3/day	42
3MSS.1313	Rebar Installation (Type 1) - GL 4-5/C-D	11-Jan-16	11-Jan-16	1			42
3MSS.1314	Formworks (Type 1) - GL 4-5/C-D	12-Jan-16	12-Jan-16	1			42
3MSS.1315	Concrete Pouring (Type 1) - GL 4-5/C-D	13-Jan-16	13-Jan-16	0			43
3MSS.1316	Excavation (Type 11) - GL 5-6/D	11-Jan-16	11-Jan-16	1	5m3	1 machine @ 190m3/day	42
3MSS.1317	Rebar Installation (Type 11) - GL 5-6/D	12-Jan-16	12-Jan-16	1			42
3MSS.1318	Formworks (Type 11) - GL 5-6/D	13-Jan-16	13-Jan-16	1			42
3MSS.1319	Concrete Pouring (Type 11) - GL 5-6/D	14-Jan-16	14-Jan-16	1			42
Lift / Escalator Pit							
Lift Pit (GL 3-4/B'-C')							
3MSS.1320	Excavation	31-Dec-15	04-Jan-16	2	5m3	1 machine @ 190m3/day	88
3MSS.1321	Rebar Installation	04-Jan-16	06-Jan-16	2			88
3MSS.1322	Formworks	06-Jan-16	08-Jan-16	2			88
3MSS.1323	Concrete Pouring	08-Jan-16	09-Jan-16	1			88
Escalator Pit (GL 4-5/B'-C')							
3MSS.1324	Excavation	28-Dec-15	30-Dec-15	2	5m3	1 machine @ 190m3/day	43
3MSS.1325	Rebar Installation	30-Dec-15	02-Jan-16	2			43
3MSS.1326	Formworks	02-Jan-16	05-Jan-16	2			44
3MSS.1327	Concrete Pouring	05-Jan-16	06-Jan-16	1			44
Stage 1 - Underground Drainage							
3MSS.1328	Installation of Underground Drainage below B2 Slab - Portion A1 (2 Nr of M/H)	23-Dec-15	31-Dec-15	5	2 Nr		0
3MSS.1329	Preparation of Formworks & Cast underground pipes - Portion A1	31-Dec-15	04-Jan-16	2			0
3MSS.1330	Installation of Underground Drainage below B2 Slab - Portion A2 (2 Nr of M/H)	31-Dec-15	07-Jan-16	5	1 Nr		8
3MSS.1331	Preparation of Formworks & Cast underground pipes - Portion A2	07-Jan-16	09-Jan-16	2			8
3MSS.1332	Installation of Underground Drainage below B2 Slab - Portion A3 (2 Nr of M/H)	07-Jan-16	13-Jan-16	5	1 Nr		16
3MSS.1333	Preparation of Formworks & Cast underground pipes - Portion A3	13-Jan-16	15-Jan-16	2			16
3MSS.1334	Installation of Underground Drainage below B2 Slab - Portion B1 (1 Nr of M/H)	21-Jan-16	27-Jan-16	5	1 Nr		17
3MSS.1335	Preparation of Formworks & Cast underground pipes - Portion B1	27-Jan-16	29-Jan-16	2			23
3MSS.1336	Installation of Underground Drainage below B2 Slab - Portion B2 (3 Nr of M/H)	27-Jan-16	02-Feb-16	5	1 Nr		17
3MSS.1337	Preparation of Formworks & Cast underground pipes - Portion B2	02-Feb-16	04-Feb-16	2			17
3MSS.1338	Installation of Underground Drainage below B2 Slab - Portion B3 (1 Nr of M/H)	02-Feb-16	11-Feb-16	5	3 Nr		19
3MSS.1339	Preparation of Formworks & Cast underground pipes - Portion B3	11-Feb-16	13-Feb-16	2			19
Tower Crane No 1							
3MSS.1340	Position Sign-off for TC1	28-Nov-15	28-Nov-15	1			0
3MSS.1341	Design submission and approval	30-Nov-15	24-Dec-15	21			0
3MSS.1342	Mobilization & procurement	28-Dec-15	01-Feb-16	30			0
3MSS.1343	Blinding and Waterproofing	02-Feb-16	04-Feb-16	2			0
3MSS.1344	Rebar Installation - Tower Cranes no 1 Base Casting	04-Feb-16	13-Feb-16	5			0
3MSS.1345	Formworks Installation - Tower Cranes no 1 Base Casting	13-Feb-16	16-Feb-16	2			0
3MSS.1346	Concrete Casting	16-Feb-16	17-Feb-16	1			0
Stage 2							
Stage 2 - B2F Slab Construction							
3MSS.1347	Backfill and Roll - Portion A1	07-Jan-16	11-Jan-16	3	113m3	@ 40m3/day per gang	0
3MSS.1348	Waterproofing works - Portion A1	11-Jan-16	14-Jan-16	3	750m2	@300m2/day per gang	0
3MSS.1349	Lay Rebar for B2 Slab - Portion A1	14-Jan-16	13-Feb-16	23	610T	30men @ 0.9ton/m/day	0
3MSS.1350	Formworks for B2 Slab - Portion A1	13-Feb-16	16-Feb-16	2	85m2		0
3MSS.1351	Concrete Pouring - Portion A1	16-Feb-16	17-Feb-16	1	488m3		0
3MSS.1352	Backfill and Roll - Portion A2	16-Jan-16	19-Jan-16	2	84m3	@ 40m3/day per gang	2
3MSS.1353	Waterproofing works - Portion A2	19-Jan-16	21-Jan-16	2	750m2	@300m2/day per gang	2
3MSS.1354	Lay Rebar for B2 Slab - Portion A2	21-Jan-16	13-Feb-16	17	454T	30men @ 0.9ton/m/day	2
3MSS.1355	Formworks for B2 Slab - Portion A2	16-Feb-16	17-Feb-16	1	64m2		0
3MSS.1356	Concrete Pouring - Portion A2	17-Feb-16	18-Feb-16	1	363m3		0
3MSS.1357	Backfill and Roll - Portion A3	29-Jan-16	30-Jan-16	1	28m3	@ 40m3/day per gang	4
3MSS.1358	Waterproofing works - Portion A3	30-Jan-16	01-Feb-16	1	750m2	@300m2/day per gang	4
3MSS.1359	Lay Rebar for B2 Slab - Portion A3	03-Feb-16	13-Feb-16	6	152T	30men @ 0.9ton/m/day	2
3MSS.1360	Formworks for B2 Slab - Portion A3	16-Feb-16	17-Feb-16	1	36m2		0
3MSS.1361	Concrete Pouring - Portion A3	17-Feb-16	18-Feb-16	1	122m3		0
3MSS.1362	Backfill and Roll - Portion B1	29-Jan-16	01-Feb-16	2	95m3	@ 40m3/day per gang	23
3MSS.1363	Waterproofing works - Portion B1	01-Feb-16	03-Feb-16	2	750m2	@300m2/day per gang	23
3MSS.1367	Backfill and Roll - Portion B2	13-Feb-16	16-Feb-16	2	77m3	@ 40m3/day per gang	17
3MSS.1368	Waterproofing works - Portion B2	16-Feb-16	18-Feb-16	2	750m2	@300m2/day per gang	19
3MSS.1372	Backfill and Roll - Portion B3	16-Feb-16	20-Feb-16	4	158m3	@ 40m3/day per gang	17
3MSS.1373	Waterproofing works - Portion B3	20-Feb-16	25-Feb-16	4	750m2	@300m2/day per gang	17
Stage 2 - Site Formation & Pile Cap Construction							
Portion A4							
3MSS.1377	Excavate to -2.3mPD for B2 Slab Formation Level (GL F'-H'/7'-2') - Portion A4	18-Feb-16	25-Feb-16	6	1226m3	1 machines @ 350m3/day	0
3MSS.1378	Excavation works for Pile -PC 09 (02)	25-Feb-16	26-Feb-16	1	36m3	1 machine @ 190m3/day	0
3MSS.1379	Excavation works for Pile -PC 10 (01)	25-Feb-16	26-Feb-16	1	18m3	1 machine @ 190m3/day	0
3MSS.1380	Excavation works for Pile -PC 54 (03)	25-Feb-16	26-Feb-16	1	57m3	1 machine @ 190m3/day	0
3MSS.1381	Excavation works for Pile -PC 55 (03)	25-Feb-16	26-Feb-16	1	57m3	1 machine @ 190m3/day	0
3MSS.1382	Excavation works for Pile -PC 51 (02)	25-Feb-16	26-Feb-16	1	36m3	1 machine @ 190m3/day	0
3MSS.1383	Excavation works for Pile -PC 45 (07)	25-Feb-16	26-Feb-16	1	81m3	1 machine @ 190m3/day	0
3MSS.1384	Rebar Installation - PC 09 (02)	26-Feb-16	26-Feb-16	1			2
3MSS.1385	Rebar Installation - PC 10 (01)	26-Feb-16	26-Feb-16	1			2
3MSS.1386	Rebar Installation - PC 54 (03)	26-Feb-16	01-Mar-16	3			0
3MSS.1387	Rebar Installation - PC 55 (03)	26-Feb-16	01-Mar-16	3			0
3MSS.1388	Rebar Installation - PC 51 (02)	26-Feb-16	26-Feb-16	1			0
3MSS.1389	Rebar Installation - PC 45 (07)	26-Feb-16	03-Mar-16	5			0
3MSS.1390	Pile cap side formwork -PC 09 (02)	27-Feb-16	27-Feb-16	1			3
3MSS.1391	Pile cap side formwork -PC 10 (01)	27-Feb-16	27-Feb-16	1			3
3MSS.1392	Pile cap side formwork -PC 54 (03)	01-Mar-16	01-Mar-16	1			1
3MSS.1393	Pile cap side formwork -PC 55 (03)	01-Mar-16	01-Mar-16	1			1
3MSS.1394	Pile cap side formwork -PC 51 (02)	01-Mar-16	01-Mar-16	1			1
3MSS.1395	Pile cap side formwork -PC 45 (07)	03-Mar-16	03-Mar-16	1			0



M+3 Months Rolling Programme

Date	Revision	Checked	Approved
22-Oct-15	MOBP/3MRP Prog Rev B	Edgar Payos	Leo Harnett
02-Dec-15	3MRP Rev B (1st Draft)	Edgar Payos	Leo Harnett

Activity ID	Activity Name	Start	Finish	Original Duration	Quants	Production	Total Float
3MSS.1396	concrete pouring - PC 09 (02)	27-Feb-16	29-Feb-16	1			4
3MSS.1397	concrete pouring - PC 10 (01)	27-Feb-16	29-Feb-16	1			4
3MSS.1398	concrete pouring - PC 54 (03)	02-Mar-16	02-Mar-16	1			2
3MSS.1399	concrete pouring - PC 55 (03)	02-Mar-16	02-Mar-16	1			2
3MSS.1400	concrete pouring - PC 51 (02)	02-Mar-16	02-Mar-16	1			2
3MSS.1401	concrete pouring - PC 45 (07)	04-Mar-16	04-Mar-16	1			0
Portion A5							
3MSS.1402	Excavate to -2.3mPD for B2 Slab Formation Level (GL H'-J'/1-3) - Portion A5	25-Feb-16	03-Mar-16	6	1971m3	1 machines @ 350m3/day	27
3MSS.1403	Excavate to -2.3mPD for B2 Slab battered slope (GL H'-J'/7'-2) - Portion A5 (N)	03-Mar-16	05-Mar-16	2	799m3	1 machines @ 350m3/day	27
3MSS.1404	Excavate to -2.3mPD for B2 Slab battered slope (GL F'-H'/2-4) - Portion A5 (S)	05-Mar-16	08-Mar-16	2	799m3	1 machines @ 350m3/day	27
M+ AEL South							
East Pile Cap (Core wall)							
3MSS.S001	Excavate to Reduce levels +2.45mPD	11-Dec-15 A	14-Dec-15 A	2	464m3	1 machine @ 190m3/day	
3MSS.S002	Battered Slope	14-Dec-15	17-Dec-15	3	510m3		193
3MSS.S003	Rebar Installation	17-Dec-15	23-Feb-16	51	699T	15men @ 0.9ton/m/day	193
3MSS.S004	Formworks Installation	23-Feb-16	29-Feb-16	5	209m2	2 men @ 22m2/d/man	193
3MSS.S005	Concrete pouring	29-Feb-16	01-Mar-16	1	777m3		193
DCS Structure							
3MSS.D000	Dewatering - Installation and Test	02-Dec-15	21-Dec-15	16			243
3MSS.D001	Excavate from +5.50mPD (Existing Level) to +4.85mPD	24-Dec-15	30-Dec-15	3	427m3	1 machine @ 190m3/day	242
3MSS.D002	Excavate from +4.85mPD to +3.70mPD	30-Dec-15	05-Jan-16	4	756m3	1 machine @ 190m3/day	242
3MSS.D003	Install 1st Layer Struts at +4.2mPD	05-Jan-16	20-Jan-16	13			242
3MSS.D004	Excavate from +3.5 to -0.50mPD	20-Jan-16	05-Feb-16	14	2764m3	1 machine @ 190m3/day	240
3MSS.D005	Excavate to -0.5mPD to -2.5mPD	24-Feb-16	03-Mar-16	7	1316m3	1 machine @ 190m3/day	240
3MSS.D006	Install 2nd Layer Struts at 0.0mPD (w/ preloading)	05-Feb-16	24-Feb-16	13			240
Tower Crane No 3							
3MSS.T002	Position Sign-off for TC3	28-Nov-15	28-Nov-15	1			263
3MSS.T003	Design submission and approval	30-Nov-15	10-Dec-15	10			263
3MSS.T004	Mobilization & procurement	11-Dec-15	31-Dec-15	15			263
3MSS.T006	Excavate ro reduce level +2.45mPD	07-Jan-16	08-Jan-16	1	464m3	350m3/day	259
3MSS.T007	Excavate battered slope	09-Jan-16	12-Jan-16	3	510m3	350m3/day	259
3MSS.T008	Excavation for TC3 Base	13-Jan-16	15-Jan-16	2	6m3	1 machine @ 190m3/day	259
3MSS.T009	Construction of Pile Caps for TC3 Base	15-Jan-16	06-Feb-16	19			259
M+.70 External Works							
Interfacing Works							
#6 - Work Sequence Along Interface south of AEL							
Pile Cap 95 (M14a, 15, 16)							
3MIF.I001	Excavate to Reduce levels +3.9mPD	01-Mar-16	02-Mar-16	1	7m3	1 machine @ 190m3/day	193
3MIF.I002	Battered Slope	02-Mar-16	03-Mar-16	1	42m3		193
3MIF.I003	Rebar Installation	03-Mar-16	05-Mar-16	2	6.45T	5men @ 0.9ton/m/day	193
3MIF.I004	Formworks Installation	05-Mar-16	07-Mar-16	1	21m2	2 men @ 22m2/d/man	193
3MIF.I005	Concrete pouring	07-Mar-16	08-Mar-16	1	7m3		193
Pile Cap 100							
3MIF.I031	Excavate to Reduce levels +0.7mPD	03-Mar-16	04-Mar-16	1	15m3	1 machine @ 190m3/day	193
#100A - Stockpiling in Arts Pavilion Site							
3MIF.1150	Stockpile period	01-Dec-15	01-Apr-16	94			218



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Appendix C. Correspondence from The Harbourside and The Arch management offices

MTR Corporation Limited
香港鐵路有限公司
www.mtr.com.hk

Premier
MTR

Your ref: JEP/EC/TK/bw/T363512/22/0/L0002
Our ref: HBS/I1.3/2015/1243
Date: 10 November 2015

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

Attention: Mr. Eric Ching

By Post & Fax 2827 1823

Dear Mr. Ching,

Re: West Kowloon Cultural District
M+ Museum for Visual Culture (Main Contract Works)
Environmental Team Consultancy Services
Setting Up of Construction Air and Noise Monitoring Station

We refer to your letter dated 2 November 2015 regarding the setting up of construction air and noise monitoring station for West Kowloon Cultural District works.

According to the previous practice which advised by the representatives of owners of The Harbourside, we are not able to facilitate the related system setting up for air and noise monitoring at The Harbourside.

Should you have any enquiries, please feel free to contact me at 3122-7500.

Yours sincerely,

Deon Chui
Property Manager
/BOH

MTR Corporation Limited
香港鐵路有限公司

Premier
MTR

Ref: ARC-R1.2-2015-1033

23 November 2015

Mr. Eric Ching
Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East, 100 How Ming Street,
Kwun Tong, Kowloon,
Hong Kong

Dear Mr. Ching,

Re: West Kowloon Cultural District
M+ Museum for Visual Culture (Main Contract Works)
Environmental Team Consultancy Services
Setting Up of Construction Noise Monitoring Station

We refer to your letter dated 2 November 2015 and the phone conversation with our Mr. Tony Ng on 13 November 2015 regarding the set up of construction noise monitoring station for West Kowloon Cultural District works.

We regret that the construction noise monitoring station is not allowed to set up in the area of The Arch.

Should you have any enquiries, please feel free to contact our Assistant Property Manager Mr. Tony Ng on 3516 3111.

Yours sincerely,

Kevin Chan
Property Manager
The Arch

KEC/TON/

Appendix D. 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 D-1: Action and Limit Levels for 1-hour TSP

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

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

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

Noise

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

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

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

Appendix E. 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 E-1: Event and Action Plan for Air Quality

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

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

Construction Noise

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

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

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

Landscape and Visual Impact

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

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

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

Appendix F. Monitoring Schedule

JANUARY 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5 AM1, AM2 - 24hrTSP, 1hr TSP x3	6	7	8	9
10	11 AM1, AM2 - 24hrTSP, 1hr TSP x3	12	13	14	15 AM1, AM2 - 24hrTSP, 1hr TSP x3	16
17	18	19	20	21 AM1, AM2 - 24hrTSP, 1hr TSP x3	22	23
24	25	26	27 AM1, AM2 - 24hrTSP, 1hr TSP x3	28	29	30
31		**Notes:** AM1 - International Commerce Centre (ICC) AM2 - The Harbourside Tower 1 Noise monitoring at NM1(The Harbourside Tower 1) is being suspended. Liaision with the management office of the International Commerce Centre for the other location identified at the International Commerce Centre are in progress for granting access to conduct noise monitoring. Please refer to Monthly EM&A Report Section 1.4 for details.				

FEBRUARY 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	**2** AM1, AM2 - 24hrTSP, 1hr TSP x3	**3**	**4**	**5** AM1, AM2 - 24hrTSP, 1hr TSP x3	**6**
7	**8**	**9**	**10**	**11** AM1, AM2 - 24hrTSP, 1hr TSP x3	**12**	**13**
14	**15**	**16**	**17** AM1, AM2 - 24hrTSP, 1hr TSP x3	**18**	**19**	**20**
21	**22**	**23** AM1, AM2 - 24hrTSP, 1hr TSP x3	**24**	**25**	**26**	**27**
28	**29** AM1, AM2 - 24hrTSP, 1hr TSP x3					
		Notes: AM1 - International Commerce Centre (ICC) AM2 - The Harbourside Tower 1 Noise monitoring at NM1(The Harbourside Tower 1) is being suspended. Liaision with the management office of the International Commerce Centre for the other location identified at the International Commerce Centre are in progress for granting access to conduct noise monitoring. Please refer to Monthly EM&A Report Section 1.4 for details.				

Appendix G. Calibration Certifications

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM1(ICC)
Calibrated by	:	K.T.Ho
Date	:	16/12/2015

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	14 Mar 2015
Slope (m)	:	2.09532
Intercept (b)	:	-0.03812
Correlation Coefficient(r)	:	0.99994

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1026
Ta(K)	:	288

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	10.0	3.237	1.563	58	59.38
2	13 holes	8.2	2.931	1.417	51	52.21
3	10 holes	6.0	2.508	1.215	42	43.00
4	7 holes	4.2	2.098	1.019	34	34.81
5	5 holes	2.4	1.586	0.775	22	22.52

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

Sampler Calibration Relationship

Slope(m):46.178 Intercept(b): -12.939 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 21/12/2015

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AM2 (Harbourside)
Calibrated by	:	K.T.Ho
Date	:	16/12/2015

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	14 Mar 2015
Slope (m)	:	2.09532
Intercept (b)	:	-0.03812
Correlation Coefficient(r)	:	0.99994

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1026
Ta(K)	:	288

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.0	3.546	1.711	58	59.38
2	13 holes	9.0	3.071	1.484	50	51.19
3	10 holes	7.0	2.709	1.311	43	44.02
4	7 holes	4.4	2.147	1.043	34	34.81
5	5 holes	2.4	1.599	0.775	24	24.57

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

Sampler Calibration Relationship

Slope(m):37.152 Intercept(b):-4.194 Correlation Coefficient(r): 0.9997

Checked by: Date: 21/12/2015

Magnum Fan

SIBATA

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

CALIBRATION CERTIFICATE

Date: May 28, 2015

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

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

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Kentaro Togo
Overseas Sales Division

TEST CERTIFICATE

Report No. 15-0798

CUSTOMER : INNOTECH INSTRUMENTATION CO.LTD.

SIBATA SCIENTIFIC TECHNOLOGY LTD.

DATE 26/May /2015

APPROVE DY	VERIFIED BY	ISSUED BY

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

Testing Category	Judging Standard	Judgment			Inspection chart
Function Test	Switch, Display, Wiring will nomally function	OK			
Sensitivity Calibration	Count is ±2% accurate to the master by the standard calibration particle	Reading of Master	Reading of this Instrument	Correction	Reference Value(S)
		813 CPM	814 CPM	+0.1 %	
Dust Concentration Measuring	Count is ±10% accurate to the master under the 3 different concentration.	2079 CPM	1998 CPM	−3.9 %	570 CPM
		1020 CPM	994 CPM	−2.5 %	
		535 CPM	524 CPM	−2.1 %	Test atmosphere
Stability	The maximum value of the sensitivity adjustment scale setting value of the machine and the difference with minimum value are within 5% compared with the maximum value. (The measurement is repeated three times for one minute.)	OK			Temperature: 23 ℃ / Humidity: 45 %
Synthetic Judgment		Good			

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

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

Equipment Verification Results:

Testing Date: 22 & 23 June 2015

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

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

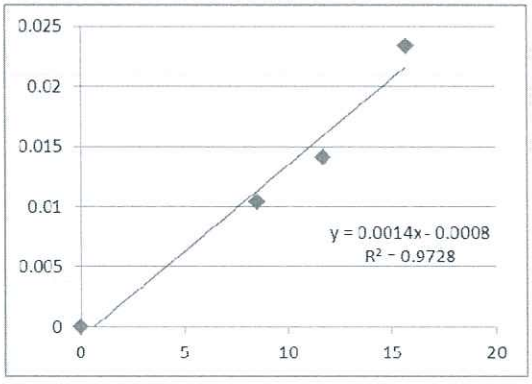
Sensitivity Adjustment Scale Setting (After Calibration) 574 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0014

Correlation Coefficient 0.9863

Date of Issue 24 June 2015



Remarks:

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

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

Operator : Donald Kwok Signature : Date : 24 June 2015

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

TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4460	3.2	2.00
2	NA	NA	1.00	1.0300	6.4	4.00
3	NA	NA	1.00	0.9180	7.9	5.00
4	NA	NA	1.00	0.8780	8.7	5.50
5	NA	NA	1.00	0.7240	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0121	0.6999	1.4258		0.9958	0.6886	0.8784
1.0078	0.9785	2.0163		0.9916	0.9627	1.2422
1.0057	1.0955	2.2543		0.9895	1.0779	1.3888
1.0047	1.1443	2.3644		0.9885	1.1258	1.4566
0.9994	1.3805	2.8515		0.9833	1.3582	1.7568
Qstd slope (m) =		2.09532		Qa slope (m) =		1.31205
intercept (b) =		-0.03812		intercept (b) =		-0.02349
coefficient (r) =		0.99994		coefficient (r) =		0.99994
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

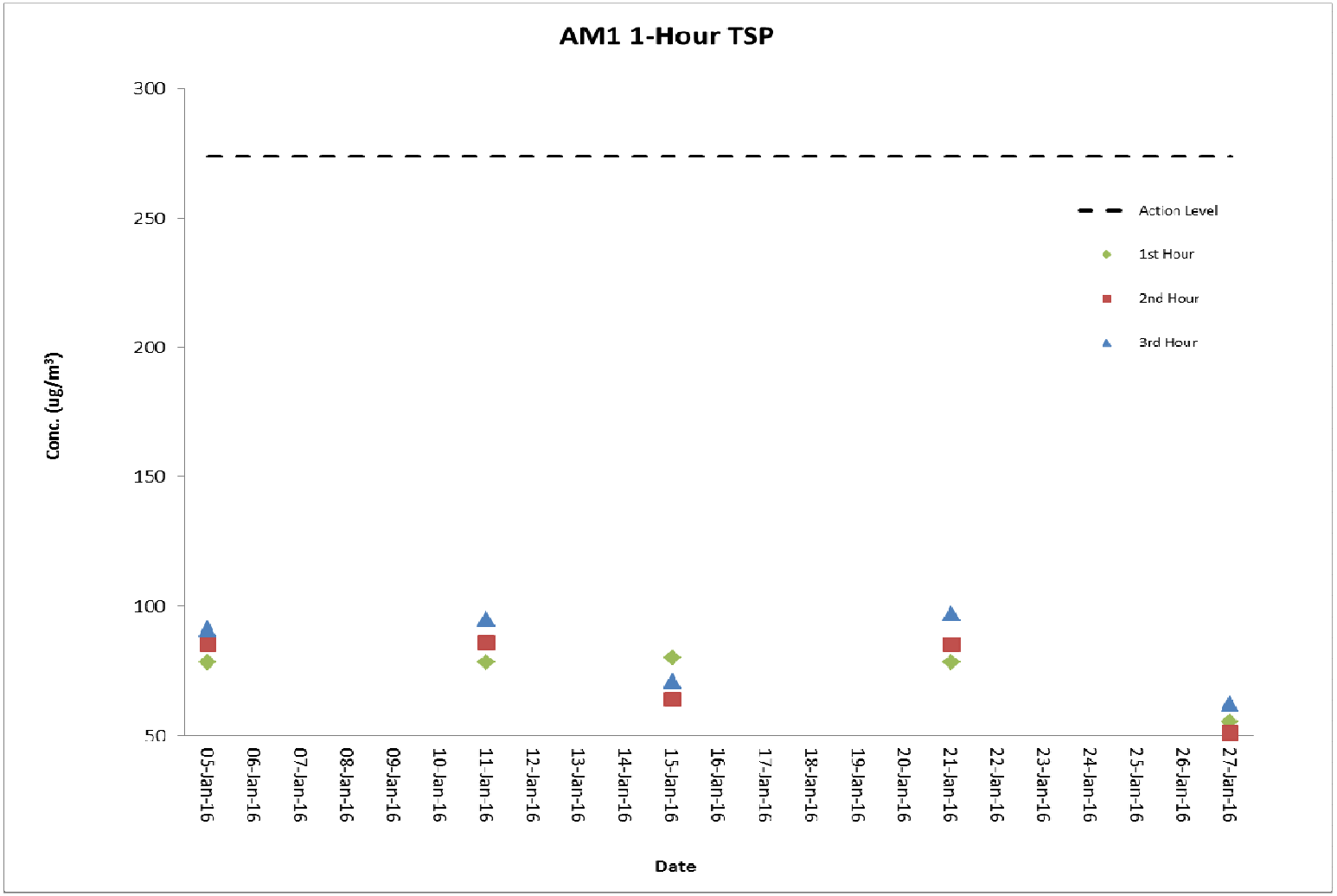
Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

Appendix H. Graphical Plots of the Monitoring Results

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

Date	Weather Condition	Time	Conc. (μg/m^3)			Action Level (μg/m^3)	Limit Level (μg/m^3)	Min	Max
			1st Hour	2nd Hour	3rd Hour				
05-Jan-16	Cloudy	10:30 - 15:00	78	85	91	273.7	500	51	97
11-Jan-16	Fine	10:20 - 15:00	78	86	95	273.7	500		
15-Jan-16	Rainy	8:00 - 12:00	80	64	71	273.7	500		
21-Jan-16	Rainy	10:30 - 16:00	78	85	97	273.7	500		
27-Jan-16	Rainy	10:43 - 16:00	55	51	62	273.7	500		

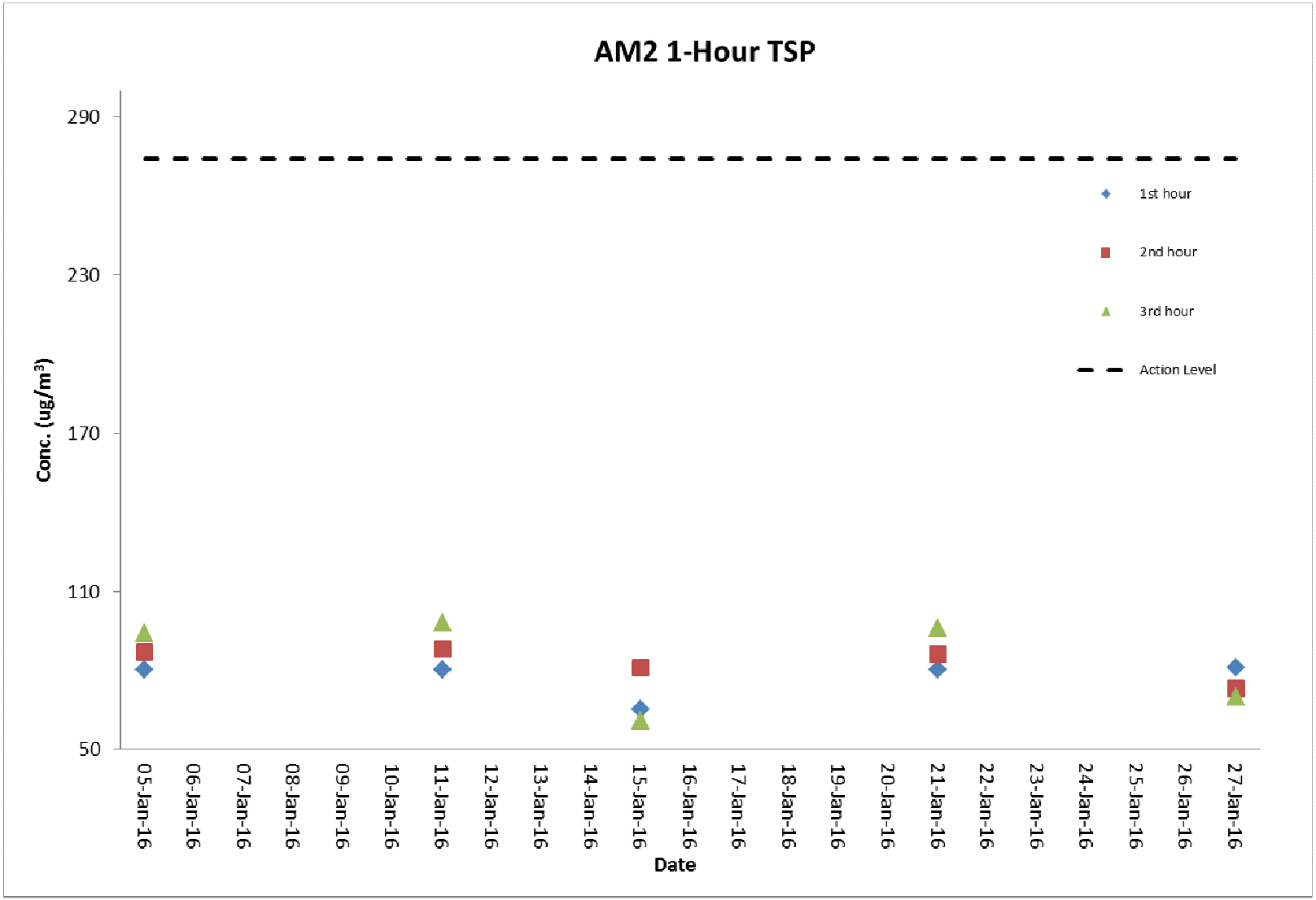
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (1-hour TSP)



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

Date	Weather Condition	Time	Conc. (μg/m^3)			Action Level (μg/m^3)	Limit Level (μg/m^3)	Min	Max
			1st Hour	2nd Hour	3rd Hour				
05-Jan-16	Cloudy	10:45 - 15:10	80	87	94	274.2	500	61	98
11-Jan-16	Fine	10:32 - 15:10	80	88	98	274.2	500		
15-Jan-16	Rainy	8:12 - 15:10	65	81	61	274.2	500		
21-Jan-16	Cloudy	10:40 - 16:10	80	86	96	274.2	500		
27-Jan-16	Rainy	10:55 - 16:10	81	73	70	274.2	500		

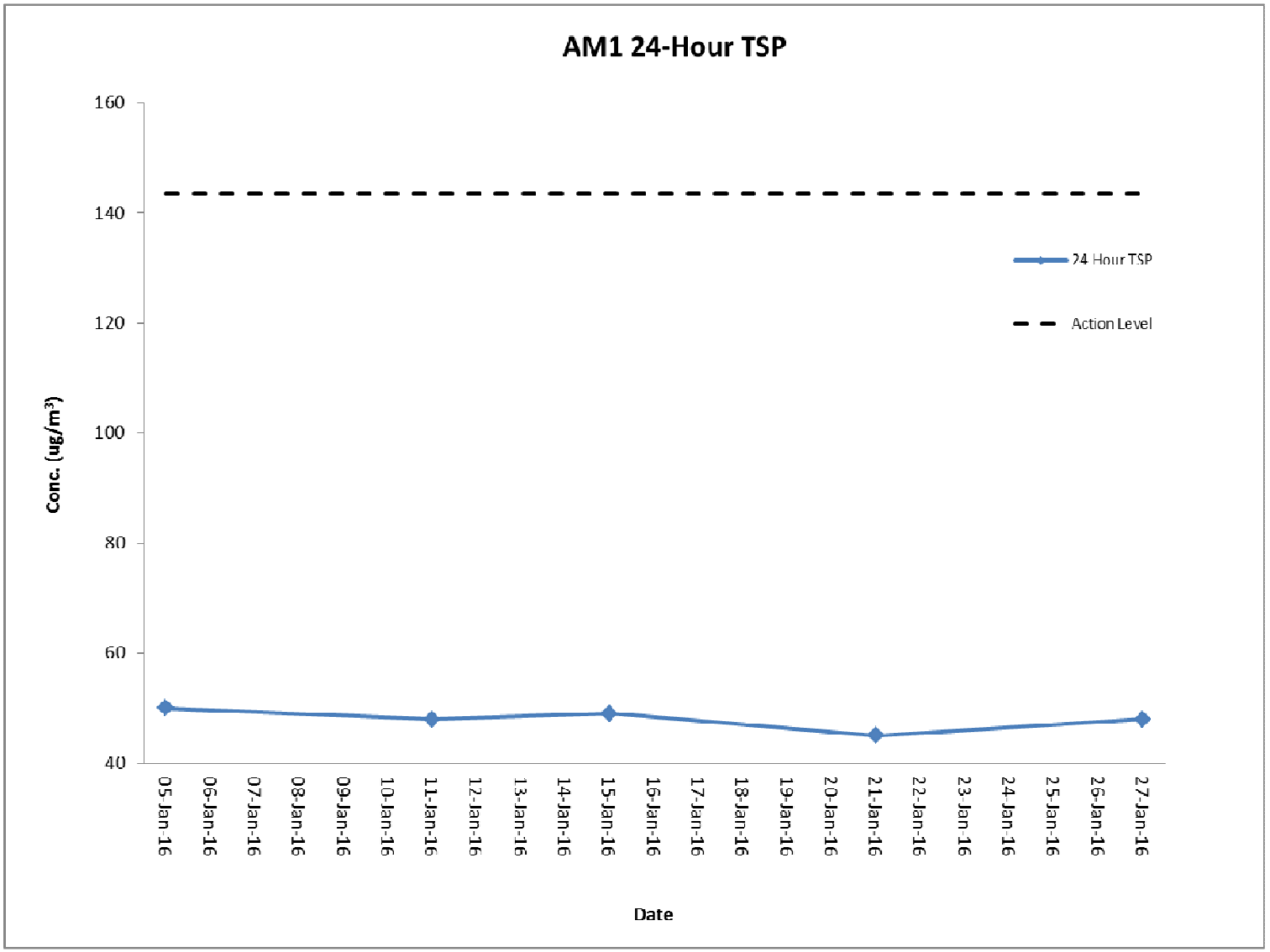
Graphical Presentation of Air Quality Monitoring Result at Station AM2 (1-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
05-Jan-16	10:33	06-Jan-16	10:33	2.8086	2.8966	18912.38	18936.38	24	1.23	1.23	1.23	50	Cloudy	143.6	260
11-Jan-16	10:22	12-Jan-16	10:22	2.8055	2.89	18936.38	18960.38	24	1.23	1.23	1.23	48	Fine	143.6	260
15-Jan-16	08:02	16-Jan-16	08:02	2.8145	2.9007	18960.38	18984.38	24	1.23	1.23	1.23	49	Rainy	143.6	260
21-Jan-16	10:28	22-Jan-16	10:28	2.7819	2.861	18984.38	19008.38	24	1.23	1.23	1.23	45	Cloudy	143.6	260
27-Jan-16	10:45	28-Jan-16	10:45	2.7785	2.864	19008.38	19032.38	24	1.23	1.23	1.23	48	Rainy	143.6	260

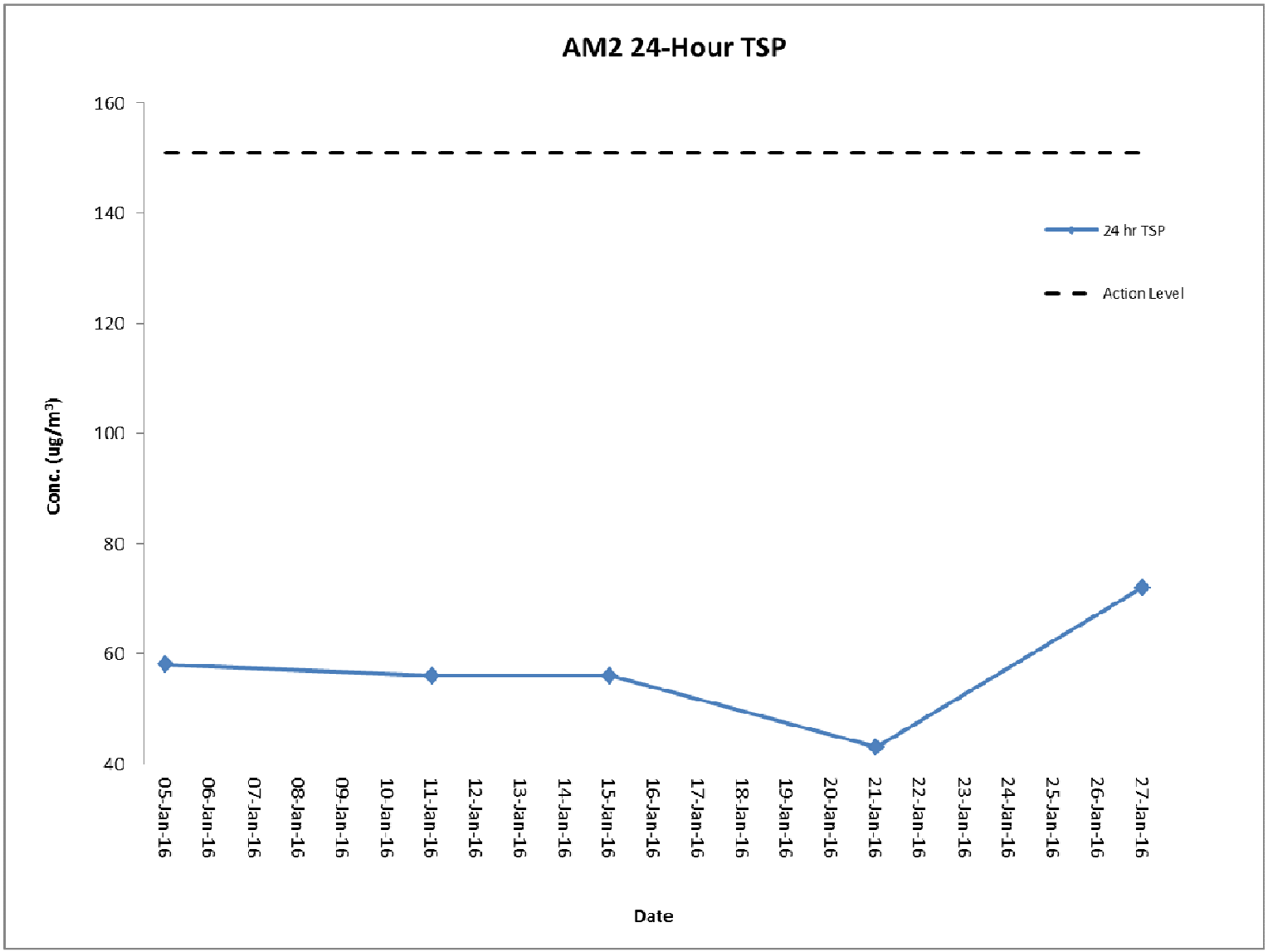
Graphical Presentation of Air Quality Monitoring Result at Station AM1 (24-hour TSP)



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

Start		Finish		Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			Conc. ($\mu g/m^3$)	Weather Condition	Action Level	Limit Level
Date	Time	Date	Time	Initial	Final	Initial	Final		Initial	Final	Average				
05-Jan-16	10:43	06-Jan-16	10:43	2.8033	2.906	14615.59	14639.59	24	1.24	1.24	1.24	58	Cloudy	151.1	260
11-Jan-16	10:36	12-Jan-16	10:36	2.7999	2.9001	14639.59	14663.59	24	1.24	1.24	1.24	56	Fine	151.1	260
15-Jan-16	08:15	16-Jan-16	08:15	2.8097	2.91	14663.59	14687.59	24	1.24	1.24	1.24	56	Rainy	151.1	260
21-Jan-16	10:38	22-Jan-16	10:38	2.7888	2.8664	14687.59	14711.59	24	1.24	1.24	1.24	43	Cloudy	151.1	260
27-Jan-16	10:58	28-Jan-16	10:58	2.7599	2.8893	14711.59	14735.59	24	1.24	1.24	1.24	72	Rainy	151.1	260

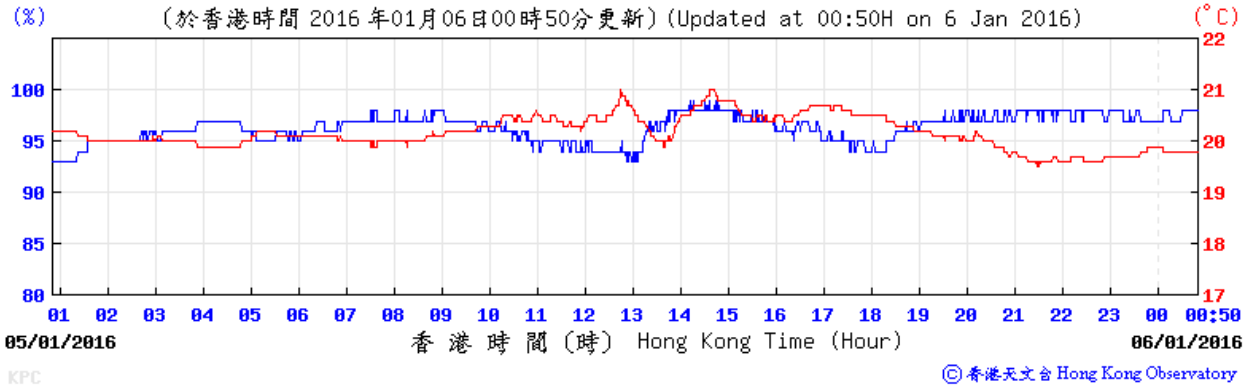
Graphical Presentation of Air Quality Monitoring Result at Station AM2 (24-hour TSP)



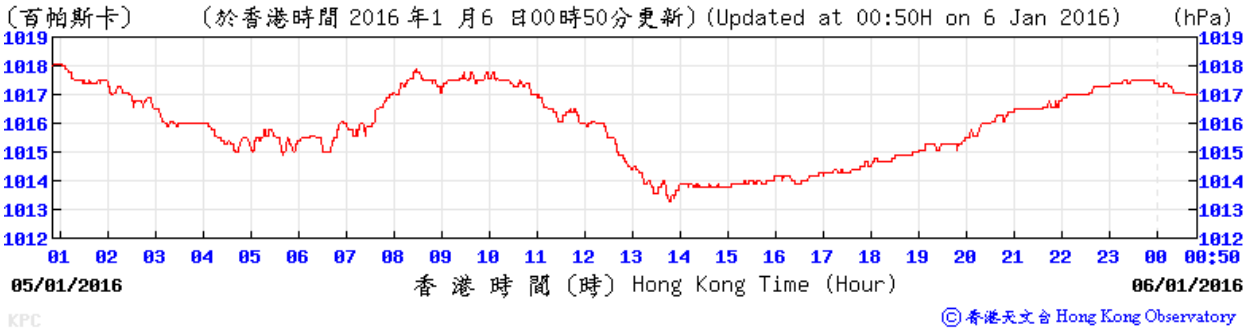
Appendix I. Meteorological Data Extracted from Hong Kong Observatory

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

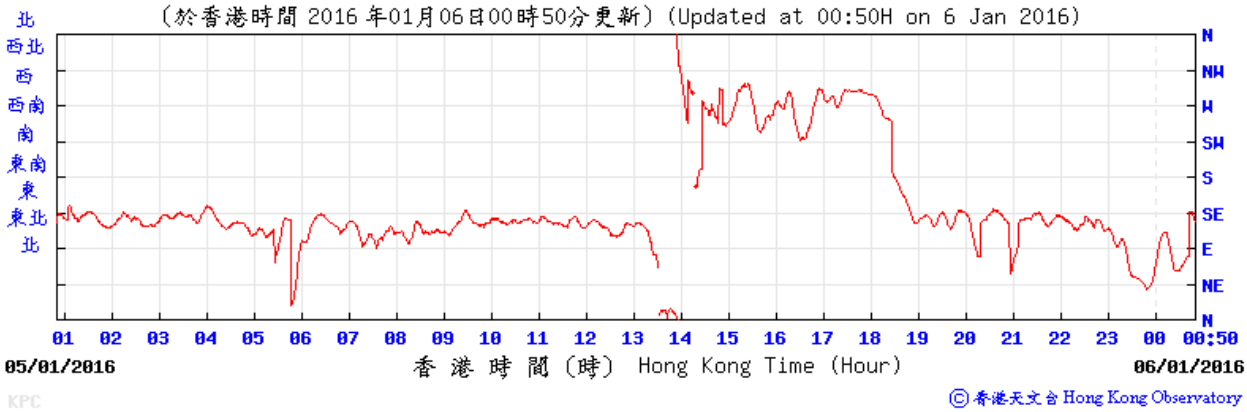
Temperature/Humidity:



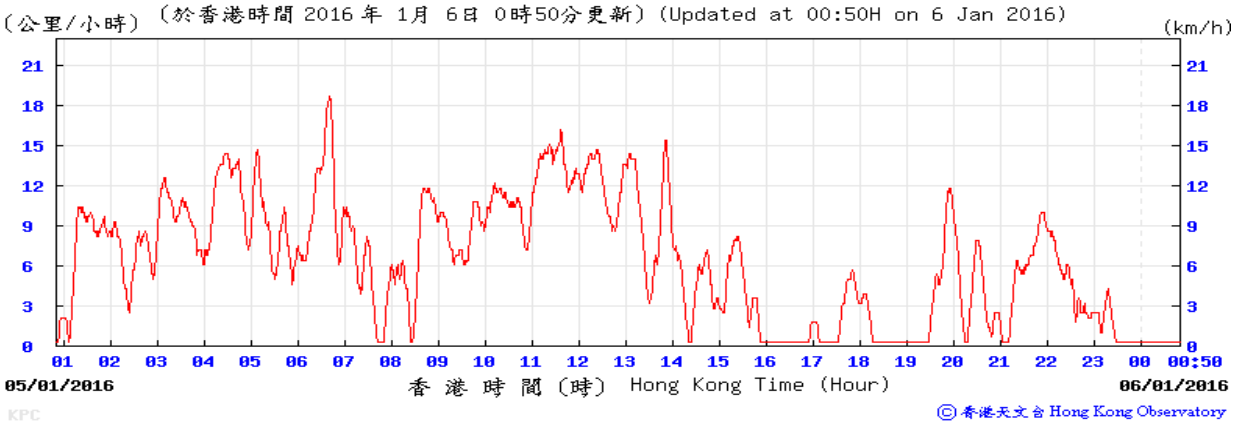
Pressure:



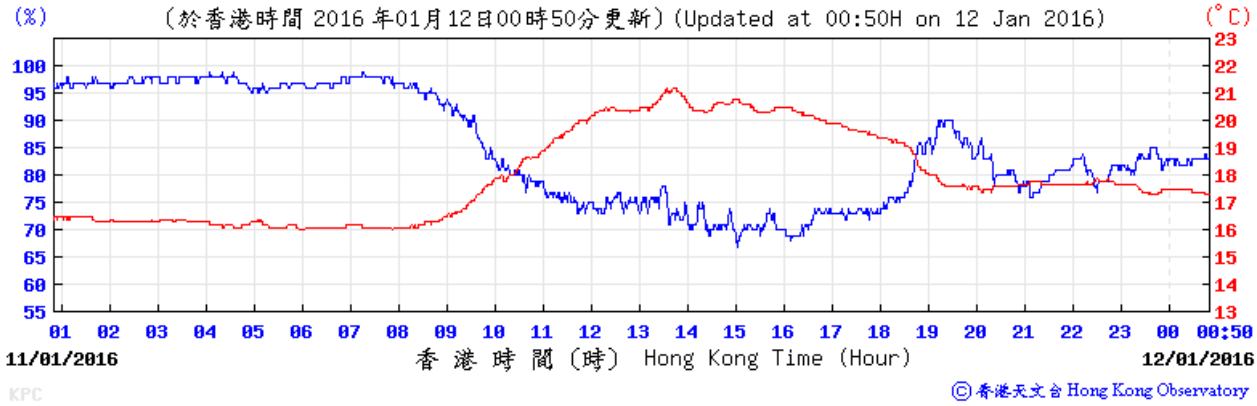
Wind Direction:



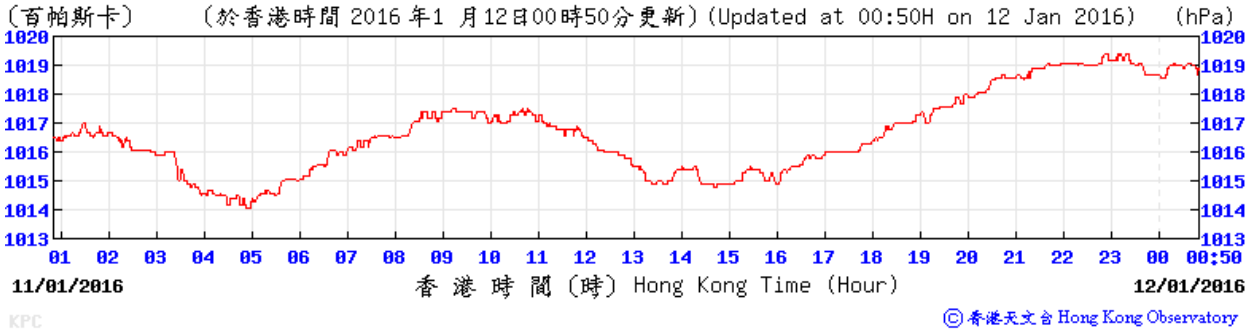
Wind Speed:



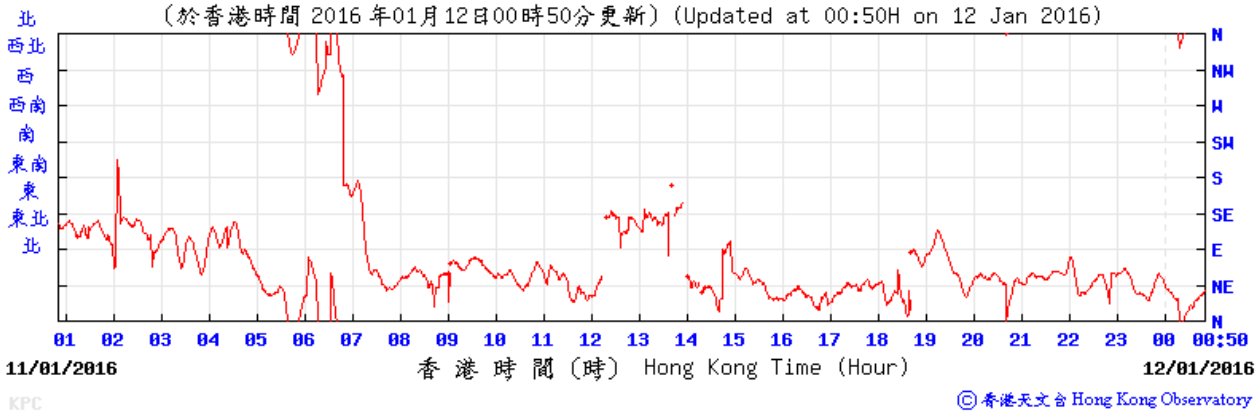
Temperature/Humidity:



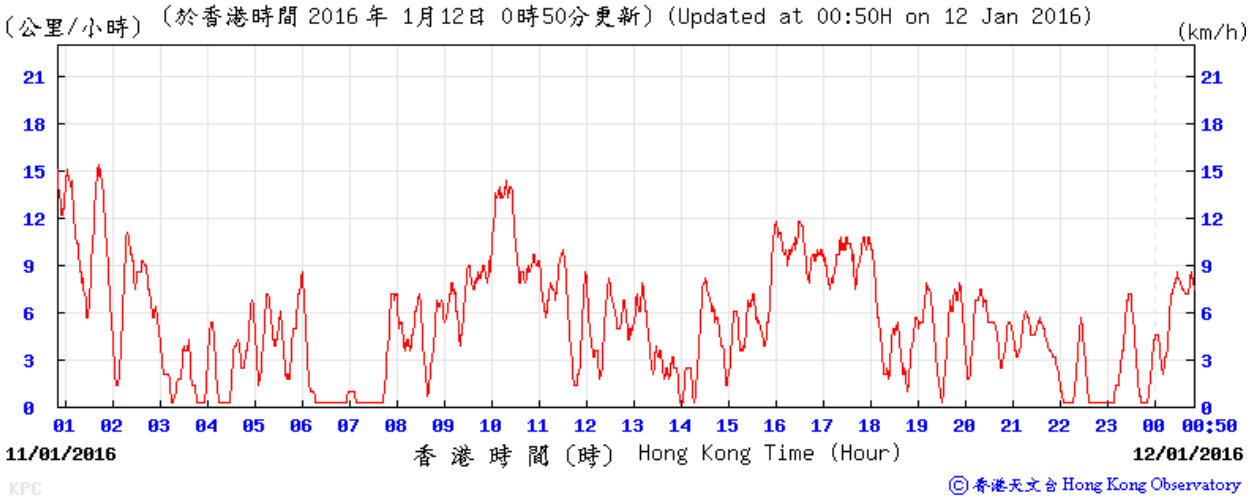
Pressure:



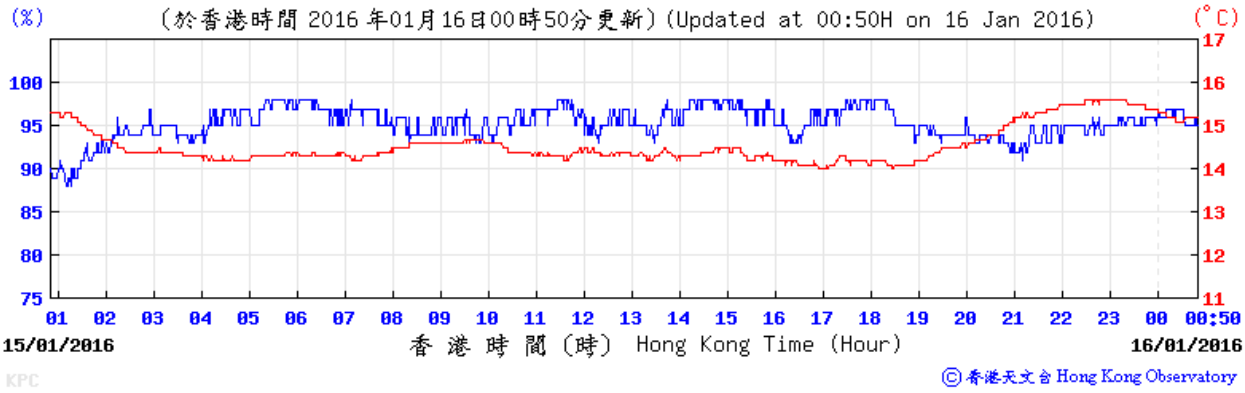
Wind Direction:



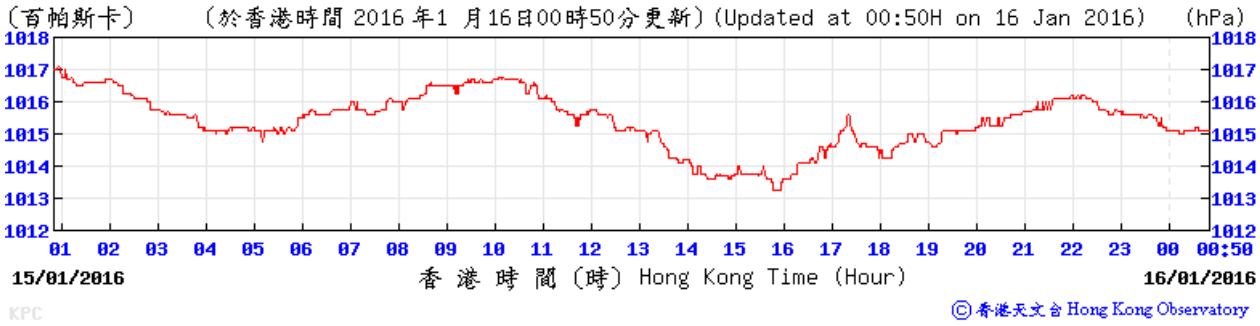
Wind Speed:



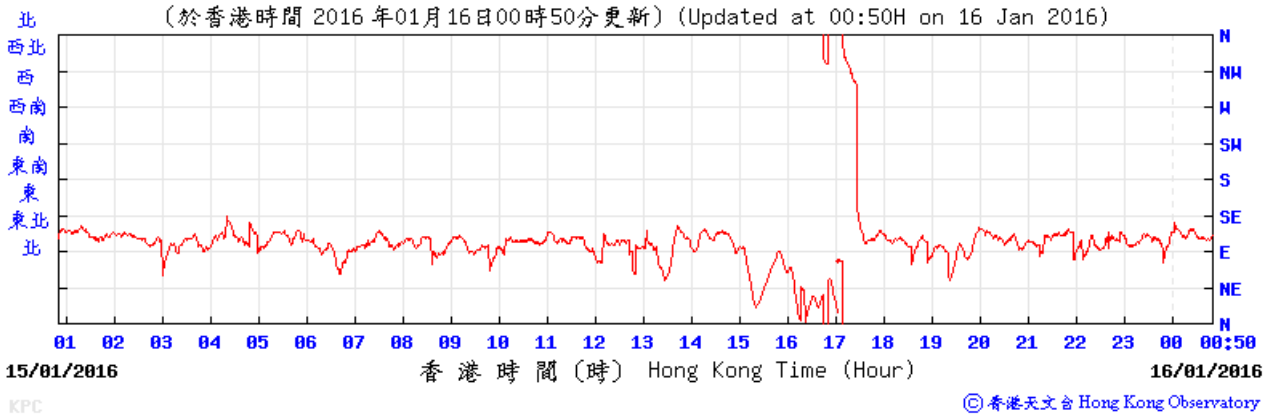
Temperature/Humidity:



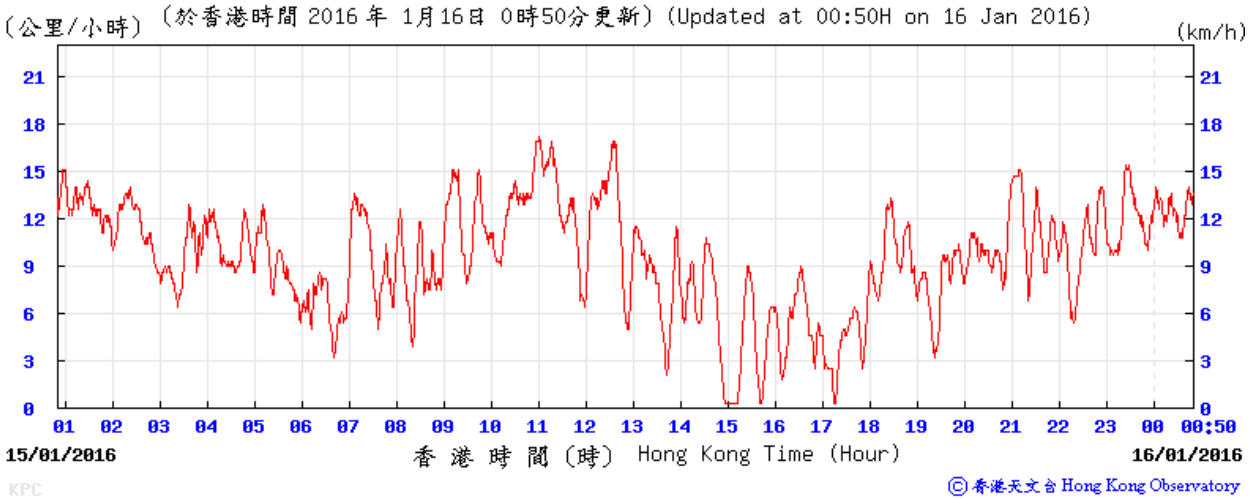
Pressure:



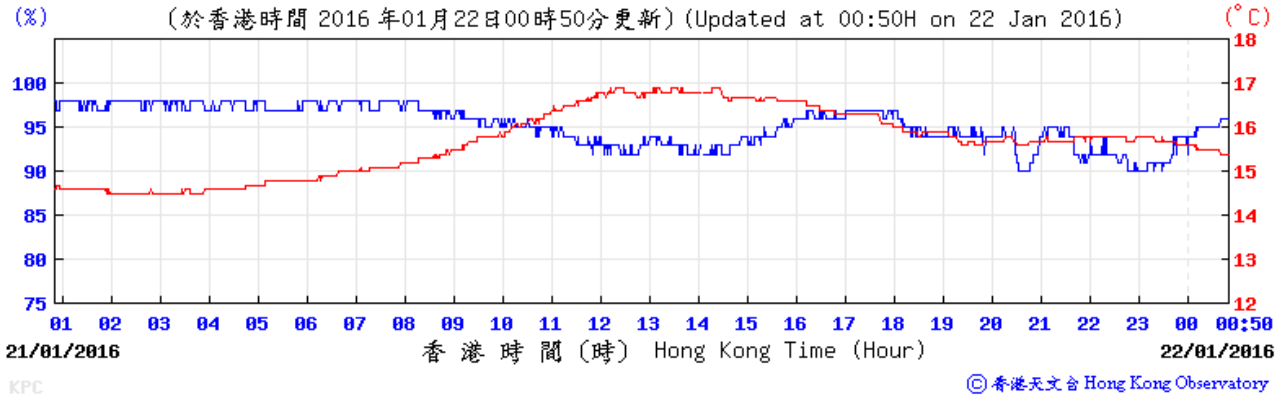
Wind Direction:



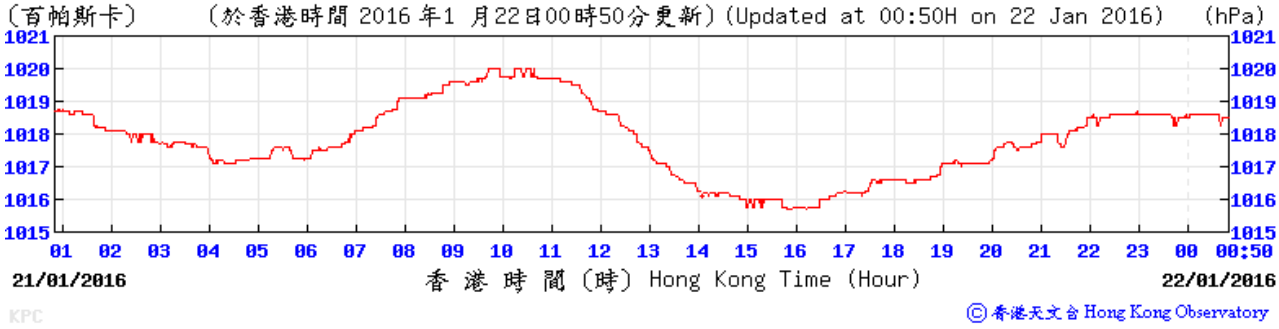
Wind Speed:



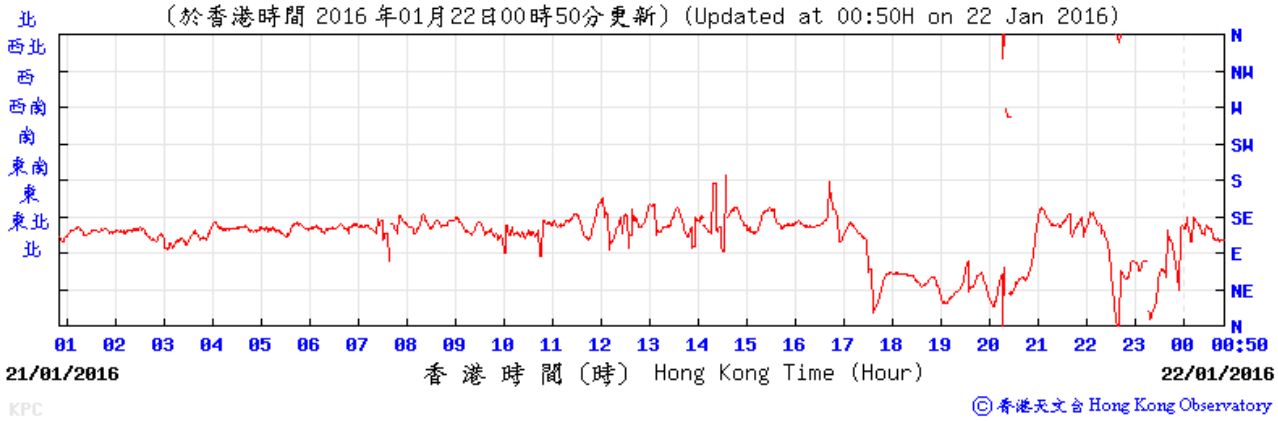
Temperature/Humidity:



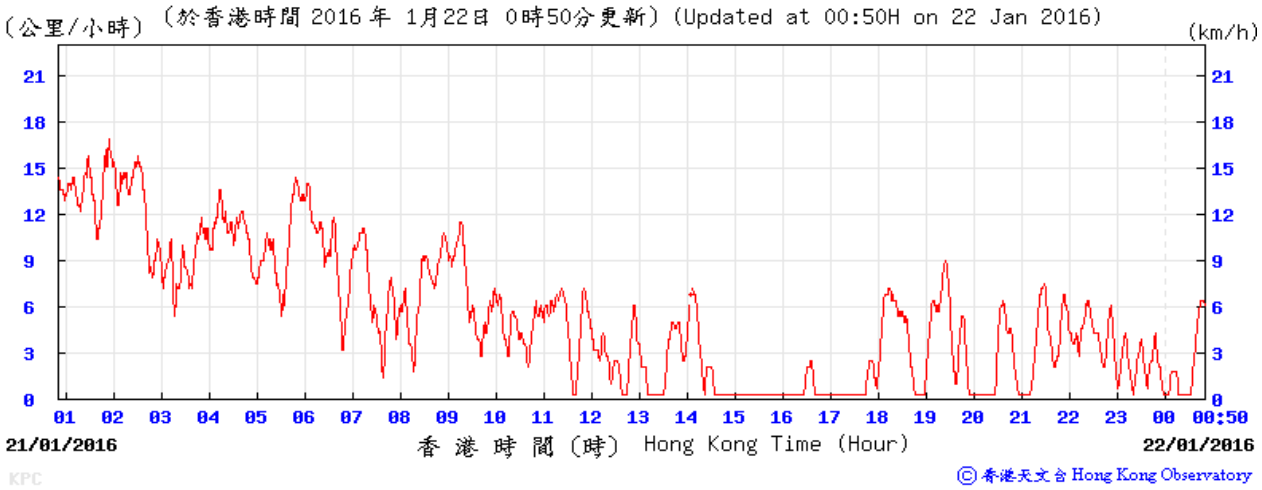
Pressure:



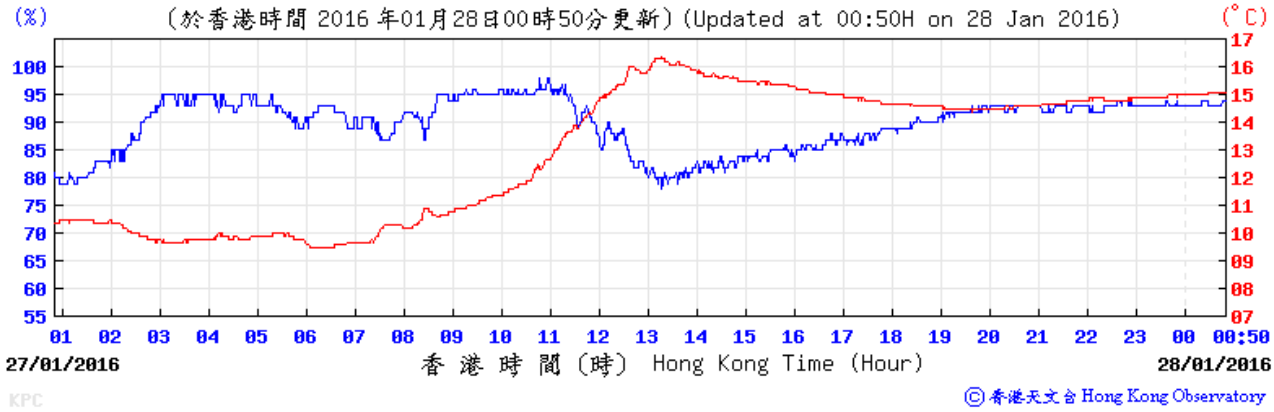
Wind Direction:



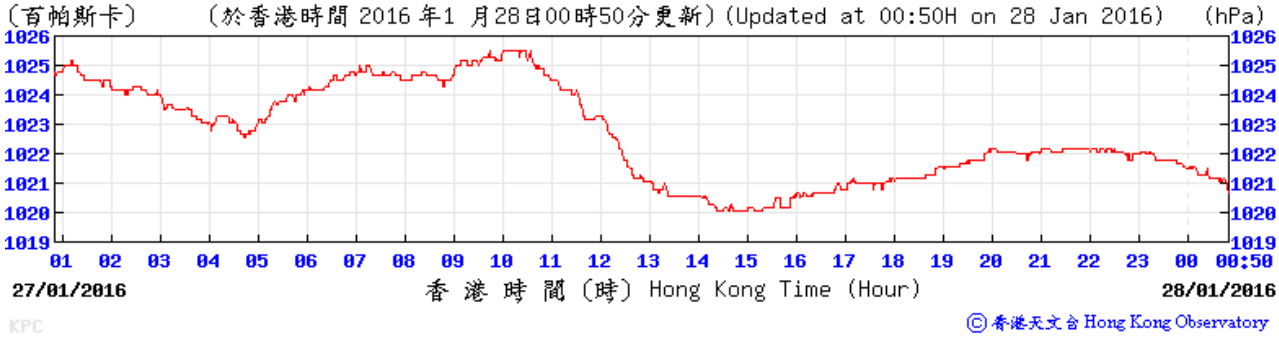
Wind Speed:



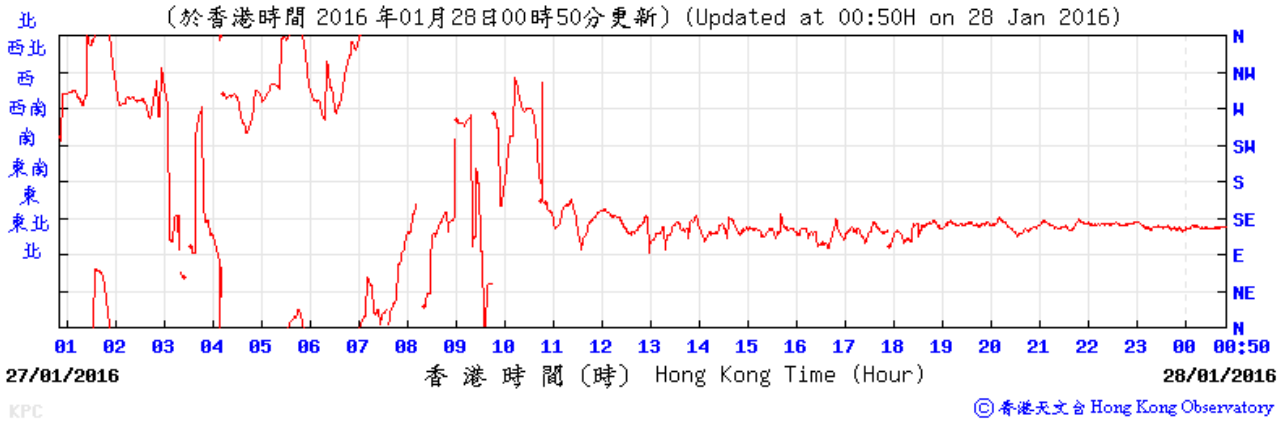
Temperature/Humidity:



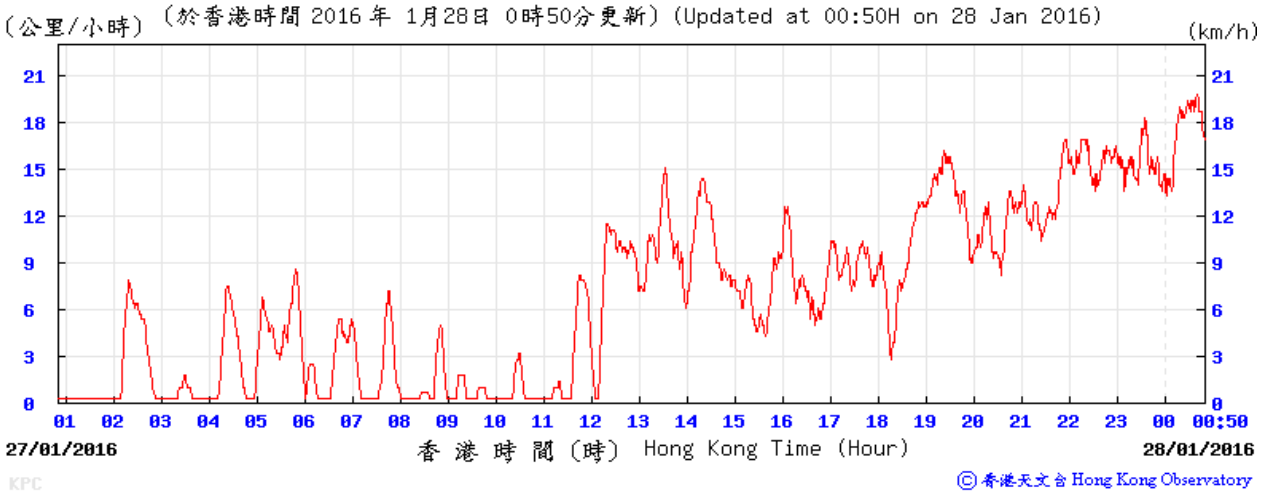
Pressure:



Wind Direction:



Wind Speed:



Appendix J. Waste Flow table

Table J-1 Monthly Waste Flow Table

Month	Excavated Waste (tonnes)	Actual Quantities of Inert C&D Materials (excluding ecavated waste) (tonnes) *e.g. broken concrete*					Actual Quantities of Non-inert C&D Waste (tonnes)				
		(a) Total inert C&D material generated (a) = (b) + (c) + (d) + (e)	(b) Reused in contract	(c) Reused in other projects	(d) Sent to recycling company	(e) Disposed to public fill	(f) Recycled scrap metal	(g) Reused / recycled timber	(h) Chemical waste	(i) Other waste disposed to landfill	(j) Total non-inert C&D material generated (j) = (f) + (g) + (h) + (i)
Nov 2015	46,607.4	0.0	0.0	0.0	0.0	0.0	76.2	0.0	0.0	67.6	143.8
Dec 2015	29,631.5	21.4	0.0	21.4	0.0	0.0	0.0	0.0	1.0	66.0	66.9
Jan 2016	21,077.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.2	23.2
Feb 2016											
Mar 2016											
Apr 2016											
May 2016											
Jun 2016											
Jul 2016											
Aug 2016											
Sep 2016											
Oct 2016											
Nov 2016											
Dec 2016											
Total	**97,316.3**	**21.4**	**0.0**	**21.4**	**0.0**	**0.0**	**76.2**	**0.0**	**1.0**	**156.8**	**233.9**

Note:
1. A total of 21.4 tons of Grouting material was reused in other projects

Quantities of diposal/ resue/ storage of excavated waste since the commencement of the Project:

Site of Disposal/ Reuse/ Storage	Quantities (tonnes)
Fill Bank at Tuen Mun Area 38	11,455.0
Fill Bank at Tseung Kwan O Area 137	27,093.3
Green Valley	34,144.0
Advance Works for Shek Wu Hui Sewage Treatment Works	11,952.0
Design and Construction of Kai Tak Cable Tunnel, CLP	720.0
MTR Contract 1002 Whampoa Station and Overrun Tunnel	5,600.0
M+ Stockpile (M66, storage site near M+)	2,880.0
Hsin Chong Stockpile (Storage site near M+)	3,472.0
Total	97,316.3

Appendix K. Environmental Mitigation Measures – Implementation Status

Table K-1: Environmental Mitigation Measures Implementation Status

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

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

EM&A Ref.	Recommendation Measures	Implementation Stage
	necessary to achieve dispersion from residual pollutants, should be at low level to minimise the effect on the local community in the case of abnormal emissions and to facilitate maintenance and inspection	
	Emission Limits	
	▪ All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist or smoke	✓
	Engineering Design/Technical Requirements	
	▪ As a general guidance, the loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to prevent the release of visible dust and/or other noxious or offensive emissions	✓
Noise Impact (Construction)		
3.1 & 10.4.1	**Good Site Practice** Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:	
	▪ only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works;	✓
	▪ machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum;	✓
	▪ plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs;	✓
	▪ mobile plant should be sited as far away from NSRs as possible; and	✓
	▪ material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓
3.1 & 10.4.1	**Adoption of Quieter PME** The recommended quieter PME adopted in the assessment were taken from the EPD's QPME Inventory and "*Sound Power Levels of Other Commonly Used PME*" are presented in **Table 4.26** in the EIA report. It should be noted that the silenced PME selected for assessment can be found in Hong Kong.	N/A
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.	✓

EM&A Ref.	Recommendation Measures	Implementation Stage
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
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
Water Quality Impact (Construction)		
4.1 & 10.5.1	**Construction site runoff and drainage** The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts: ▪ At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system should be undertaken by the WKCDA's Contractor prior to the commencement of construction; ▪ Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the WKCDA's Contractor prior to the commencement of construction. ▪ All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times. ▪ Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of	Obs Obs ✓ ✓

EM&A Ref.	Recommendation Measures	Implementation Stage
	trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities.	
	▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	✓
	▪ Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Obs
	▪ Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and stormwater runoff being directed into foul sewers.	✓
	▪ Precautions should be taken at any time of the year when rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	✓
	▪ Bentonite slurries used in piling or slurry walling should be reconditioned and reused wherever practicable. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.	N/A
	Barging facilities and activities	
	Recommendations for good site practices during operation of the proposed barging point include:	
	▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;	N/A
	▪ Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation;	N/A
	▪ All hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage
	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
4.1 & 10.5.1	**Sewage effluent from construction workforce**	
	Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	✓
4.1 & 10.5.1	**General construction activities**	
	▪ Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used.	Obs
	▪ Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.	Obs
Waste Management Implications (Construction)		
6.1 & 10.7.1	**Good Site Practices**	
	Recommendations for good site practices during the construction activities include:	
	▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	✓
	▪ Training of site personnel in proper waste management and chemical handling procedures	✓
	▪ Provision of sufficient waste disposal points and regular collection of waste	✓
	▪ Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	✓
	▪ Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction to public roads	✓
	▪ Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the inert or non-inert C&D materials is not anticipated	✓
6.1 & 10.7.1	**Waste Reduction Measures**	

EM&A Ref.	Recommendation Measures	Implementation Stage
	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.	✓
6.1 & 10.7.1	**Chemical Waste**	

EM&A Ref.	Recommendation Measures	Implementation Stage
	▪ If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the "Code of Practice on the Packaging Labelling and Storage of Chemical Wastes". Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Obs
	▪ 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
6.1 & 10.7.1	**General Refuse** General refuse should be stored in enclosed bins or compaction units separated from inert C&D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	✓
Land Contamination (Construction)		
7.1 & 10.8.1	The potential for land contamination issues at the TST Fire Station due to its future relocation will be confirmed by site investigation after land acquisition. Where necessary, mitigation measures for minimising potential exposure to contaminated materials (if any) or remediation measures will be identified. If contaminated land is identified (e.g., during decommissioning of fuel oil storage tanks) after the commencement of works, mitigation measures are proposed in order to minimise the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially contaminated materials. The following measures are proposed for excavation and transportation of contaminated material:	
	▪ To minimize the chance for construction workers to come into contact with any contaminated materials, bulk earth-moving excavation equipment should be employed;	N/A
	▪ Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when interacting directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site;	N/A
	▪ Stockpiling of contaminated excavated materials on site should be avoided as far as possible;	N/A
	▪ The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was	

EM&A Ref.	Recommendation Measures	Implementation Stage
	carried out;	N/A
	▪ Vehicles containing any contaminated excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater;	N/A
	▪ Truck bodies and tailgates should be sealed to stop any discharge;	N/A
	▪ Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping;	N/A
	▪ Speed control for trucks carrying contaminated materials should be exercised;	N/A
	▪ Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and	N/A
	▪ Maintain records of waste generation and disposal quantities and disposal arrangements.	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
Table 9.1 & 10.8 (CM3)	Buffer trees for screening purposes to soften the hard architectural and engineering structures and facilities.	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
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
Table 9.1 &	Sensitive streetscape design should be incorporated along all new roads and streets.	N/A

EM&A Ref.	Recommendation Measures	Implementation Stage
10.8 (CM6)		
Table 9.1 & 10.8 (CM7)	Structure, ornamental planting shall be provided along amenity strips to enhance the landscape quality.	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
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
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
Table 9.2 & 10.9 (MCP3)	Adoption of light colour for the temporary ventilation shafts for the basement during the transition period.	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 - Not Applicable
✓ - Implemented
Obs - Observed
Rem - Reminder

Appendix L. 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) to the end of the reporting month and are summarized in the **Table L-1** below.

Table L-1: Statistics for complaints, notifications of summons and successful prosecutions

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