MOTT MACDONALD

Ocean Park Tai Shue Wan Water World Project

Monthly EM&A Report September 2017

October 2017

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This Monthly EM&A Report for September 2017 has been reviewed and certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC) as having complied with the requirements as set out in the EM&A Manual in accordance with Condition 3.4 of Environmental Permit No. EP-487/2014.

Certified by:

Gary Chow
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date: 12 OCT 2017

Verified by:

Gerald Kam
Independent Environmental Checker (IEC)
Ove Arup and Partners Hong Kong Limited

Date: 12 OCT 2017

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	Oct. 2017	Various	Gary Chow	Eric Ching	1st draft for client and IEC

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Contents

Executive Summary

Mott MacDonald Hong Kong Ltd. ("MMHK") has been commissioned by the Gammon Engineering & Construction Company Limited, to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit (EM&A) for Ocean Park Tai Shue Wan Development Water World.

This is the 4th monthly EM&A report for the construction phase of Waterpark Main Building Works submitted under Condition 3.4 of the Environmental Permit (No. EP-487/2014). This report summarises the findings on EM&A during the period from 1 to 30 September 2017.

Exceedance of Action and Limit Levels

The summary of measured noise level (as L_{eq}) is presented in **Section 3**. No exceedance of Action or Limit Levels for noise levels were recorded in the reporting month.

Result of Ecological Monitoring

The plant species of conservation interest - *Platycodon grandifloras* was found in fence up area in the reporting month. No sign of construction activities was noted in the fence up area.

Detail of the result is presented in **Section 4**.

Result of Landscape and Visual Monitoring

No non-compliance of Landscape and Visual monitoring was recorded in the reporting month. Detail of the result is presented in **Section 5.**

Record of Complaints

There was no record of complaints received in the reporting month.

Record of Notification of Summons and Successful Prosecutions

There were no record of notification of summons and successful prosecution in the reporting month.

Reporting Changes

There are no reporting changes.

Site inspection

In the Reporting Period, joint site inspections were undertaken by the PMR, ET and the Contractor on 1, 8, 15, 22 and 29 September 2017. Furthermore, IEC performed the site inspection and audit on 15 September 2017. During site inspection, non-compliance was not observed by the ET and IEC.

Future Key Issues

- Site formation for haul road construction
- Cut soil slope and soil nail installation for Ride P1, P2, P3, P4 and P5
- Rock breaking and slope stabilization works for Ride P3 and P5
- Construction of drainage channels to slopes
- Column and slab construction at Level 1 of primary RC structure

- Footing excavation for Plant room
- Bearing wall and Core wall construction
- Coring wall work
- Footing and underground utility construction for South Services Building
- Footing construction for primary RC structure at zone 01/03/04/05/06
- Scaffolding erection for A1 / B1 working area
- South Plant Room – Utility diversion (sewage pile, water pipe and power cables)
- South Plant Room – Excavation for footing

1 Introduction

1.1 Introduction

On 27 August 2014, the Environment Impact Assessment (EIA) Report and Environmental Monitoring and Audit (EM&A) Manual (Register No.: AEIAR-184/2014) for the "Tai Shue Wan Development at Ocean Park" (the Project) was approved and an Environmental Permit (EP) (Permit No.: EP-487/2014) was issued to the Ocean Park Corporation (Project Proponent). The layout plan of the Project is indicated in **Appendix A**.

Mott MacDonald Hong Kong Ltd. ("MMHK") has been commissioned by Gammon Engineering & Construction Company Limited to undertake the Environmental Team (ET) services to carry out environmental monitoring and audit for the Ocean Park Tai Shue Wan Water World Project.

As part of the EM&A program, baseline monitoring for the required parameters including background noise, landscape & visual baseline review and baseline ardeid inspection were carried out between 24 October 2014 and 10 December 2014 by the environmental consultants of Ocean Park Corporation. Furthermore, the baseline monitoring report which verified by the previous IEC was submitted to EPD and endorsed in December 2014.

The previous contract (Contract No.: TSW-C004) of Site Formation and Foundation Works has been completed since 31 May 2017, the next construction phase (Contract No.: TSW-C006) for the Ocean Park Tai Shue Wan Development was handed over to Gammon Engineering & Construction Company Limited on 31 May 2017. This is 4th monthly EM&A report presenting the monitoring results and inspection findings for the Construction Phase of Waterpark Main Building Works during the reporting period from 1 to 30 September 2017.

2 Project Organization and Construction Progress

2.1 Project Organization

The project organization is shown in **Appendix B**. The responsibilities of respective parties are:

Ocean Park Corporation

Ocean Park Corporation is the Project Proponent and the Permit Holder of the EP for the development of the Project and will assume overall responsibility for the project. An Independent Environmental Checker (IEC) shall be employed by Ocean Park Corporation to audit the results of the EM&A works carried out by the ET.

Environmental Protection Department (EPD)

EPD is the statutory enforcement body for environmental protection matters in Hong Kong.

Project Management Representative (PMR) of Ocean Park Corporation

The PMR is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:

- Monitor the Contractors' compliance with contract specifications, including the implementation and operation of the environmental mitigation measures and their effectiveness
- Monitor Contractors', ET's and IEC's compliance with the requirements in the Environmental Permit (EP) and EM&A Manual
- Facilitate ET's implementation of the EM&A programme
- Participate in joint site inspection by the ET and IEC
- Oversee the implementation of the agreed Event / Action Plan in the event of any exceedance
- Adhere to the procedures for carrying out complaint investigation
- Liaison with the related government departments, ET, IEC, the Contractor and the other Contractors of the Project discussing regarding the cumulative impact issues.

The Contractor

The duties and responsibilities of the Contractor are:

- Comply with the relevant contract conditions and specifications on environmental protection
- Employ an Environmental Team (ET) to undertake monitoring, laboratory analysis and reporting of EM &A Facilitate ET's monitoring and site inspection activities
- Participate in the site inspections by the ET and IEC, and undertake any corrective actions
- Provide information / advice to the ET regarding works programme and activities which may contribute to the generation of adverse environmental impacts
- Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event / Action Plans

- Implement measures to reduce impact where Action and Limit levels are exceeded
- Adhere to the procedures for carrying out complaint investigation

Environmental Team (ET)

The ET should be employed by the Contractor to conduct the EM&A programme. The ET should be managed by the ET Leader. ET Leader should have relevant professional qualifications in environmental control and possess at least 7 years' experience in EM&A. Suitably qualified professional and technical staff should be included in the ET, and resources for the implementation of the EM&A programme should be allocated in the time under the Contract, to enable fulfilment of the Project's EM&A requirements as specified in the EM&A Manual during construction of the Project. The ET shall include qualified botanist/ecologist for the ecological service and a Registered Landscape Architect for review of implementation of landscape and visual mitigation measures. The ET should report to the OPC and the duties should include:

- to monitor and audit various environmental parameters as required in the Approved EM&A Manual;
- to analyse the EM&A data, review the success of EM&A programme and the adequacy of mitigation measures implemented, confirm the validity of the EIA predictions, and identify any adverse environmental impacts arising;
- to monitor compliance with conditions in the EP, environmental protection, pollution prevention and control regulations and contract specifications;
- to audit environmental conditions on site;
- to report on the EM&A results to EPD, the ER, the IEC and Contractor or their delegated representatives;
- to recommend suitable mitigation measures to the Contractor in the case of exceedance of Action and Limit levels in accordance with the Event and Action Plans;
- to liaise with the IEC on all environmental performance matters, and ensure timely submission of all relevant EM&A pro forma for IEC's approval;
- to provide advice to the Contractor on environmental improvement, awareness and enhancement matters, etc on site;
- to adhere to the procedures for carrying out complaint investigation;
- to prepare reports on the environmental monitoring data and the site environmental conditions;
- to submit the EM&A report to Director of Environmental Protection (DEP) timely;
- to review proposals of mitigation measures from the Contractor in case of exceedance of Action and Limit levels, in accordance with the Event and Action Plan; and
- to carry out site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and mitigation measures.

Independent Environmental Checker (IEC)

- The IEC is empowered to audit the environmental performance of construction, but is independent from the management of construction works. As such, the IEC should not be in any way an associated body of the Contractor or the ET for the Project. The IEC should be employed by OPC prior to the commencement of the construction of the Project. The IEC should be a person who has relevant professional qualifications in environmental control and

at least 7 years' experience in EM&A and environmental management. The duties and responsibilities of the IEC are:

- to provide proactive advice to the ER and OPC on EM&A matters related to the project;
- to review and verify the monitoring data and all submissions in connection with the EP and EM&A Manual submitted by the ET;
- to arrange and conduct regular, at least monthly site inspections of the works during the construction phase, and to carry out ad hoc inspections if significant environmental problems are identified;
- to check compliance with the agreed Event and Action Plan in the event of any exceedance;
- to check compliance with the procedures for carrying out complaint investigation;
- to check the effectiveness of corrective measures;
- to feedback audit results to the ET by signing off relevant EM&A pro forma;
- to check that mitigation measures are effectively implemented;
- to report the works conducted, and the findings, recommendations and improvements of the site inspections, after reviewing ET's and Contractor's works, the ER and OPC on a monthly basis;
- to verify the investigation result of the environmental complaint cases and the effectiveness of corrective measures;
- to verify EM&A report that has been certified by the ET leader; and
- to audit EIA recommendations and requirements against the status of implementation of environmental mitigation measures on site.

2.2 Construction Progress

The construction program is enclosed in **Appendix C**. In the Reporting Period, the major construction activity conducted under the Contract is summarized in below:

- Site formation for haul road construction
- Foundation construction for tower crane erection
- Cut soil slope and soil nail installation for Ride P1, P2, P3, P4 and P5
- Rock breaking and slope stabilization works for Ride P1, P2, P3, P4 and P5
- Construction of drainage channels to slopes at P3 and P5
- Footing and underground utility construction for South Services Building
- Footing construction for primary RC structure at zone 01/03/06
- Column and slab construction at Level 1 of primary RC structure
- South Plant Room – Utility diversion (sewage pile, water pipe and power cables)
- South Plant Room – Excavation for footing

2.3 Summary of Environmental Submissions

Summaries of validity permits, licenses, and/or notifications on environmental protection for the Project are presented in **Table 1**.

Table 1: Status of Environmental Licenses and Permits of the Project

Type of Permit/ License	Submission Date	Reference / License No.	Date of Issue	Date of Expiry	Status
Environmental Permit	/	EP-487/2014	27-Aug-14	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation	15-Mar-17	414651	N/A	N/A	Valid
Application for a Billing Account for Disposal of Construction Waste	14-Dec-16	Account No. 7026786	28-Dec-16	N/A	Valid
Discharge Licence under WPCO WT00028196-2017	15-Mar-17	414650	29-May-17	31-May-22	Valid
Registration as a Chemical Waste Producer (WPN: 5213-176-G2785-01)	21-Apr-17	415966	31-May-17	N/A	Completed
Construction Noise Permit under NCO GW-RS0439-17	26-Apr-17	416080	15-May-17	29-Dec-17	Valid
Construction Noise Permit under NCO GW-RS0825-17	8-Sep-17	420985	22-Sep-17	21-Mar-18	Valid

To according with the EP stipulation, the required documents has been submitted to EPD for retention as listed below:

- Project Layout Plans
- Management Organization of Main Construction Companies
- Detailed Vegetation Survey Report
- Woodland Compensation Plan
- Ardeid Inspection Report
- Short-nosed Fruit Bat Inspection Report
- Baseline Monitoring Report Revision A of the Project

3 Construction Noise Monitoring

3.1 Monitoring Requirements, Frequency and Duration

Construction noise is one of the key environmental issue during the construction phase of the Project in accordance to the approved EM&A Manual. Following the requirements in the EM&A Manual, continuous noise monitoring for A-weighted levels L_{eq}, L_{10}, L_{90} shall be undertaken once every week during the construction phase. Measurement of L_{eq}(30min) between 07:00-19:00 hours on normal weekdays.

If construction works are necessary to carry out at other time periods, i.e. restricted time period (19:00-07:00 the next morning and whole day on public holidays) (hereinafter referred as "the restricted hours"), 3 consecutive L_{eq}(5min) measurements shall be recorded, while complying specific conditions as stipulated on the Construction Noise Permit (CNP). Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference. Summary of these monitoring requirements is listed in **Table 2**.

Table 2: Noise Monitoring Parameters

Monitoring Station	Parameters
NM1A and NM2	• $L_{eq(30min)}$ in normal working days (Monday to Saturday) 07:00-19:00 except public holiday; • 3 sets of consecutive Leq(5min) on restricted hours i.e. 19:00 to 07:00 next day, and whole day of public holiday or Sunday when applicable, and • Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference

The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. According to the approved EM&A Manual with baseline monitoring results, construction noise criterion, namely Action and Limit levels proposed are listed in **Table 3**.

Table 3: Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)
NM1A and NM2	When one or more documented complaints are received	70 dB(A)[1,2]

Note: 1. Acceptable noise levels for school should be reduced to 65 dB(A) during examination period
2. If works are to be carried out during restricted hours, the conditions stipulated in the CNP have to be followed.

3.2 Monitoring Locations

Two designated noise monitoring locations as established in the EM&A Manual is shown in **Appendix D**. After the baseline monitoring, alternative location NM1A has been proposed by MMHK due to rejection of the monitoring location set up at NM1. The proposal was verified and agreed by EPD in the Baseline Monitoring Report.

Table 4 and **Appendix E** respectively list and show the construction noise monitoring locations for the Project.

Table 4: Impact Monitoring locations

Monitoring location	Descriptions	Type of measurement
NM1A	Slope near Victoria Shanghai Academy (VSA) to replace NM1 of the VSA	Free field
NM2	Hong Kong Juvenile Care Centre (HKJCC)	Facade

3.3 Monitoring Equipment

Integrating sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms^{-1}. The acoustic calibrator and sound level meter to be used in the impact monitoring will be calibrated yearly.

Noise monitoring equipment used for monitoring is listed in **Table 5**.

Table 5: Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-52
Calibrator	Larson Davis CAL200
Portable Wind Speed Indicator	Anemometer/ Lutron AM-4201

3.4 Monitoring Methodology

Field Monitoring

- Sound Level Meter was set on a tripod at a height of at least 1.2m above ground.
- Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (L_{eq}) measured in decibels (dB). Supplementary statistical results (L_{10} and L_{90}) were also obtained for reference.
- Free field measurement was made at NM1A while facade measurement was made at NM2.
- The battery condition was checked to ensure the correct functioning of the meter.
- Prior of and after each noise measurement, the meter is calibrated using an acoustic calibrator for 94dB at 1kHz. The checking is performed before and after the noise measurement.
- During the monitoring, all noise measurements would be performed with the meter with Fast time weighting and on the A-weighted equivalent continuous sound pressure level (L_{eq}). L_{eq}(30min) as the monitoring parameter for the time period between 0700-1900 hours on weekdays; and also L_{eq}(15min) in three consecutive L_{eq}(5min) measurements would be used as monitoring parameter for other time periods (e.g. during restricted hours), if necessary. In addition, any site observations and noise sources were recorded on a standard record sheet.
- A correction of +3dB(A) was made to the free field measurement.
- Noise measurements were not made in fog, rain, wind with a steady speed exceeding $5ms^{-1}$ or wind with gust exceeding $10ms^{-1}$.

Equipment calibration

- The sound level meter and calibrator are calibrated and certified by a HOKLAS accredited laboratory at yearly intervals.

- Calibration records of sound level meter and calibrator, together with the Anemometer used for impact monitoring program in the Reporting Period are shown in **Appendix F**.

Meteorological Information

Meteorological information was extracted from "the Hong Kong Observatory Wong Chuk Hang Station" to provide the humidity, wind speed, wind direction and temperature etc. as background weather information. The meteorological data throughout the impact monitoring period is summarized in **Appendix K**.

Derivation of Action/Limit (A/L) Levels

According to the approved EM&A Manual and baseline monitoring results, Action and Limit levels proposed on construction noise criterion monitoring are listed in **Table 6**.

Table 6: Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)
	Time Period: 07:00-19:00 hours on normal weekdays	
NM1A and NM2	When one or more documented complaints are received	70 dB(A) [1, 2]

Note: 1. A correction of +3dB(A) was made to the free field measurement at monitoring station NM1A.
2. No examination has taken place during this reporting month.

Should non-compliance of the environmental quality criteria occur, remedial actions will be triggered according to the Event and Action Plan which presented in **Appendix G**.

Data Management and Data QA/QC Control

All monitoring data will be handled by the ET's in-house data recording and management system. The monitoring data recorded in the equipment will be downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data will input into a computerized database properly maintained by the ET.

3.5 Monitoring Schedule

Monitoring for noise levels due to construction work was undertaken during the reporting month in compliance with the EM&A manual in the Reporting Period. Regular monitoring surveys were carried out on 6th, 13th, 20th, 27th September 2017 during the reporting month to access the compliance with environmental requirements. A total of 8 occasions of noise monitoring surveys were carried out at the two noise monitoring locations.

3.6 Results of Impact Monitoring

As shown in **Table 7**, results of the noise monitoring measurement were below 70dB(A). No noise complaints were received in this reporting period. No exceedance (Action/Limit Level) of construction noise was thus recorded in this period.

Table 7: Summary of Construction Noise Monitoring Results

Monitoring date	Time		Mean and range of noise levels, dB(A)		Limit Level for L_{eq} (dB(A))[2]
	Start	Finish	L_{eq} (30min)	Corrected L_{eq}(30min)[1]	
NM1A					
06-Sep-17	10:00	10:30	58.6	61.6	70

Monitoring date	Time		Mean and range of noise levels, dB(A)		Limit Level for L_{eq} (dB(A))[2]
	Start	Finish	L_{eq} (30min)	Corrected L_{eq}(30min)[1]	
13-Sep-17	10:10	10:40	59.1	62.1	70
20-Sep-17	09:24	09:54	57.9	60.9	70
27-Sep-17	11:00	11:30	60.9	63.9	70
NM2					
06-Sep-17	09:10	09:40	53.9	-	70
13-Sep-17	09:23	09:53	56.0	-	70
20-Sep-17	08:40	09:10	53.5	-	70
27-Sep-17	10:08	10:38	54.4	-	70

Note: 1. A correction of +3dB(A) was made to the free field measurement at monitoring station NM1A.
2. No examination has taken place in this reporting month.

Summary of data and the supplementary information for data auditing is presented in **Appendix I**. Graphical plots of the monitoring data are as shown in **Appendix J**.

4 Ecology Monitoring

4.1 General

As required under the Section 8.3.2 of the approved EM&A Manual, the implementation of ecological mitigation measures as detailed in the Section 15 of the EIA report and **Appendix C** of the approved EM&A Manual shall be routinely audited during the routine environmental audit; and any observations and recommendations shall be reported in periodic EM&A reports.

Among those mitigation measures recommended to avoid or minimize the disturbance to any plants of conservation interest (EM&A reference 8.3.1.1), nested ardeids (EM&A reference 8.3.1.2) and roosted short-nosed fruit bat (EM&A reference 8.3.1.3), the required inspection has already been undertaken in August/September 2014 with the results presented in the submitted respective baseline report. Therefore, the following sections only address those applicable to this stage of the project, i.e., Section 8.3.2 of the approved EM&A Manual.

4.2 Monitoring Requirement

Monitoring of Plants of Conservation Interest (Platycondon grandiflorus)

According to Condition 2.6 of Environmental Permit No. EP-487/2014, the Detailed Vegetation Survey Report has located two groups of the protected *Platycodon grandiflorus* and recommended that the plants should be protected with temporary protective fencing to avoid potential impact from construction activities (such as material storage), and monitor the identified *Platycodon grandiflorus* on a monthly basis throughout the construction phase to make sure that they are not affected by the construction works of the Project. Accordingly, the following monitoring parameters will be undertaken on a monthly basis during the construction period:

- Effective implementation of the protection measures as recommended in the Section 4.1 of the Detailed Vegetation Survey Report
- Monitoring of the two groups of *Platycodon grandiflorus* identified during the detailed vegetation survey to make sure that they are not affected by the construction works

Monitoring of Nesting Activities of Ardeids in Breeding Season

The project area should be checked monthly in breeding season (April to July) for any potential breeding and nesting activities, and if required, suitably sized buffer area will be recommended to avoid human or machinery disturbance until the nest is abandoned.

Monitoring of Roosting Activities of Ardeids in Peak Wintering Season

The existing ardeid night roost within the project area should be monitored monthly during peak wintering season (November to March) during the construction phase using direct observation from a vantage point (i.e., point count method) at evening time from an hour before sunset, and last until the nightfall.

Compensation for Ardeid roosting Site

An enhancement area provided as an alternative roosting site for ardeids should be developed during the first phase of the construction.

Compensation of Woodland Habitat

Mitigation measures recommended in the approved Woodland Compensation Plan should be fully and properly implemented, including but not limited to the creation of 0.84 ha woodland compensation on-site and 0.78 ha on-site woodland reinstatement, to mitigate for permanent loss of woodland habitat.

4.3 Inspection Findings

The ecological inspection was undertaken on 22 September 2017 by the qualified ecologist. The inspection findings are presented below.

Plants of Conservation Interest (Platycodon grandiflorus)

Platycodon grandiflorus is a perennial herb up to 120 cm high. Stems erect and scarcely any branches. It is often found on sunny grassy hillslopes in brushes. Two groups of *Platycodon grandiflorus* (see Figure 1 of **Appendix L** for their locations) that were recorded in 2015's growing season within the fenced area.

It was observed that new branches were grown from the stem in both two groups after the severe typhoon HATO battered Hong Kong on 23 August 2017 (see Photos 1 and 2 of **Appendix L** of this report).

The preventive mitigation measures, i.e., erecting of temporary protective fencing and sign post, were found to be effectively implemented for human disturbance (see Photo 3 of **Appendix L** of this report), and there is no signs or evidence (e.g. dust coating of plant) to suggest that the on-going construction activities within the Project Area has affected the health condition of the *Platycodon grandiflorus*.

Nesting Activities of Ardeids in Breeding Season

This monitoring parameter only required during the breeding season of ardeids, i.e., from April to July, and the last monitoring event for nesting activities of Ardeids in the 2017's breeding season was undertaken on 21 July 2017, and such monitoring would not be required for the reporting period.

Roosting Activities of Ardeids in Peak Wintering Season.

In accordance with the approved EM&A Manual, this monitoring parameter would not be required beyond the Peak Wintering season, i.e., from 1st November to 31st March.

Compensation for Ardeid roosting Site

To be implemented.

Compensation of Woodland Habitat

To be implemented.

4.4 Conclusion

The implementation of the mitigation measures for the plant species of conservation interest, i.e., erecting of temporary protective fencing and sign post during the reporting period was noted. The two groups of *Platycodon grandiflorus* within the fenced area were grown new branches from stem after severe typhoon HATO battered Hong Kong on 23 August 2017 as mentioned in Section 4.3.

The tentative ecological inspection and monitoring in the next reporting period is scheduled on 20 October 2017.

5 Landscape & Visual Monitoring

5.1 General

Landscape and visual mitigation measures for the construction phase are listed in the Approved EM&A Manual Table 9.1.

The design, implementation and maintenance of landscape and visual mitigation measures shall be checked bi-weekly to ensure that they are fully realized during the construction phase. The scope of the site audit during construction shall include the following:

- The extent of the agreed works areas should be regularly checked. No construction activities or storage shall be undertaken outside the limit of the works;
- The progress of the engineering works should be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken;
- All landscaping works are carried out in accordance with the specifications; and
- All new plantings are carried out properly and during the right season.

Any potential conflicts between the proposed landscape and visual mitigation measures and any other project works or operational requirements shall be recorded for the Contractor to resolve in an early stage, without compromising the intention of the mitigation measures.

5.2 Inspection Findings

In the Reporting Period, bi-weekly landscape and visual site inspection were conducted on 8 September 2017 and 22 September 2017.

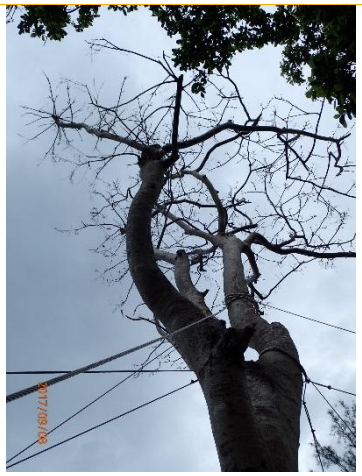
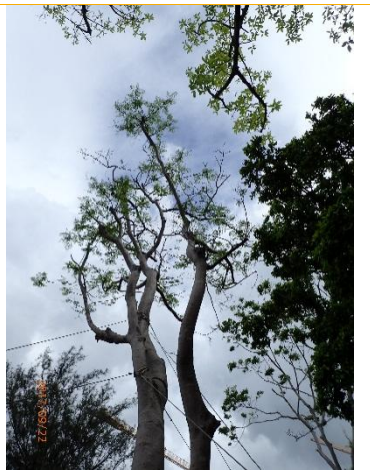
According to the bi-weekly site inspections, it was observed that the Contractor complied with the intended aims of the mitigation measures, for example, no construction activities or materials storage conducted and placed outside of the working site boundary.

The Contractor was advised to improve and maintain the tree protection zone.

On 8 September 2017, A0090 and A0091 were observed with yellowing of normally green leaves and large portion of drooping leaves due to severe typhoon HATO battered Hong Kong on 23 August 2017. Close monitoring of these trees is recommended.

On 22 September 2017, A0090 and A0091 were observed with new leaves (as shown in **Table 8**). Although new leaves observed on these trees, close monitoring is still recommended.

Table 8: Photo record for the tree condition

Tree no.		
A0090		
	Photo taken on 8 Sep 2017	Photo taken on 22 Sep 2017
A0091		
	Photo taken on 8 Sep 2017	Photo taken on 22 Sep 2017

6 Waste Management

6.1 General Waste Management

Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

6.2 Records of Waste Quantities

All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

Monthly Summary Waste Flow Table provided by the Contractor is shown in **Appendix M**. Materials were reused on-site as far as practicable.

7 Site Inspection

7.1 Requirements

According to the approved EM&A Manual, the environmental site inspection shall be formulated by the ET Leader. Weekly environmental site inspections should be carried out to confirm the environmental performance.

7.2 Findings / Deficiencies during the reporting month

In the Reporting Period, joint site inspections were undertaken by the PMR, ET and the Contractor on 1, 8, 15, 22 and 29 September 2017. Furthermore, IEC performed the site inspection and audit on 15 September 2017. During site inspection, non-compliance was not observed by the ET and IEC.

During site inspections, non-compliance was not observed by the ET and IEC. However, total of ten observations were recorded in the Reporting Period. The findings / deficiencies of the Project observed during the weekly site inspections are listed in **Table 9**.

Table 9: Summary of findings / deficiencies

Date	Findings / Deficiencies	Follow-up Status
1 Sep 2017	Trip tray should be provided for the chemical containers.	Chemical container has been removed and chemical tank has been used on 15 Sept 2017.
1 Sep 2017	Water accumulated in drip tray of oil drum should be cleared.	Water accumulated in drip tray of oil drum has been cleared on 8 Sep 2017.
1 Sep 2017	Water accumulated in drip tray under electric generator should be cleared.	Water accumulated in drip tray under electric generator has been cleared on 8 Sep 2017.
8 Sep 2017	Water accumulated in container should be cleared to prevent mosquito breeding.	Container was storage properly to avoid water accumulated on 15 Sep 2017.
8 Sep 2017	Mixed waste should be separated to general waste and non-inert C&D material.	No mixed material was observed on 15 Sep 2017.
15 Sep 2017	Water spraying should be provided for demolish work.	Water spraying during demolish work was observed on 22 Sep 2017.
22 Sep 2017	NRMM label on generator was faded out, the contractor was reminded to rectify.	NRMM label has been re-printed for recognize on 29 Sep 2017.
22 Sep 2017	General waste was observed in nursery, the contractor was reminded to clear	General waste has been cleared to maintain good environment
29 Sep 2017	Trip tray should be provided for the diesel containers.	-
29 Sep 2017	Stagnant water and general waste was observed in pumping station	-

For the above deficiencies found in the Reporting Period, the Contractor has rectified immediately or within deadline. So, environmental performance of the Project managed by the Contractor with OPC was considered satisfactory.

Specially, attention on the mitigation measures to prevent runoff flow to public area and the sea shall be paid and properly implemented.

General reminded that dust mitigation measures should be provided to prevent fugitive dust from haul road, stockpile materials and construction activities; and the site housekeeping should

be maintained. Furthermore, all chemical materials after using shall be stored in the designated area.

8 Environmental Complaint, Summons and Prosecution

8.1 Environmental Complaint, Summons and Prosecution

No environmental complaint, summons and prosecution were received in the Reporting Period.

The statistical summary for environmental complaints is presented in **Table 10.**

Table 10: Statistics for complaints, notifications of summons and successful

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This report month	0	0	0

9 Implementation Status of Mitigation Measures

9.1 General Requirements

The environmental mitigation measures that were recommended in the Implementation Schedule for Environmental Mitigation Measures in the approved EM&A Manual covered the issues of dust, noise, water and waste and are presented in **Appendix N.**

The Project shall be implementing the required environmental mitigation measures according to the approved EM&A Manual as subject to the site condition. Environmental mitigation measures generally implemented by the Contractor in this Reporting Month are summarized in **Table 11.**

Table 11: Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Construction Noise	• Shut down construction equipment when not using
Ecology	• Wire fencing provided for temporary protect the identified flora species of conservation concern • Undertake site inspection of the flora species of conservation and the Ardeid of breeding and nesting activities
Landscape & Visual	• Good site management
Air Quality	• Good site management to reduce air quality impact • Main temporary access road paved with concrete • Prior to any loading or transfer operation, all dusty materials has sprayed with water to keep its wet • Any debris has covered entirely by impervious sheeting • Before debris dumped into a chute, water has sprayed onto the debris to make its wet • Vehicles has covered with tarpaulin during transporting dusty materials • When vehicles leaving the construction site, any vehicles loaded dusty materials covered with clean impervious sheeting as prevent fugitive dusty materials emission • The speed of the trucks passing site areas was controlled to below 10 km/hour • Water spray has been provided for soil-nailing work
Water Quality	• Portable chemical toilets have provided on site • A licensed collector has employed to collect effluent and off-site dispose.
Waste and Chemical Management	• A temporary container which located far away from sea shore and drainage channel, has provided for chemical materials and waste storage • Drip tray is provided for chemical materials which use on the working areas • Has provided a waste skip for general refuse disposal
General	• The site was generally kept tidy and clean

9.2 Tentative Construction Activities in the Coming Month

Construction activities to be undertaken in the coming month for the Project are listed below:

- Site formation for haul road construction

- Cut soil slope and soil nail installation for Ride P1, P2, P3, P4 and P5
- Rock breaking and slope stabilization works for Ride P3 and P5
- Construction of drainage channels to slopes
- Column and slab construction at Level 1 of primary RC structure
- Footing excavation for Plant room
- Bearing wall and Core wall construction
- Coring wall work
- Footing and underground utility construction for South Services Building
- Footing construction for primary RC structure at zone 01/03/04/05/06
- Scaffolding erection for A1 / B1 working area
- South Plant Room – Utility diversion (sewage pile, water pipe and power cables)
- South Plant Room – Excavation for footing

9.3 Key Issues for the Coming Month

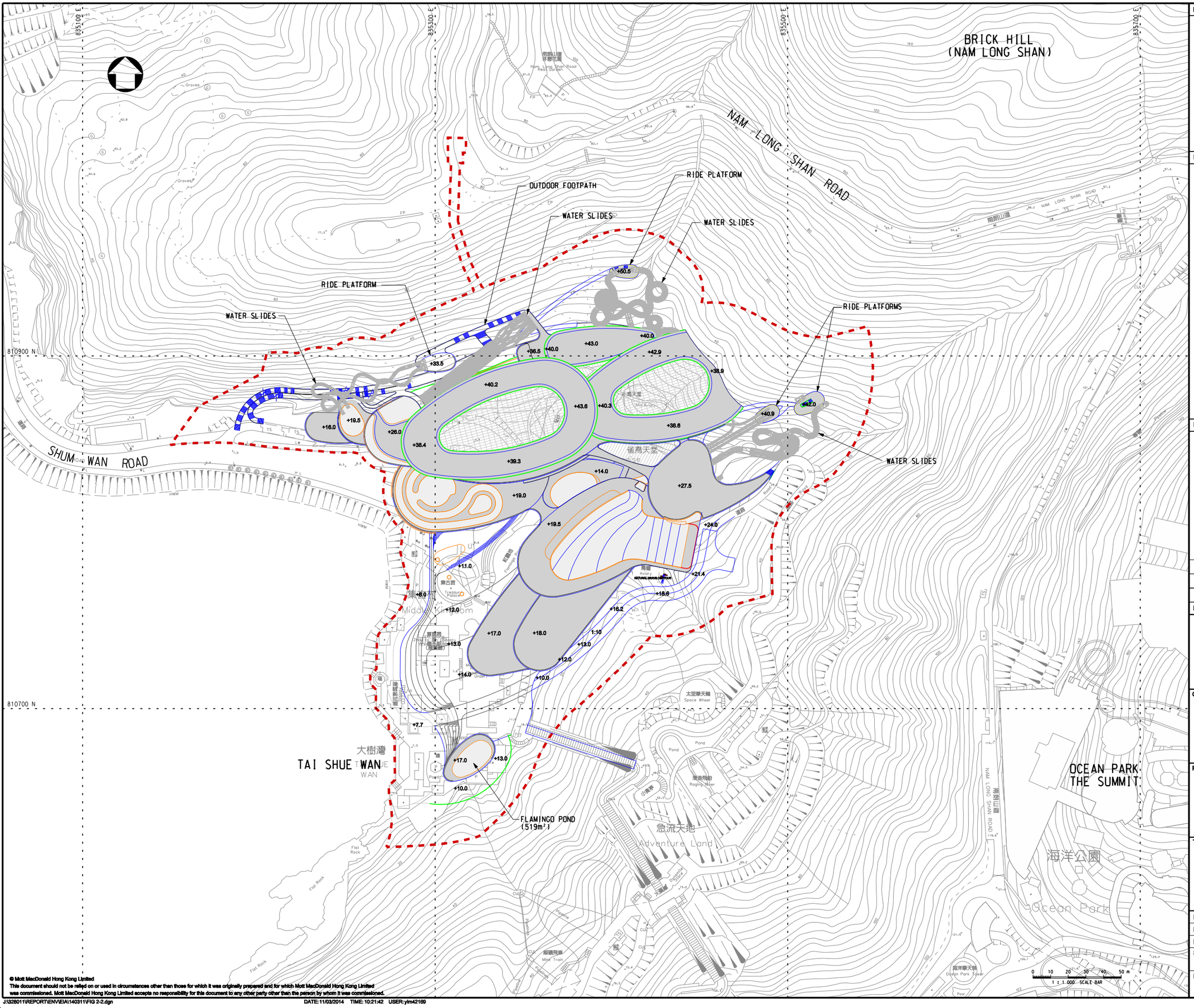
Based on construction activities as undertaken in the coming month, key environment issues consider to be included:

- Potential fugitive dust impact due to the dry/loose/exposure soil surface/dusty material;
- Potential water quality impact due to surface runoff especially on the hillside;
- Implement dust suppression measures at the all times;
- Ensure noise and dust mitigation measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Site effluent discharge shall be fulfilled the discharge license requirements;
- Management of chemical wastes properly implement;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures.

10 Recommendation

- All drainage facilities, erosion and sedimentation control structures (including the sedimentation tanks installed on site) should be regularly inspected and maintained in good condition, especially during the wet season.
- Noise mitigation measures, including the use of quiet plants, should be implemented in accordance with the EM&A requirement.

A. Layout Plan of the Project



Notes

Key to symbols

PROJECT BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	MAR 14	MING	GENERAL REVISION	RH	AFK
P2	FEB 14	MING	GENERAL REVISION	RH	AFK
P1	JAN 14	MING	FIRST ISSUE	GC	AFK

Mott MacDonald

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W www.mottmac.com.hk

Client

Ocean Park Hong Kong 香港海洋公園

Project

TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

Title

PROJECT LAYOUT PLAN

Designed	HY		Eng check	FW	
Drawn	MING		Coordination	FW	
Dwg check	HY		Approved	AFK	
Scale at A1 1:1000		Status PRE		Rev P3	

Drawing Number

FIGURE 2.6

B. Project Organisation

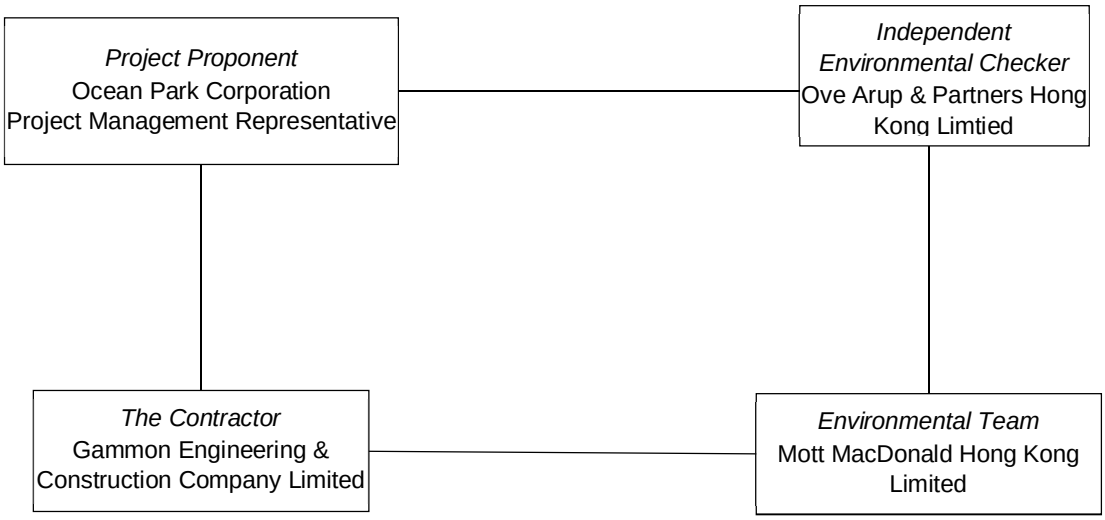
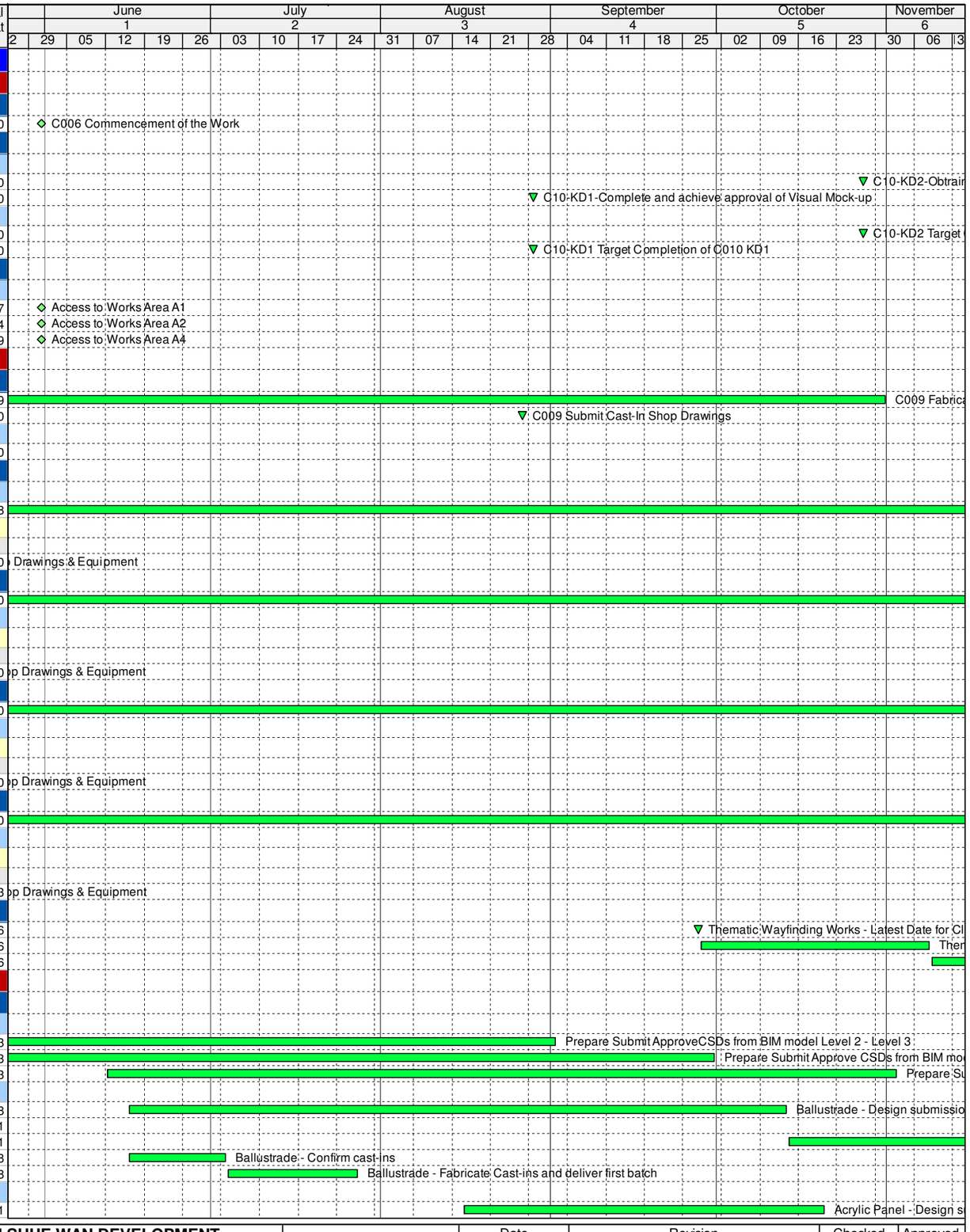


Table A: Contact information

Company / Department	Position	Name	Telephone / Mobile	Fax No.
Ocean Park Corporation	Project Management Representative	Mr Augustine Li	2870 6130	2814 0179
Ove Arup & Partners Hong Kong Ltd.	Independent Environmental Checker	Mr Gerald Kam	2268 3915	2268 3950
Mott MacDonald Hong Kong Ltd.	Environmental Team Leader	Mr Gary Chow	2828 5874	2827 1823
Mott MacDonald Hong Kong Ltd.	Qualified Ecologist	Mr Roy Hung	2828 5965	2827 1823
Gammon Engineering & Construction Company Limited	Construction Manager	Mr Paul Leaver	3690 9229	2148 2890
Gammon Engineering & Construction Company Limited	Environmental Officer	Ms Sammie Chan	2269 1507	2148 2890

C. 3-month Look-ahead Program

ID	Activity	Duration	Start	Finish	Total Float
OCEAN PARK - TAI SHUE WAN WATER WORLD PROJECT Master 20171003 (Impacted Revised ride sequence&re)					
CONTRACT DATES					
Commencement of the Works					
CD.C06.1000	C006 Commencement of the Work	0	31-May-17*		0
Key Dates					
Contract					
CD.C10-KD2	C10-KD2-Obtrain BD Approval of all Designs Submission	0		27-Oct-17*	0
CD.C10-KD1	C10-KD1-Complete and achieve approval of Visual Mock-up	0		28-Aug-17*	0
Impacted Key Dates					
CD.C10-TD2	C10-KD2 Target Completion of C010 KD2	0		27-Oct-17	0
CD.C10-TD1	C10-KD1 Target Completion of C010 KD1	0		28-Aug-17	0
Site Possession Date					
Access Dates					
CD.C06.A1	Access to Works Area A1	0	31-May-17		-67
CD.C06.A2	Access to Works Area A2	0	31-May-17		-154
CD.C06.A4	Access to Works Area A4	0	31-May-17		199
NOMINATED SUB-CONTRACTORS					
C009 - Lifts					
NS.C009.1110	C009 Fabrication	200	15-Apr-17	31-Oct-17	709
NS.C009.1130	C009 Submit Cast-In Shop Drawings	0		26-Aug-17*	0
CONTRACT DATES					
NS.C009.1140	09-KD1 Subit Shop Drawings	0		14-Apr-17*	0
C011- Water Filtration System Advance Contract					
Contract Dates					
OP.320	C011 Fabrication	300	18-Apr-17	21-Apr-18	38
Key Dates					
Contract					
NS.C11-KD1	C011 - KD1: Submit & Approval of Shop Drawings & Equipment	0		14-Apr-17*	0
C012A - Gas Absorption Chillers & Associated Works					
NS.C12A.1160	C012A Fabrication	260	18-Apr-17	01-Mar-18	40
Contract Dates					
Key Dates					
Contract					
NS.C12A-KD1	C012A - KD1: Submit & Approval of Shop Drawings & Equipment	0		14-Apr-17*	0
C012B - Gas Condensing Boilers & Associated Works					
NS.C12B.1170	C012B Fabrication	260	18-Apr-17	01-Mar-18	40
Contract Dates					
Key Dates					
Contract					
NS.C12B-KD1	C012B - KD1: Submit & Approval of Shop Drawings & Equipment	0		14-Apr-17*	0
C012C - Chimney for Gas Chillers & Boilers					
NS.C12C.1110	C012C - Fabrication	260	18-Apr-17	01-Mar-18	40
Contract Dates					
Key Dates					
Contract					
NS.C12C-KD1	C012C - KD1: Submit & Approval of Shop Drawings & Equipment	0		14-Apr-17	53
Thematic Works & Wayfinding Signage					
NS.DS.1100	Thematic Wayfinding Works - Latest Date for Client to instruct invitation (TA.4)	0		27-Sep-17	106
NS.DS.1110	Thematic Works Tender Period & return of Tender	42	28-Sep-17	08-Nov-17	106
NS.DS.1120	Joint review & award of Thematic Works contract	30	09-Nov-17	08-Dec-17	106
DESIGN					
Contractor Design					
CSDs					
DS.CSDX.1040	Prepare Submit ApproveCSDs from BIM model Level 2 - Level 3	120	07-Apr-17	01-Sep-17	63
DS.CSDX.1050	Prepare Submit Approve CSDs from BIM model Level 3 - Roof	120	12-May-17	30-Sep-17	63
DS.CSDX.1060	Prepare Submit Approve CSDs from BIM model Level 1 - Level 2	120	12-Jun-17	02-Nov-17	63
Balustrade					
DS.CDBL.1110	Ballustrade - Design submission & Approvals	100	16-Jun-17	13-Oct-17	8
DS.CDBL.1120	Ballustrade - Fabricate & progressively deliver	90	27-Nov-17	17-Mar-18	41
DS.CDBL.1150	Ballustrade - Mock-up & Approval	36	14-Oct-17	25-Nov-17	41
DS.CDBL.1140	Ballustrade - Confirm cast-ins	14	16-Jun-17	03-Jul-17	8
DS.CDBL.1160	Ballustrade - Fabricate Cast-ins and deliver first batch	21	04-Jul-17	27-Jul-17	8
Acrylic Panel					
DS.CDAP.1110	Acrylic Panel - Design submission & Approvals	55	16-Aug-17	20-Oct-17	1



critical level of effort
Critical Remaining Work
Current
Milestone
Milestone
% Complete

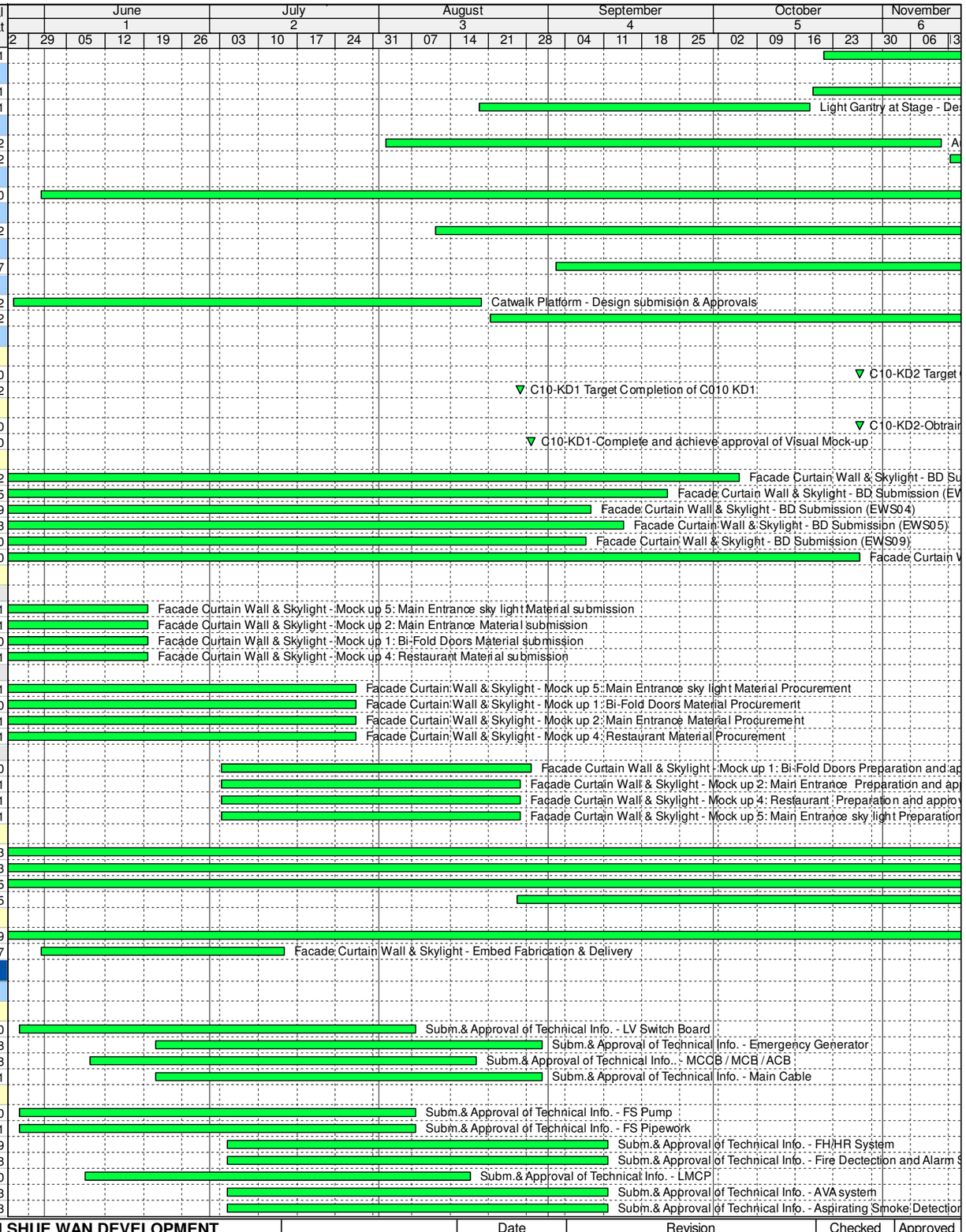
Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
Page: 1 of 18

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
DS.CDAP.1120	Acrylic Panel - Fabricate & progressively deliver	100	21-Oct-17	22-Feb-18	1
Light Gantry at Stage					
DS.CDLG.1120	Light Gantry at Stage - Fabricate & progressively deliver	90	19-Oct-17	05-Feb-18	51
DS.CDLG.1140	Light Gantry at Stage - Design submission and approval	50	19-Aug-17	18-Oct-17	51
Automatic Drip Irrigation System					
DS.CDIS.1110	Automatic Drip Irrigation System - Design submision & Approvals	85	02-Aug-17	11-Nov-17	172
DS.CDIS.1120	Automatic Drip Irrigation System - Fabricate & Deliver	90	13-Nov-17	03-Mar-18	172
Water Effect System of Water Features					
DS.CDWF.1110	Water Effect System of Water Features - Sub-Con.procurement/Design & Approvals	187	31-May-17	11-Jan-18	160
Fabric Canopies					
DS.CDFC.1110	Fabric Canopies - Design & Approvals	187	11-Aug-17	27-Mar-18	2
Greenwall					
DS.CDGW.1150	Greenwall - Design submision & Approvals	72	02-Sep-17	28-Nov-17	87
Catwalk platform over L1 Locker room					
DS.CDCP.1150	Catwalk Platform - Design submision & Approvals	72	26-May-17	19-Aug-17	252
DS.CDCP.1160	Catwalk Platform - Fabricate & progressively deliver	100	21-Aug-17	18-Dec-17	252
C010 - Facade Curtain Wall & Skylight					
Target Key Dates					
CD.C10-TD23	C10-KD2 Target Completion of C010 KD2	0		27-Oct-17	0
CD.C10-TD13	C10-KD1 Target Completion of C010 KD1	0		26-Aug-17	2
Key Dates					
CD.C10-KD23	C10-KD2-Obtrain BD Approval of all Designs Submission	0		27-Oct-17*	0
CD.C10-KD13	C10-KD1-Complete and achieve approval of Visual Mock-up	0		28-Aug-17*	0
C010 - BD Submission					
DS.DMBD1000	Facade Curtain Wall & Skylight - BD Submission (EWS01 & EWS02)	138	21-May-17	05-Oct-17	22
DS.DMBD1010	Facade Curtain Wall & Skylight - BD Submission (EWS03)	138	08-May-17	22-Sep-17	35
DS.DMBD1020	Facade Curtain Wall & Skylight - BD Submission (EWS04)	138	24-Apr-17	08-Sep-17	49
DS.DMBD1030	Facade Curtain Wall & Skylight - BD Submission (EWS05)	133	05-May-17	14-Sep-17	43
DS.DMBD1050	Facade Curtain Wall & Skylight - BD Submission (EWS09)	138	23-Apr-17	07-Sep-17	50
DS.DMBD1040	Facade Curtain Wall & Skylight - BD Submission (EWS08B & 08C)	163	18-May-17	27-Oct-17	0
C010 - Visual Mock Up					
Material submission for Visual Mock up					
DS.DMVM3030	Facade Curtain Wall & Skylight - Mock up 5: Main Entrance sky light Material submission	48	03-May-17	19-Jun-17	1
DS.DMVM3040	Facade Curtain Wall & Skylight - Mock up 2: Main Entrance Material submission	48	03-May-17	19-Jun-17	1
DS.DMVM3050	Facade Curtain Wall & Skylight - Mock up 1: Bi-Fold Doors Material submission	48	03-May-17	19-Jun-17	0
DS.DMVM3060	Facade Curtain Wall & Skylight - Mock up 4: Restaurant Material submission	48	03-May-17	19-Jun-17	1
Material procurement					
DS.DMVM3110	Facade Curtain Wall & Skylight - Mock up 5: Main Entrance sky light Material Procurement	76	26-Apr-17	27-Jul-17	1
DS.DMVM3000	Facade Curtain Wall & Skylight - Mock up 1: Bi-Fold Doors Material Procurement	76	26-Apr-17	27-Jul-17	0
DS.DMVM3010	Facade Curtain Wall & Skylight - Mock up 2: Main Entrance Material Procurement	76	26-Apr-17	27-Jul-17	1
DS.DMVM3020	Facade Curtain Wall & Skylight - Mock up 4: Restaurant Material Procurement	76	26-Apr-17	27-Jul-17	1
Preparation and submission of Visual Mock up					
DS.DMVM3070	Facade Curtain Wall & Skylight - Mock up 1: Bi-Fold Doors Preparation and approve	49	03-Jul-17	28-Aug-17	0
DS.DMVM3090	Facade Curtain Wall & Skylight - Mock up 2: Main Entrance Preparation and approve	48	03-Jul-17	26-Aug-17	1
DS.DMVM3100	Facade Curtain Wall & Skylight - Mock up 4: Restaurant Preparation and approve	48	03-Jul-17	26-Aug-17	1
DS.DMVM3080	Facade Curtain Wall & Skylight - Mock up 5: Main Entrance sky light Preparation and approve	48	03-Jul-17	26-Aug-17	1
C010 - Performance Test					
DS.DMPT1020	Facade Curtain Wall & Skylight - Performance test for EWSW 01	165	24-May-17	07-Dec-17	3
DS.DMPT1030	Facade Curtain Wall & Skylight - Performance test for EWSW 02	165	24-May-17	07-Dec-17	3
DS.DMPT1040	Facade Curtain Wall & Skylight - Performance test for EWSW 03	163	24-May-17	05-Dec-17	5
DS.DMPT1050	Facade Curtain Wall & Skylight - Performance test for EWSW 04	84	26-Aug-17	05-Dec-17	5
C010 - Fabrication and Delivery					
DS.DMFD1000	Facade Curtain Wall & Skylight - Material Fabricate, Assemble & Deliver	400	17-May-17	20-Jun-18	49
DS.DMFD1010	Facade Curtain Wall & Skylight - Embed Fabrication & Delivery	45	31-May-17	14-Jul-17	107
E&M Major Equipment / Material					
Preliminary, Material Submission					
Electrical					
EM.PD002001	Subm.& Approval of Technical Info. - LV Switch Board	60	27-May-17	07-Aug-17	50
EM.PD002011	Subm.& Approval of Technical Info. - Emergency Generator	60	21-Jun-17	30-Aug-17	78
EM.PD002021	Subm.& Approval of Technical Info.. - MCCB / MCB / ACB	60	09-Jun-17	18-Aug-17	48
EM.PD002031	Subm.& Approval of Technical Info. - Main Cable	60	21-Jun-17	30-Aug-17	1
Fire Services					
EM.PD003001	Subm.& Approval of Technical Info. - FS Pump	60	27-May-17	07-Aug-17	50
EM.PD003011	Subm.& Approval of Technical Info. - FS Pipework	60	27-May-17	07-Aug-17	51
EM.PD003021	Subm.& Approval of Technical Info. - FH/HR System	60	04-Jul-17	11-Sep-17	59
EM.PD003031	Subm.& Approval of Technical Info. - Fire Dectection and Alarm System	60	04-Jul-17	11-Sep-17	108
EM.PD003041	Subm.& Approval of Technical Info. - LMCP	60	08-Jun-17	17-Aug-17	0
EM.PD003051	Subm.& Approval of Technical Info. - AVA system	60	04-Jul-17	11-Sep-17	93
EM.PD003061	Subm.& Approval of Technical Info. - Aspirating Smoke Detection System	60	04-Jul-17	11-Sep-17	93



critical level of effort — Critical Remaining Work
Current
Milestone
Milestone
% Complete

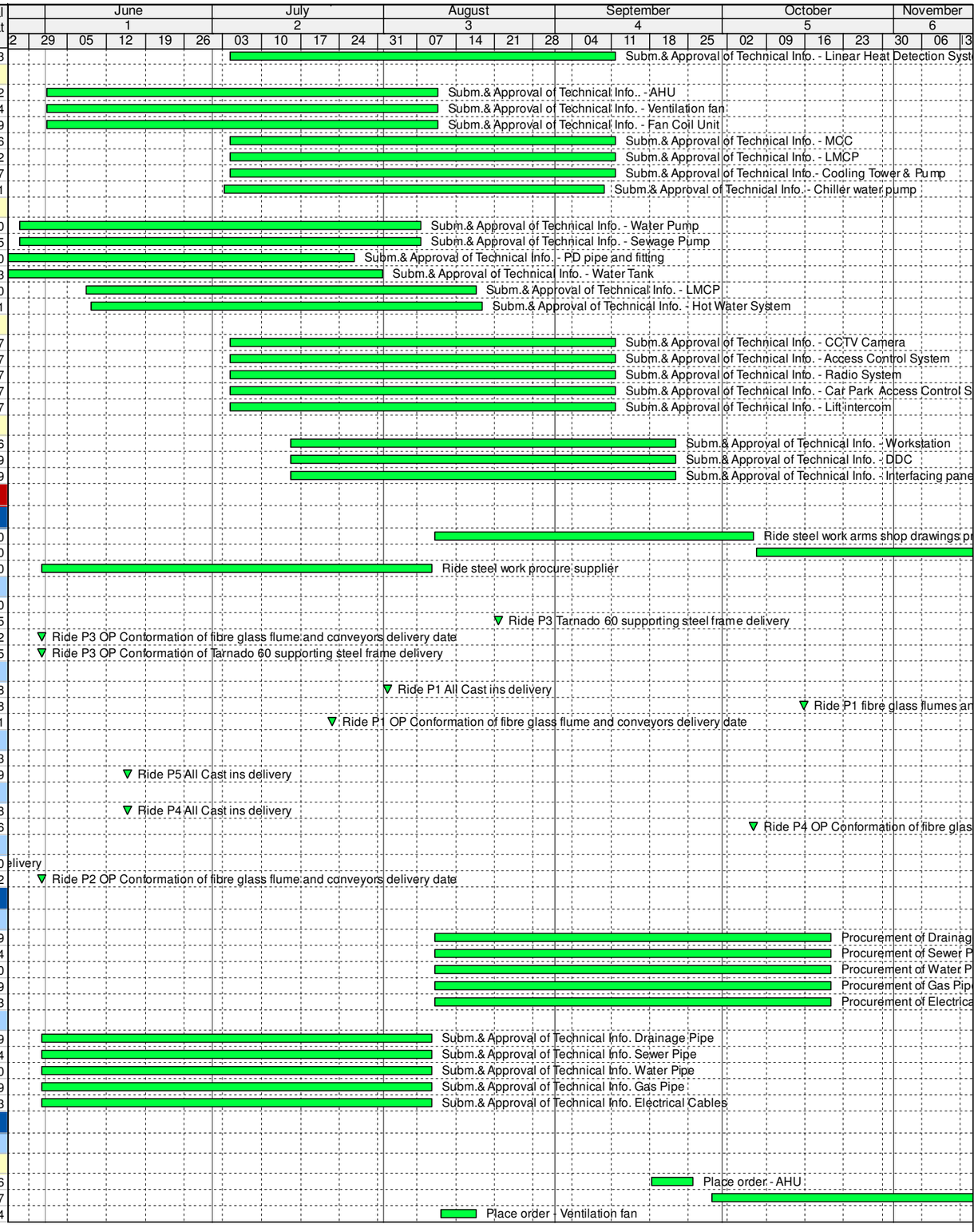
Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
Page: 2 of 18

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
EM.PD003071	Subm.& Approval of Technical Info. - Linear Heat Detection System	60	04-Jul-17	11-Sep-17	93
HVAC					
EM.PD001001	Subm.& Approval of Technical Info.. - AHU	60	01-Jun-17	10-Aug-17	62
EM.PD001011	Subm.& Approval of Technical Info. - Ventilation fan	60	01-Jun-17	10-Aug-17	44
EM.PD001051	Subm.& Approval of Technical Info. - Fan Coil Unit	60	01-Jun-17	10-Aug-17	59
EM.PD001071	Subm.& Approval of Technical Info. - MCC	60	04-Jul-17	11-Sep-17	626
EM.PD001061	Subm.& Approval of Technical Info. - LMCP	60	04-Jul-17	11-Sep-17	2
EM.PD001081	Subm.& Approval of Technical Info.- Cooling Tower & Pump	60	04-Jul-17	11-Sep-17	57
EM.PD001091	Subm.& Approval of Technical Info. - Chiller water pump	60	03-Jul-17	09-Sep-17	141
Plumbing & Drainage					
EM.PD004001	Subm.& Approval of Technical Info. - Water Pump	60	27-May-17	07-Aug-17	50
EM.PD004011	Subm.& Approval of Technical Info. - Sewage Pump	60	27-May-17	07-Aug-17	85
EM.PD004021	Subm.& Approval of Technical Info. - PD pipe and fitting	60	16-May-17	26-Jul-17	50
EM.PD004031	Subm.& Approval of Technical Info. - Water Tank	60	20-May-17	31-Jul-17	13
EM.PD004041	Subm.& Approval of Technical Info. - LMCP	60	08-Jun-17	17-Aug-17	0
EM.PD004051	Subm.& Approval of Technical Info. - Hot Water System	60	09-Jun-17	18-Aug-17	151
ELV					
EM.PD005001	Subm.& Approval of Technical Info. - CCTV Camera	60	04-Jul-17	11-Sep-17	97
EM.PD005002	Subm.& Approval of Technical Info. - Access Control System	60	04-Jul-17	11-Sep-17	97
EM.PD005003	Subm.& Approval of Technical Info. - Radio System	60	04-Jul-17	11-Sep-17	97
EM.PD005004	Subm.& Approval of Technical Info. - Car Park Access Control System	60	04-Jul-17	11-Sep-17	97
EM.PD005005	Subm.& Approval of Technical Info. - Lift intercom	60	04-Jul-17	11-Sep-17	97
CCMS					
EM.PD006001	Subm.& Approval of Technical Info. - Workstation	60	15-Jul-17	22-Sep-17	116
EM.PD006002	Subm.& Approval of Technical Info. - DDC	60	15-Jul-17	22-Sep-17	49
EM.PD006003	Subm.& Approval of Technical Info. - Interfacing panel	60	15-Jul-17	22-Sep-17	49
PROCUREMENT					
Ride Procurement					
RSW.SD.1000	Ride steel work arms shop drawings prepare and submit	48	10-Aug-17	06-Oct-17	-30
RSW.SD.1010	Ride steelwork arms fabrication	80	07-Oct-17	12-Jan-18	-30
RSW.SD.1030	Ride steel work procure supplier	60	31-May-17	09-Aug-17	-30
Ride P3					
PR.R03.1010	Ride P3 All Cast ins delivery	0		15-Apr-17*	0
PR.R03.1040	Ride P3 Tarnado 60 supporting steel frame delivery	0		21-Aug-17*	35
PR.R03.1020	Ride P3 OP Conformation of fibre glass flume and conveyors delivery date	0		31-May-17*	142
PR.R03.1025	Ride P3 OP Conformation of Tarnado 60 supporting steel frame delivery	0		31-May-17*	35
Ride P1					
PR.R01.1010	Ride P1 All Cast ins delivery	0		01-Aug-17*	168
PR.R01.1030	Ride P1 fibre glass flumes and conveyor delivery	0		15-Oct-17*	238
PR.R01.1020	Ride P1 OP Conformation of fibre glass flume and conveyors delivery date	0		22-Jul-17	191
Ride P5					
PR.R045.1020	Ride P5 OP Conformation of fibre glass flume and conveyors delivery date	0		16-Nov-17*	133
PR.R045.1060	Ride P5 All Cast ins delivery	0		15-Jun-17*	209
Ride P4					
PR.R045.1010	Ride P4 All Cast ins delivery	0		15-Jun-17*	228
PR.R045.1050	Ride P4 OP Conformation of fibre glass flume and conveyors delivery date	0		06-Oct-17*	246
Ride P2					
PR.R02.1010	Ride P2 All Cast ins delivery	0		01-May-17*	0
PR.R02.1020	Ride P2 OP Conformation of fibre glass flume and conveyors delivery date	0		31-May-17*	142
Major Procurement					
Procurement and delivery					
PC.DRA.1100	Procurement of Drainage Pipe	60	10-Aug-17	20-Oct-17	199
PC.SEW.1000	Procurement of Sewer Pipe	60	10-Aug-17	20-Oct-17	204
PC.WAT.1100	Procurement of Water Pipe	60	10-Aug-17	20-Oct-17	250
PC.PRO.1100	Procurement of Gas Pipe	60	10-Aug-17	20-Oct-17	399
PC.ECA.1100	Procurement of Electrical Cables	60	10-Aug-17	20-Oct-17	303
Submission of Technical Inromation					
ST.PW.1000	Subm.& Approval of Technical Info. Drainage Pipe	60	31-May-17	09-Aug-17	199
ST.PW.1010	Subm.& Approval of Technical Info. Sewer Pipe	60	31-May-17	09-Aug-17	204
ST.PW.1020	Subm.& Approval of Technical Info. Water Pipe	60	31-May-17	09-Aug-17	250
ST.PW.1030	Subm.& Approval of Technical Info. Gas Pipe	60	31-May-17	09-Aug-17	399
ST.PW.1040	Subm.& Approval of Technical Info. Electrical Cables	60	31-May-17	09-Aug-17	303
E&M Procurement					
Procurement, Manufacture & Delivery					
HVAC					
EM.PM001010	Place order - AHU	7	18-Sep-17	25-Sep-17	86
EM.PM001011	Manufacture & Delivery to HK - AHU	181	29-Sep-17	28-Mar-18	107
EM.PM001020	Place order - Ventilation fan	6	11-Aug-17	17-Aug-17	44



critical level of effort
Critical Remaining Work
Current
Milestone
Milestone
% Complete

Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
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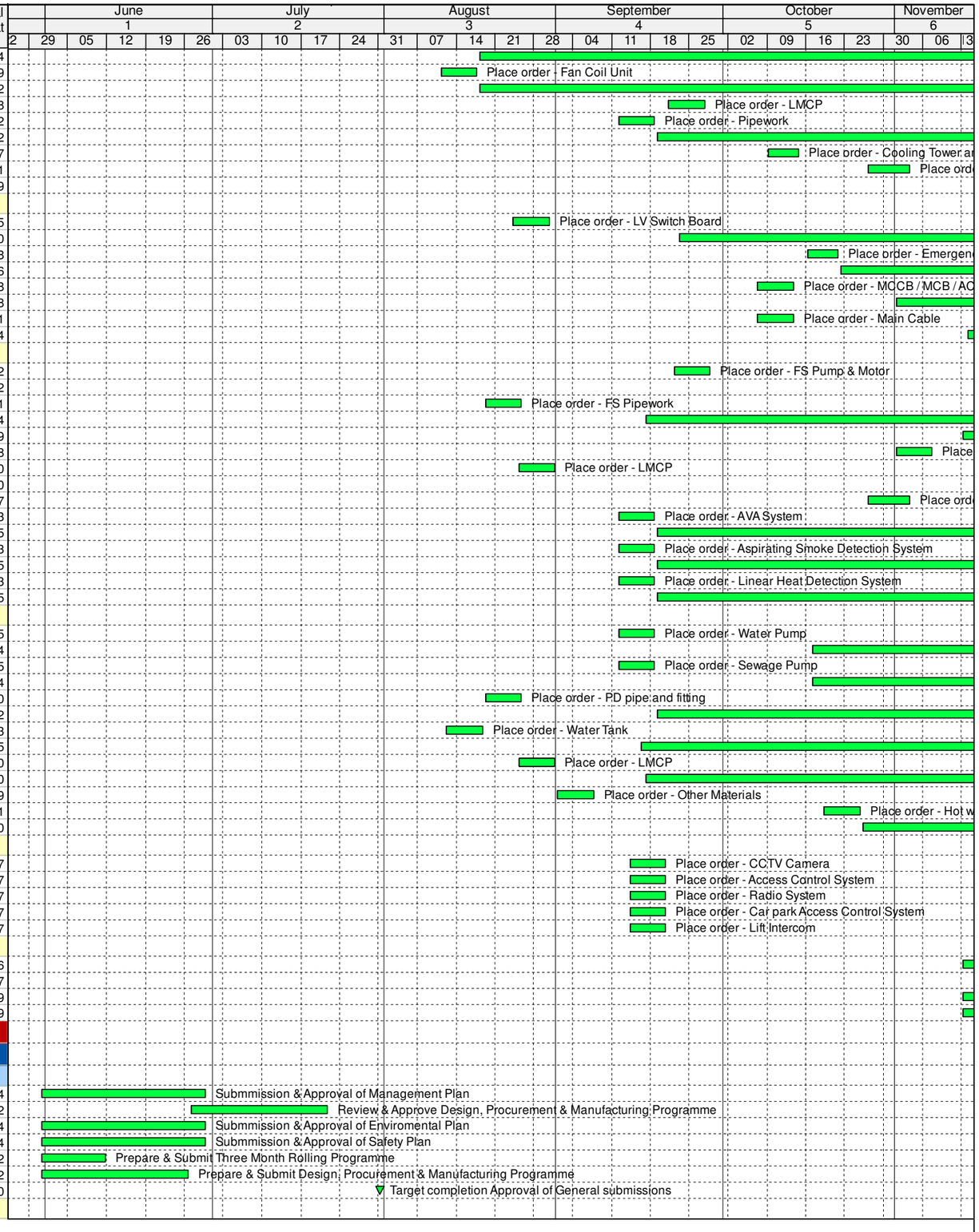
OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
EM.PM001021	Manufacture & Delivery to HK - Ventilation fan	100	18-Aug-17	25-Nov-17	54
EM.PM001060	Place order - Fan Coil Unit	6	11-Aug-17	17-Aug-17	59
EM.PM001061	Manufacture & Delivery to HK - Fan Coil Unit	90	18-Aug-17	15-Nov-17	72
EM.PM001070	Place order - LMCP	6	21-Sep-17	27-Sep-17	8
EM.PM001110	Place order - Pipework	6	12-Sep-17	18-Sep-17	2
EM.PM001111	Manufacture & Delivery to HK - Pipework	120	19-Sep-17	16-Jan-18	2
EM.PM001090	Place order - Cooling Tower and pump	6	09-Oct-17	14-Oct-17	57
EM.PM001100	Place order - Chiller water pump	6	27-Oct-17	03-Nov-17	141
EM.PM001101	Manufacture & Delivery to HK - Chiller water pump	90	25-Nov-17	22-Feb-18	179
Electrical					
EM.PM002010	Place order - LV Switch Board	6	24-Aug-17	30-Aug-17	65
EM.PM002011	Manufacture & Delivery to HK - LV Switch Board	90	23-Sep-17	21-Dec-17	80
EM.PM002020	Place order - Emergency Generator	6	16-Oct-17	21-Oct-17	78
EM.PM002021	Manufacture & Delivery to HK - Emergency Generator	150	22-Oct-17	20-Mar-18	96
EM.PM002030	Place order - MCCB / MCB / ACB	6	07-Oct-17	13-Oct-17	48
EM.PM002031	Manufacture & Delivery to HK - MCCB / MCB / ACB	60	01-Nov-17	30-Dec-17	58
EM.PM002040	Place order - Main Cable	6	07-Oct-17	13-Oct-17	1
EM.PM002060	Place order - FOH & BOH Lightings	6	14-Nov-17	20-Nov-17	14
Fire Services					
EM.PM003010	Place order - FS Pump & Motor	6	22-Sep-17	28-Sep-17	112
EM.PM003011	Manufacture & Delivery to HK - FS Pump & Motor	93	01-Dec-17	03-Mar-18	142
EM.PM003020	Place order - FS Pipework	6	19-Aug-17	25-Aug-17	51
EM.PM003021	Manufacture & Delivery to HK - FS Pipework	60	17-Sep-17	15-Nov-17	64
EM.PM003030	Place order - FH/HR System	6	13-Nov-17	18-Nov-17	59
EM.PM003040	Place order - Fire Detection and Alarm System	6	01-Nov-17	07-Nov-17	108
EM.PM003050	Place order - LMCP	6	25-Aug-17	31-Aug-17	0
EM.PM003051	Manufacture & Delivery to HK - LMCP	89	30-Nov-17	26-Feb-18	0
EM.PM003060	Place order - Other Materials	6	27-Oct-17	03-Nov-17	-17
EM.PM003070	Place order - AVA System	6	12-Sep-17	18-Sep-17	93
EM.PM003071	Manufacture & Delivery to HK - AVA Sytem	90	19-Sep-17	17-Dec-17	115
EM.PM003080	Place order - Aspirating Smoke Detection System	6	12-Sep-17	18-Sep-17	93
EM.PM003081	Manufacture & Delivery to HK - Aspirating Smoke Detection System	90	19-Sep-17	17-Dec-17	115
EM.PM003090	Place order - Linear Heat Detection System	6	12-Sep-17	18-Sep-17	93
EM.PM003091	Manufacture & Delivery to HK - Linear Heat Detection System	90	19-Sep-17	17-Dec-17	115
Plumbing & Drainage					
EM.PM004010	Place order - Water Pump	6	12-Sep-17	18-Sep-17	85
EM.PM004011	Manufacture & Delivery to HK - Water Pump	155	17-Oct-17	20-Mar-18	104
EM.PM004020	Place order - Sewage Pump	6	12-Sep-17	18-Sep-17	85
EM.PM004021	Manufacture & Delivery to HK - Sewage Pump	155	17-Oct-17	20-Mar-18	104
EM.PM004030	Place order - PD pipe and fitting	6	19-Aug-17	25-Aug-17	50
EM.PM004031	Manufacture & Delivery to HK - PD pipe and fitting	60	19-Sep-17	17-Nov-17	62
EM.PM004040	Place order - Water Tank	6	12-Aug-17	18-Aug-17	13
EM.PM004041	Manufacture & Delivery to HK - Water Tank	167	16-Sep-17	01-Mar-18	15
EM.PM004050	Place order - LMCP	6	25-Aug-17	31-Aug-17	0
EM.PM004051	Manufacture & Delivery to HK - LMCP	163	17-Sep-17	26-Feb-18	0
EM.PM004060	Place order - Other Materials	6	01-Sep-17	07-Sep-17	39
EM.PM004070	Place order - Hot water System	6	19-Oct-17	25-Oct-17	151
EM.PM004071	Manufacture & Delivery to HK - Hot water System	60	26-Oct-17	24-Dec-17	190
ELV					
EM.PM005010	Place order - CCTV Camera	6	14-Sep-17	20-Sep-17	97
EM.PM005020	Place order - Access Control System	6	14-Sep-17	20-Sep-17	97
EM.PM005030	Place order - Radio System	6	14-Sep-17	20-Sep-17	97
EM.PM005040	Place order - Car park Access Control System	6	14-Sep-17	20-Sep-17	97
EM.PM005050	Place order - Lift Intercom	6	14-Sep-17	20-Sep-17	97
CCMS					
EM.PM006010	Place order - Workstation	6	13-Nov-17	18-Nov-17	116
EM.PM006011	Manufacture & Delivery to HK - Workstation	125	19-Nov-17	23-Mar-18	147
EM.PM006020	Place order - DDC	6	13-Nov-17	18-Nov-17	49
EM.PM006030	Place order - Interfacing panel	6	13-Nov-17	18-Nov-17	49
PRELIMINARIES					
Submission					
General					
PR.SMP.1000	Submmission & Approval of Management Plan	30	31-May-17*	29-Jun-17	24
PR.GEN.1090	Review & Approve Design, Procurement & Manufacturing Programme	25	27-Jun-17	21-Jul-17	2
PR.SEP.1000	Submmission & Approval of Enviromental Plan	30	31-May-17	29-Jun-17	24
PR.SSP.1010	Submmission & Approval of Safety Plan	30	31-May-17	29-Jun-17	24
PR.GEN.1040	Prepare & Submit Three Month Rolling Programme	12	31-May-17	11-Jun-17	42
PR.GEN.1080	Prepare & Submit Design, Procurement & Manufacturing Programme	27	31-May-17	26-Jun-17	2
PR.GEN.1030	Target completion Approval of General submissions	0		31-Jul-17*	0
PMI					



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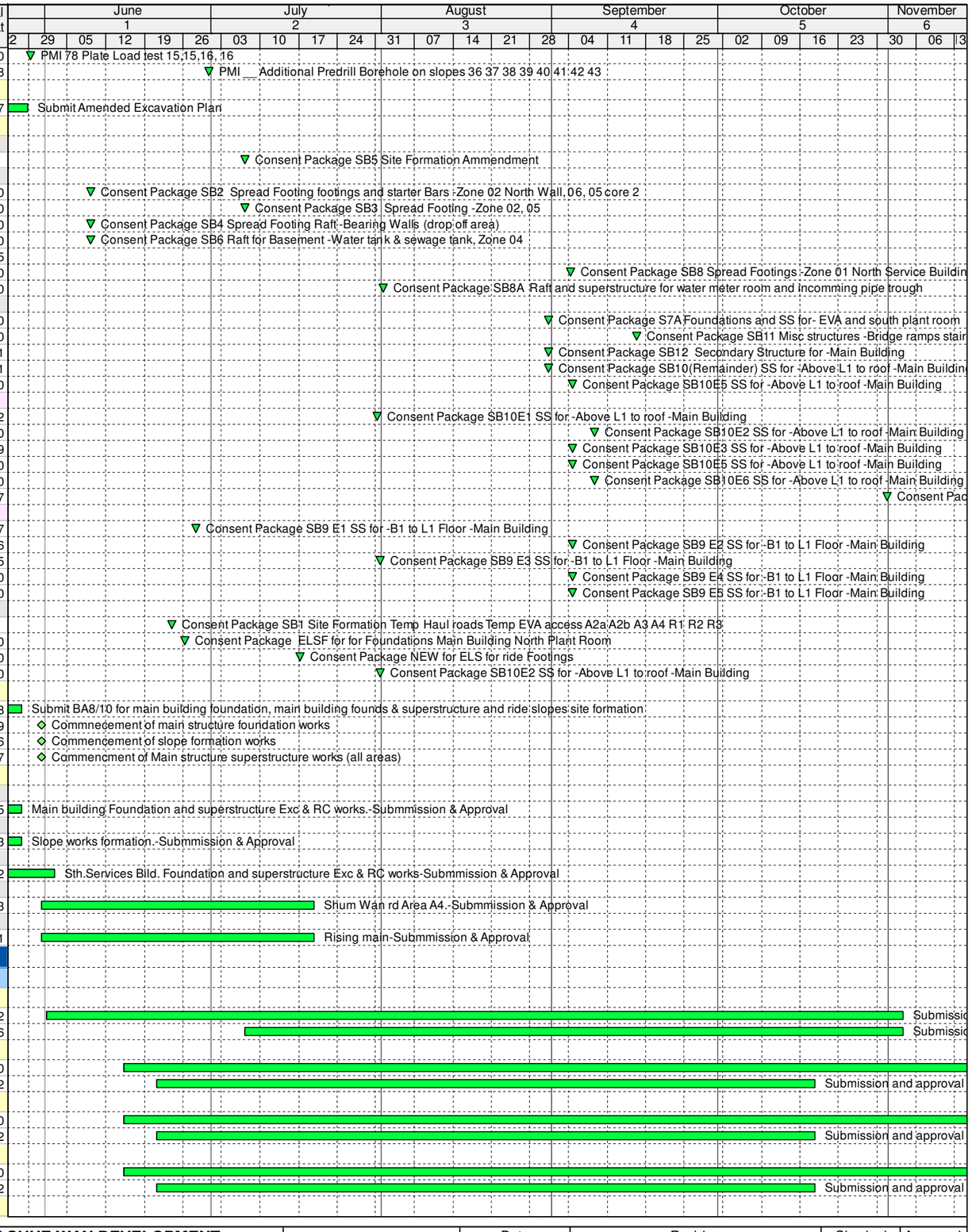
ID	Activity	Duration	Start	Finish	Total Float
OP.520	PMI 78 Plate Load test 15,15,16, 16	0		29-May-17*	0
OP.540	PMI __Additional Predrill Borehole on slopes 36 37 38 39 40 41 42 43	0		30-Jun-17	688
BD Approval excavation					
PR.SMS.1050	Submit Amended Excavation Plan	28	01-May-17	28-May-17*	-87
BD Consent					
Site Formation					
BD.CSF.PW100	Consent Package SB5 Site Formation Ammendment	0		07-Jul-17 A	
Foundations (Main Building)					
BD.CF.PW100	Consent Package SB2 Spread Footing footings and starter Bars -Zone 02 North Wall, 06, 05 core	0		09-Jun-17*	-10
BD.CF.PW110	Consent Package SB3 Spread Footing -Zone 02, 05	0		07-Jul-17*	0
BD.CF.PW120	Consent Package SB4 Spread Footing Raft -Bearing Walls (drop off area)	0		09-Jun-17*	0
BD.CF.PW140	Consent Package SB6 Raft for Basement -Water tank & sewage tank, Zone 04	0		09-Jun-17*	0
BD.CF.PW150	Consent Package SB7 Raft and Starter bars -South Plant Room	0		27-Nov-17	-135
BD.CF.PW160	Consent Package SB8 Spread Footings -Zone 01 North Service Building	0		04-Sep-17*	0
BD.CF.PW170	Consent Package SB8A Raft and superstructure for water meter room and incomming pipe trough	0		01-Aug-17*	0
Superstructure (Main Building)					
BD.CSS.PW100	Consent Package S7A Foundations and SS for- EVA and south plant room	0		31-Aug-17*	0
BD.CSS.PW130	Consent Package SB11 Misc structures -Bridge ramps staircases -Main Building	0		16-Sep-17*	0
BD.CSS.PW140	Consent Package SB12 Secondary Structure for -Main Building	0		31-Aug-17*	-1
BD.CSS.PW210	Consent Package SB10(Remainder) SS for -Above L1 to roof -Main Building	0		31-Aug-17*	-1
BD.CSS.PW230	Consent Package SB10E5 SS for -Above L1 to roof -Main Building	0		04-Sep-17*	0
Level 1 to Level 2					
BD.CSS.PW120	Consent Package SB10E1 SS for -Above L1 to roof -Main Building	0		31-Jul-17*	2
BD.CSS.PW170	Consent Package SB10E2 SS for -Above L1 to roof -Main Building	0		08-Sep-17*	0
BD.CSS.PW180	Consent Package SB10E3 SS for -Above L1 to roof -Main Building	0		04-Sep-17*	-9
BD.CSS.PW240	Consent Package SB10E5 SS for -Above L1 to roof -Main Building	0		04-Sep-17*	0
BD.CSS.PW260	Consent Package SB10E6 SS for -Above L1 to roof -Main Building	0		08-Sep-17*	0
BD.CSS.PW270	Consent Package SB10E4 SS for -Above L1 to roof -Main Building	0		31-Oct-17*	-37
Basement to Level 1					
BD.CSS.PW110	Consent Package SB9 E1 SS for -B1 to L1 Floor -Main Building	0		28-Jun-17*	-17
BD.CSS.PW150	Consent Package SB9 E2 SS for -B1 to L1 Floor -Main Building	0		04-Sep-17*	-36
BD.CSS.PW160	Consent Package SB9 E3 SS for -B1 to L1 Floor -Main Building	0		31-Jul-17*	-15
BD.CSS.PW190	Consent Package SB9 E4 SS for -B1 to L1 Floor -Main Building	0		04-Sep-17*	-10
BD.CSS.PW200	Consent Package SB9 E5 SS for -B1 to L1 Floor -Main Building	0		04-Sep-17*	-40
Contractors Temp Works design submission					
BD.CEX.TW100	Consent Package SB1 Site Formation Temp Haul roads Temp EVA access A2a A2b A3 A4 R1 R2	0		24-Jun-17	
BD.CEX.TW110	Consent Package ELSF for for Foundations Main Building North Plant Room	0		26-Jun-17*	0
BD.CEX.TW120	Consent Package NEW for ELS for ride Footings	0		17-Jul-17*	0
BD.CSS.PW250	Consent Package SB10E2 SS for -Above L1 to roof -Main Building	0		31-Jul-17*	0
Structure Foundation, Main Building Superstructure (all areas) & Slope Formation Works					
PR.GEN.1060	Submit BA8/10 for main building foundation, main building founds & superstructure and ride slop	28	24-Apr-17	27-May-17	-68
PR.GEN.1070	Commnecement of main structure foundation works	0	31-May-17*		-69
PR.GEN.1100	Commencement of slope formation works	0	31-May-17*		-26
PR.GEN.1110	Commencment of Main structure superstructure works (all areas)	0	31-May-17*		7
Method Statements (Initial submissions)					
Main Building including North transformer building					
PR.SMS.1000	Main building Foundation and superstructure Exc & RC works.-Submmission & Approval	26	26-Apr-17	27-May-17*	-35
Slope works					
PR.SMS.1040	Slope works formation.-Submmission & Approval	26	26-Apr-17	27-May-17	-43
Southern Plant Area					
PR.SMS.1010	Sth.Services Bild. Foundation and superstructure Exc & RC works-Submmission & Approval	30	26-Apr-17	02-Jun-17*	-72
Shum Wan Road Area A4					
PR.SMS.1020	Shum Wan rd Area A4.-Submmission & Approval	42	31-May-17	19-Jul-17	153
Rising Main					
PR.SMS.1030	Rising main-Submmission & Approval	42	31-May-17	19-Jul-17	191
E&M Submission					
Drawing and Method Statement					
ACMV					
EM.DM001001	Submission and approval of Drawings	130	01-Jun-17	03-Nov-17	62
EM.DM001002	Submission and approval of Installation Method Statement	120	07-Jul-17	03-Nov-17	76
Electrical					
EM.DM002001	Submission and approval of Drawings	130	15-Jun-17	17-Nov-17	50
EM.DM002002	Submission and approval of Installation Method Statement	120	21-Jun-17	18-Oct-17	92
Fire Services					
EM.DM003001	Submission and approval of Drawings	130	15-Jun-17	17-Nov-17	50
EM.DM003002	Submission and approval of Installation Method Statement	120	21-Jun-17	18-Oct-17	92
Plumbing & Drainage					
EM.DM004001	Submission and approval of Drawings	130	15-Jun-17	17-Nov-17	50
EM.DM004002	Submission and approval of Installation Method Statement	120	21-Jun-17	18-Oct-17	92
ELV					



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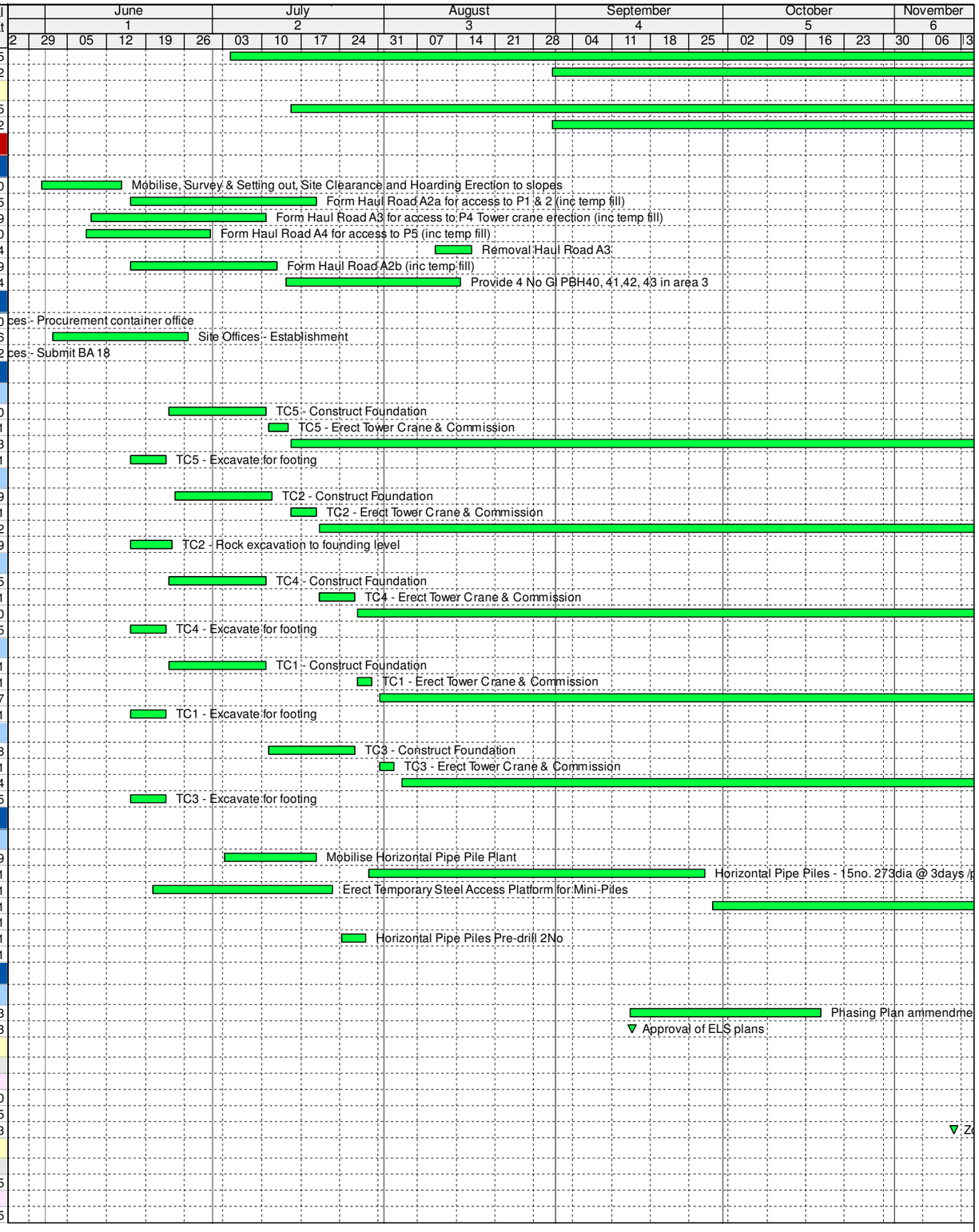
EM.DM005001	Submission and approval of Drawings	120	04-Jul-17	23-Nov-17	215
EM.DM005002	Submission and approval of Installation Method Statement	90	31-Aug-17	28-Nov-17	262
CCMS					
EM.DM4001	Submission and approval of Drawings	110	15-Jul-17	23-Nov-17	215
EM.DM4011	Submission and approval of Installation Method Statement	90	31-Aug-17	28-Nov-17	262
SLOPE WORKS -SITE FORMATION					
General					
PR.SWGE.1010	Mobilise, Survey & Setting out, Site Clearance and Hoarding Erection to slopes	12	31-May-17	14-Jun-17	-50
PR.SWGE.1070	Form Haul Road A2a for access to P1 & 2 (inc temp fill)	24	16-Jun-17	19-Jul-17	-45
PR.SWGE.1080	Form Haul Road A3 for access to P4 Tower crane erection (inc temp fill)	23	09-Jun-17	10-Jul-17	-39
PR.SWGE.1090	Form Haul Road A4 for access to P5 (inc temp fill)	18	08-Jun-17	30-Jun-17	-50
PR.SWGE.1120	Removal Haul Road A3	6	10-Aug-17	16-Aug-17	14
PR.SWGE.1240	Form Haul Road A2b (inc temp fill)	20	16-Jun-17	12-Jul-17	-39
PR.SWGE.1100	Provide 4 No GI PBH40, 41,42, 43 in area 3	24	14-Jul-17	14-Aug-17	4
Site Offices					
PR.SWSO.1020	Site Offices - Procurement container office	21	25-Apr-17	15-May-17	870
PR.SWSO.1030	Site Offices - Establishment	18	02-Jun-17	26-Jun-17	656
PR.SWSO.1040	Site Offices - Submit BA 18	21	25-Apr-17	15-May-17	892
Tower Crane					
TC5					
PR.STC5.5120	TC5 - Construct Foundation	12	23-Jun-17	10-Jul-17	-10
PR.STC5.5130	TC5 - Erect Tower Crane & Commission	3	11-Jul-17	14-Jul-17	-11
PR.STC5.5140	TC5 - Tower Crane in Use	285	15-Jul-17	16-Jul-18	-23
PR.STC5.5160	TC5 - Excavate for footing	5	16-Jun-17	22-Jun-17	-11
TC2					
PR.STC2.2120	TC2 - Construct Foundation	12	24-Jun-17	11-Jul-17	-9
PR.STC2.2130	TC2 - Erect Tower Crane & Commission	3	15-Jul-17	19-Jul-17	-11
PR.STC2.2140	TC2 - Tower Crane in Use	308	20-Jul-17	20-Aug-18	2
PR.STC2.2160	TC2 - Rock excavation to founding level	6	16-Jun-17	23-Jun-17	-9
TC4					
PR.STC4.4120	TC4 - Construct Foundation	12	23-Jun-17	10-Jul-17	-5
PR.STC4.4130	TC4 - Erect Tower Crane & Commission	6	20-Jul-17	26-Jul-17	-11
PR.STC4.4140	TC4 - Tower Crane in Use	319	27-Jul-17	12-Sep-18	-60
PR.STC4.4160	TC4 - Excavate for footing	5	16-Jun-17	22-Jun-17	-5
TC1					
PR.STC1.1110	TC1 - Construct Foundation	12	23-Jun-17	10-Jul-17	1
PR.STC1.1120	TC1 - Erect Tower Crane & Commission	3	27-Jul-17	29-Jul-17	-11
PR.STC1.1130	TC1 - Tower Crane in Use	319	31-Jul-17	17-Sep-18	-17
PR.STC1.1150	TC1 - Excavate for footing	5	16-Jun-17	22-Jun-17	1
TC3					
PR.STC3.3120	TC3 - Construct Foundation	12	11-Jul-17	26-Jul-17	-8
PR.STC3.3130	TC3 - Erect Tower Crane & Commission	3	31-Jul-17	02-Aug-17	-11
PR.STC3.3140	TC3 - Tower Crane in Use	414	04-Aug-17	17-Jan-19	74
PR.STC3.3170	TC3 - Excavate for footing	5	16-Jun-17	22-Jun-17	5
Works for Roof B Horizontal Pipe Piles					
Horizontal Piling					
LR.STC5.7110	Mobilise Horizontal Pipe Pile Plant	12	03-Jul-17	19-Jul-17	9
LR.STC5.7120	Horizontal Pipe Piles - 15no. 273dia @ 3days /pile at Phase 3B	45	29-Jul-17	27-Sep-17	1
LR.STC5.7130	Erect Temporary Steel Access Platform for Mini-Piles	24	20-Jun-17	22-Jul-17	1
LR.STC5.7140	Horizontal Pipe Piles - 15no. 273dia @ 3days /pile	45	29-Sep-17	23-Nov-17	1
LR.STC5.7150	Horizontal Pipe Pile - Load Testing 2No submit report	12	30-Nov-17	13-Dec-17	1
LR.STC5.7170	Horizontal Pipe Piles Pre-drill 2No	5	24-Jul-17	28-Jul-17	1
LR.STC5.7180	Horizontal Pipe Piles Post drill 2 No	5	24-Nov-17	29-Nov-17	1
Slope Works for Rides					
Revised BD Package for Footing Consent					
OP.1610	Phasing Plan ammendment submission	28	14-Sep-17*	18-Oct-17	-63
OP.1620	Approval of ELS plans	0		14-Sep-17*	623
Package 13A					
PHASE 1					
Phase 13A.1					
RC.P2.2A2460	Zone 2C-2: Submit BA8/10 for Foundation Works	0		27-Nov-17	0
RC.P1.1A2510	Zone 1B-2: Submit BA8/10 for Foundation Works	0		02-Dec-17	-5
RC.P1.1A2520	Zone 1B-1: Submit BA8/10 for Foundation Works	0		11-Nov-17	13
Package 13E					
PHASE 1					
CON.13EP1100	Package 13E Phase 1 Apply consent	0		30-Nov-17	35
Phase 13E.1					
RC.P3.3B2830	Zone 3G-1: Submit BA8/10 for Foundation Works	0		30-Nov-17	35



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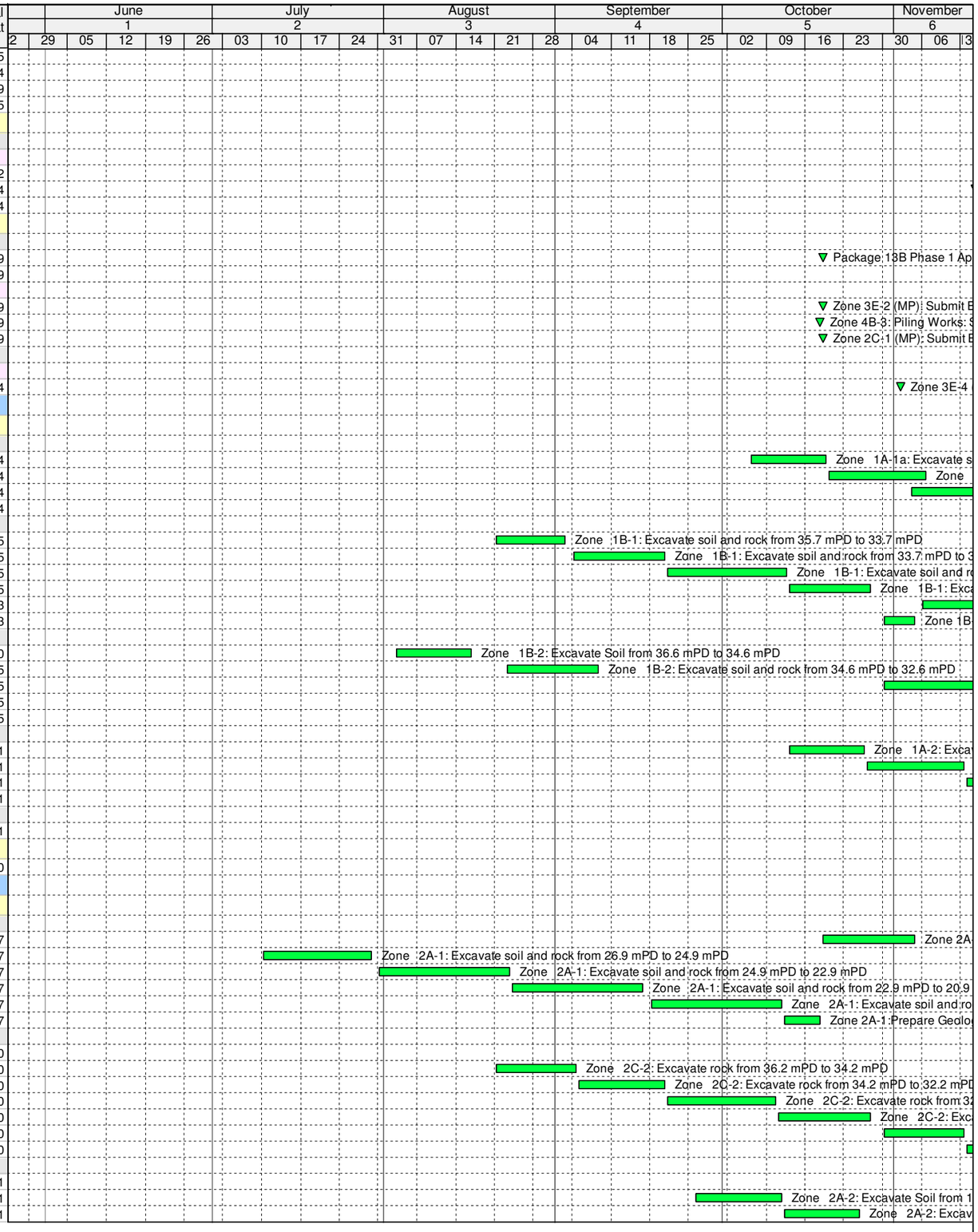
RC.P3.3B2820	Zone 3F: Submit BA8/10 for Foundation Works	0		30-Nov-17	35
RC.P3.3B2790	Zone 3E-1: Submit BA8/10 for Foundation Works	0		20-Nov-17	44
RC.P3.3B2800	Zone 3E-3: Submit BA8/10 for Foundation Works (formation below 3C-2)	0		25-Nov-17	39
RC.P3.3B2930	Zone 3A-2: Submit BA8/10 for Foundation Works	0		30-Nov-17	35
Package 13C					
PHASE 1					
Phase 13C.1					
RC.P4.4B2410	Zone 4A: Submit BA8/10 for Foundation Works	0		29-Nov-17	112
RC.P4.4B2420	Zone 4B-1: Submit BA8/10 for Foundation Works	0		15-Nov-17	124
RC.P4.4B2440	Zone 4B-2: Submit BA8/10 for Foundation Works	0		27-Nov-17	114
Package 13B					
PHASE 1					
CON.13BP1100	Package 13B Phase 1 Apply Consent	0		19-Oct-17	79
CON.13BP1130	Package 13B Phase 1 Consent Granted	0		21-Nov-17	79
Phase 13B.1					
MP.P3.3C1260	Zone 3E-2 (MP): Submit BA8/10 for Minipiles (formation below 3C-2)	0		19-Oct-17	79
MP.P4.4A1260	Zone 4B-3: Piling Works: Submit BA8/10 for Minipiles	0		18-Oct-17	79
MP.P2.2B1650	Zone 2C-1 (MP): Submit BA8/10 for Minipiles	0		19-Oct-17	79
PHASE 2					
Phase 13B.2					
MP.P3.3C1240	Zone 3E-4 (MP): Submit BA8/10 for Minipiles (formation below 3E-3)	0		02-Nov-17	104
Ride P1					
P1 RIDE FORMATION					
Zone 1A-1a (no footings)					
FM.P1.1A-1a.110	Zone 1A-1a: Excavate soil and rock from 26 mPD to 24 mPD	12	06-Oct-17	19-Oct-17	-84
FM.P1.1A-1a.140	Zone 1A-1a: Excavate soil and rock from 24 mPD to 22 mPD	14	20-Oct-17	06-Nov-17	-84
FM.P1.1A-1a.160	Zone 1A-1a: Excavate soil and rock from 22 mPD to 20 mPD	15	04-Nov-17	21-Nov-17	-84
FM.P1.1A-1a.190	Zone 1A-1a: Excavate rock from 20 mPD to 18 mPD	17	20-Nov-17	08-Dec-17	-84
Zone 1B-1					
FM.P1.1B-1.120	Zone 1B-1: Excavate soil and rock from 35.7 mPD to 33.7 mPD	12	21-Aug-17	02-Sep-17	-5
FM.P1.1B-1.150	Zone 1B-1: Excavate soil and rock from 33.7 mPD to 31.7 mPD	15	04-Sep-17	20-Sep-17	-5
FM.P1.1B-1.180	Zone 1B-1: Excavate soil and rock from 31.7 mPD to 29.7 mPD	17	21-Sep-17	12-Oct-17	-5
FM.P1.1B-1.210	Zone 1B-1: Excavate soil and rock from 29.7 mPD to 28.5 mPD	13	13-Oct-17	27-Oct-17	-5
FM.P1.1B-1.290	Zone 1B-1: Submit BA14 site formation works	14	06-Nov-17	21-Nov-17	13
FM.P1.1B-1.280	Zone 1B-1:Prepare Geological assessment report	6	30-Oct-17	04-Nov-17	13
Zone 1B-2					
FM.P1.1B-2.100	Zone 1B-2: Excavate Soil from 36.6 mPD to 34.6 mPD	12	03-Aug-17	16-Aug-17	40
FM.P1.1B-2.130	Zone 1B-2: Excavate soil and rock from 34.6 mPD to 32.6 mPD	15	23-Aug-17	08-Sep-17	35
FM.P1.1B-2.270	Zone 1B-2: Excavate soil and rock from 32.6 mPD to 30.5 mPD	18	30-Oct-17	18-Nov-17	-5
FM.P1.1B-2.370	Zone 1B-2: Submit BA14 site formation works	14	27-Nov-17	12-Dec-17	-5
FM.P1.1B-2.340	Zone 1B-2:Prepare Geological assessment report	6	20-Nov-17	25-Nov-17	-5
Zone 1A-2					
FM.P1.1A-2.220	Zone 1A-2: Excavate Soil from 30.4 mPD to 28.4 mPD	12	13-Oct-17	26-Oct-17	21
FM.P1.1A-2.260	Zone 1A-2: Excavate soil and rock from 28.4 mPD to 26.4 mPD	14	27-Oct-17	13-Nov-17	21
FM.P1.1A-2.320	Zone 1A-2: Excavate soil and rock from 26.4 mPD to 24.4 mPD	16	14-Nov-17	01-Dec-17	21
FM.P1.1A-2.390	Zone 1A-2: Excavate soil and rock from 24.4 mPD to 22.4 mPD	17	02-Dec-17	21-Dec-17	21
Zone 1A-1b					
FM.P1.1A-1b.170	Zone 1A-1b: Excavate soil and rock from 22 mPD to 20 mPD	12	25-Nov-17	08-Dec-17	1
Phase 1A-2					
SF.P1.1A1220	Submit BA14 for Site Formation	14	28-Nov-17	13-Dec-17	10
Ride P2					
P2 RIDE FORMATION					
Zone 2A-1					
FM.P2.2A-1.150	Zone 2A-1: Submit BA14 site formation works	14	19-Oct-17	04-Nov-17	-17
FM.P2.2A-1.100	Zone 2A-1: Excavate soil and rock from 26.9 mPD to 24.9 mPD	18	10-Jul-17	29-Jul-17	-17
FM.P2.2A-1.110	Zone 2A-1: Excavate soil and rock from 24.9 mPD to 22.9 mPD	21	31-Jul-17	23-Aug-17	-17
FM.P2.2A-1.120	Zone 2A-1: Excavate soil and rock from 22.9 mPD to 20.9 mPD	21	24-Aug-17	16-Sep-17	-17
FM.P2.2A-1.130	Zone 2A-1: Excavate soil and rock from 20.9 mPD to 18.9 mPD	19	18-Sep-17	11-Oct-17	-17
FM.P2.2A-1.140	Zone 2A-1:Prepare Geological assessment report	6	12-Oct-17	18-Oct-17	-17
Zone 2C-2					
FM.P2.2C-2.160	Zone 2C-2: Submit BA14 site formation works	14	21-Nov-17	06-Dec-17	0
FM.P2.2C-2.100	Zone 2C-2: Excavate rock from 36.2 mPD to 34.2 mPD	13	21-Aug-17	04-Sep-17	0
FM.P2.2C-2.110	Zone 2C-2: Excavate rock from 34.2 mPD to 32.2 mPD (after Zone 02 founds)	14	05-Sep-17	20-Sep-17	0
FM.P2.2C-2.120	Zone 2C-2: Excavate rock from 32.2 mPD to 30.2 mPD	15	21-Sep-17	10-Oct-17	0
FM.P2.2C-2.130	Zone 2C-2: Excavate rock from 30.2 mPD to 28.2 mPD	15	11-Oct-17	27-Oct-17	0
FM.P2.2C-2.140	Zone 2C-2: Excavate rock from 28.2 mPD to 27.7 mPD	13	30-Oct-17	13-Nov-17	0
FM.P2.2C-2.150	Zone 2C-2:Prepare Geological assessment report	6	14-Nov-17	20-Nov-17	0
Zone 2A-2 (no ride footing)					
FM.P2.2A-2.150	Zone 2A-2 (no footing): Submit BA14 site formation works	14	17-Nov-17	02-Dec-17	-31
FM.P2.2A-2.100	Zone 2A-2: Excavate Soil from 19.7 mPD to 17.7 mPD	12	26-Sep-17	11-Oct-17	-31
FM.P2.2A-2.110	Zone 2A-2: Excavate Soil from 17.7 mPD to 15.7 mPD	12	12-Oct-17	25-Oct-17	-31



critical level of effort
Current
Milestone
Milestone
% Complete
Critical Remaining Work

Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
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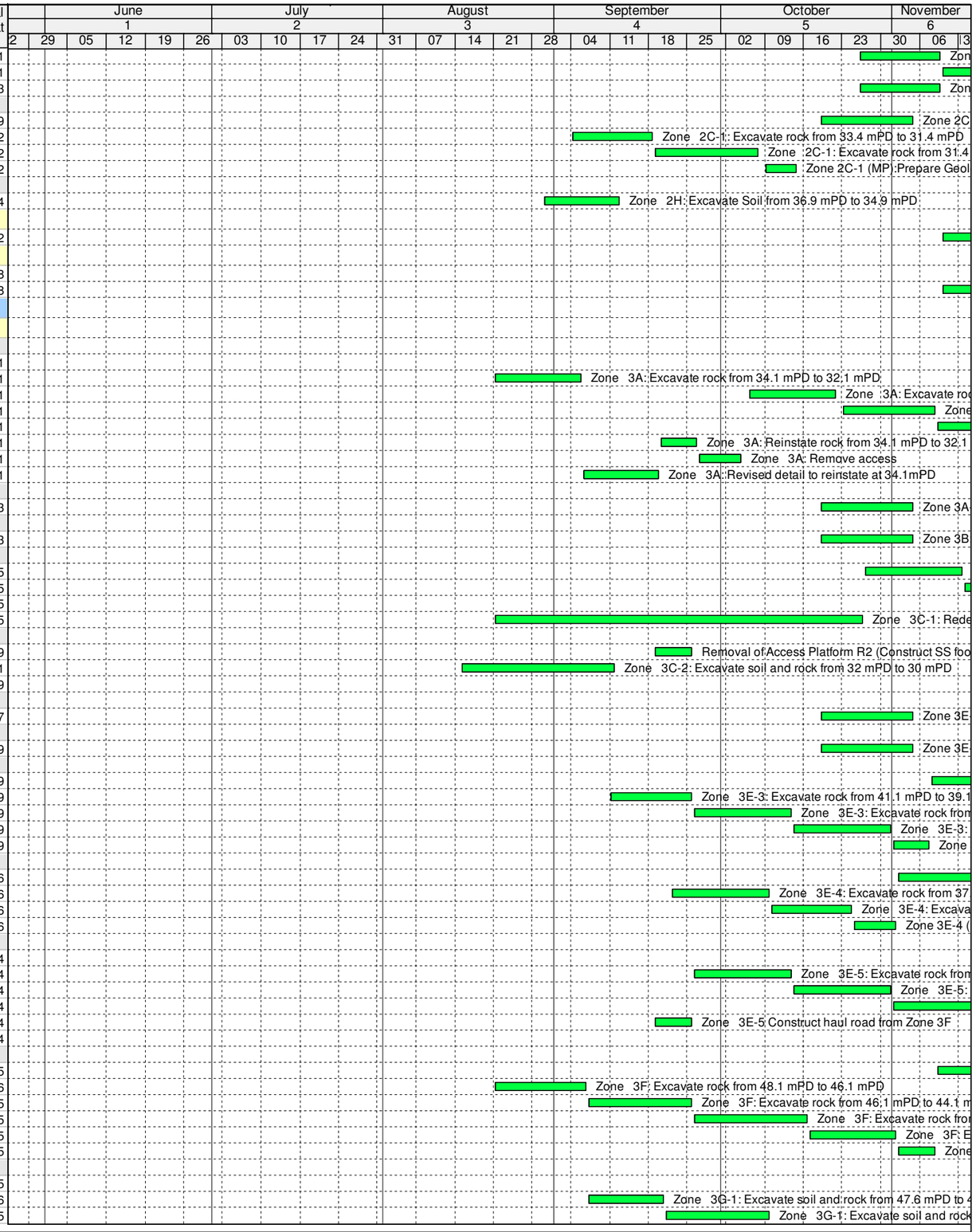
OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
FM.P2.2A-2.120	Zone 2A-2: Excavate soil and rock from 15.7 mPD to 14.1 mPD	12	26-Oct-17	09-Nov-17	-31
FM.P2.2A-2.140	Zone 2A-2 (no ride footing):Prepare Geological assessment report	6	10-Nov-17	16-Nov-17	-31
FM.P2.2A-2.130	Zone 2A-2: Excavate Soil in way of structure zone A11	12	26-Oct-17	09-Nov-17	-23
Zone 2C-1 (MP)					
FM.P2.2C-1.140	Zone 2C-1 (MP): Submit BA14 site formation works	14	19-Oct-17*	04-Nov-17	79
FM.P2.2C-1.100	Zone 2C-1: Excavate rock from 33.4 mPD to 31.4 mPD	13	04-Sep-17	18-Sep-17	82
FM.P2.2C-1.120	Zone 2C-1: Excavate rock from 31.4 mPD to 29.3 mPD	15	19-Sep-17	07-Oct-17	82
FM.P2.2C-1.130	Zone 2C-1 (MP):Prepare Geological assessment report	6	09-Oct-17	14-Oct-17	82
Zone 2H					
FM.P2.2H.100	Zone 2H: Excavate Soil from 36.9 mPD to 34.9 mPD	12	30-Aug-17	12-Sep-17	84
Phase 2A					
SF.P2.2A1190	Submit BA14 for Site Formation	14	10-Nov-17	25-Nov-17	62
Phase 2C					
SF.P2.2C1390	Submit BA14 for Site Formation	14	25-Nov-17	11-Dec-17	48
SF.P2.2C1320	Cut Rock to +28mPd and Stabilization Works	13	10-Nov-17	24-Nov-17	48
Ride P3					
P3 RIDE FORMATION					
Zone 3A					
FM.P3.3A.190	Zone 3A: Submit BA14 site formation works	14	16-Nov-17*	01-Dec-17	-61
FM.P3.3A.100	Zone 3A: Excavate rock from 34.1 mPD to 32.1 mPD	14	21-Aug-17	05-Sep-17	-61
FM.P3.3A.160	Zone 3A: Excavate rock from 22.1 mPD to 20.1 mPD	14	06-Oct-17	21-Oct-17	-61
FM.P3.3A.170	Zone 3A: Excavate rock from 20.1 mPD to 18.8 mPD	14	23-Oct-17	08-Nov-17	-61
FM.P3.3A.180	Zone 3A:Prepare Geological assessment report	6	09-Nov-17	15-Nov-17	-61
FM.P3.3A.200	Zone 3A: Reinstate rock from 34.1 mPD to 32.1 mPD (subject to SI)	6	20-Sep-17	26-Sep-17	-61
FM.P3.3A.210	Zone 3A: Remove access	6	27-Sep-17	04-Oct-17	-61
FM.P3.3A.110	Zone 3A: Revised detail to reinstate at 34.1mPD	12	06-Sep-17	19-Sep-17	-61
Zone 3A-2					
FM.P3.3A-2.100	Zone 3A-2: Submit BA14 site formation works	14	19-Oct-17*	04-Nov-17	-63
Zone 3B					
FM.P3.3B.100	Zone 3B: Submit BA14 site formation works	14	19-Oct-17*	04-Nov-17	-63
Zone 3C-1 (MP)					
FM.P3.3C-1.110	Zone 3C-1: Excavate rock from 30.9 mPD to 28.9 mPD	14	27-Oct-17	13-Nov-17	155
FM.P3.3C-1.120	Zone 3C-1: Excavate rock from 28.9 mPD to 26.9 mPD	15	14-Nov-17	30-Nov-17	155
FM.P3.3C-1.130	Zone 3C-1: Excavate rock from 26.9 mPD to 25.7 mPD	13	01-Dec-17	15-Dec-17	155
FM.P3.3C-1.100	Zone 3C-1: Redesign footing (mini pile clash with rock anchors RFI 218)	56	21-Aug-17	26-Oct-17	155
Zone 3C-2					
FM.P5.3C-2.110	Removal of Access Platform R2 (Construct SS footing Zone 02)	5	19-Sep-17	25-Sep-17	-29
FM.P5.3C-2.100	Zone 3C-2: Excavate soil and rock from 32 mPD to 30 mPD	24	15-Aug-17	11-Sep-17	-31
FM.P5.3C-2.120	Zone 3C-2: Excavate rock from 30 mPD to 28 mPD	15	21-Nov-17	07-Dec-17	89
Zone 3E-1					
FM.P3.3E-1.100	Zone 3E-1: Submit BA14 site formation works	14	19-Oct-17*	04-Nov-17	57
Zone 3E-2 (MP)					
FM.P3.3E-2.100	Zone 3E-2 (MP): Submit BA14 site formation works	14	19-Oct-17*	04-Nov-17	79
Zone 3E-3					
FM.P3.3E-3.140	Zone 3E-3: Submit BA14 site formation works	14	08-Nov-17	23-Nov-17	39
FM.P3.3E-3.100	Zone 3E-3: Excavate rock from 41.1 mPD to 39.1 mPD	13	11-Sep-17	25-Sep-17	39
FM.P3.3E-3.110	Zone 3E-3: Excavate rock from 39.1 mPD to 37.1 mPD	14	26-Sep-17	13-Oct-17	39
FM.P3.3E-3.120	Zone 3E-3: Excavate rock from 37.1 mPD to 35 mPD	14	14-Oct-17	31-Oct-17	39
FM.P3.3E-3.130	Zone 3E-3:Prepare Geological assessment report	6	01-Nov-17	07-Nov-17	39
Zone 3E-4 (MP)					
FM.P3.3E-4.130	Zone 3E-4 (MP): Submit BA14 site formation works	28	02-Nov-17*	04-Dec-17	76
FM.P3.3E-4.100	Zone 3E-4: Excavate rock from 37.7 mPD to 35.7 mPD	13	22-Sep-17	09-Oct-17	76
FM.P3.3E-4.110	Zone 3E-4: Excavate rock from 35.7 mPD to 34.2 mPD	13	10-Oct-17	24-Oct-17	76
FM.P3.3E-4.120	Zone 3E-4 (MP): Prepare Geological assessment report	6	25-Oct-17*	01-Nov-17	76
Zone 3E-5					
FM.P3.3E-5.150	Zone 3E-5: Submit BA14 site formation works	14	25-Nov-17	11-Dec-17	-44
FM.P3.3E-5.110	Zone 3E-5: Excavate rock from 39.3 mPD to 37.3 mPD	14	26-Sep-17	13-Oct-17	-44
FM.P3.3E-5.120	Zone 3E-5: Excavate rock from 37.3 mPD to 35.3 mPD	14	14-Oct-17	31-Oct-17	-44
FM.P3.3E-5.130	Zone 3E-5: Excavate rock from 35.3 mPD to 33.2 mPD	15	01-Nov-17	17-Nov-17	-44
FM.P3.3E-5.100	Zone 3E-5 Construct haul road from Zone 3F	6	19-Sep-17	25-Sep-17	-44
FM.P3.3E-5.140	Zone 3E-5:Prepare Geological assessment report	6	18-Nov-17	24-Nov-17	-44
Zone 3F					
FM.P3.3F.150	Zone 3F: Submit BA14 site formation works	14	09-Nov-17	24-Nov-17	35
FM.P3.3F.100	Zone 3F: Excavate rock from 48.1 mPD to 46.1 mPD	15	21-Aug-17	06-Sep-17	-56
FM.P3.3F.110	Zone 3F: Excavate rock from 46.1 mPD to 44.1 mPD	16	07-Sep-17	25-Sep-17	35
FM.P3.3F.120	Zone 3F: Excavate rock from 44.1 mPD to 42.1 mPD	16	26-Sep-17	16-Oct-17	35
FM.P3.3F.130	Zone 3F: Excavate rock from 42.1 mPD to 39.9 mPD	13	17-Oct-17	01-Nov-17	35
FM.P3.3F.140	Zone 3F:Prepare Geological assessment report	6	02-Nov-17	08-Nov-17	35
Zone 3G-1					
FM.P3.3G-1.150	Zone 3G-1: Submit BA14 site formation works	14	24-Nov-17	09-Dec-17	35
FM.P3.3G-1.100	Zone 3G-1: Excavate soil and rock from 47.6 mPD to 45.6 mPD	12	07-Sep-17	20-Sep-17	-56
FM.P3.3G-1.110	Zone 3G-1: Excavate soil and rock from 45.6 mPD to 43.6 mPD	14	21-Sep-17	09-Oct-17	35



critical level of effort
Critical Remaining Work
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Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
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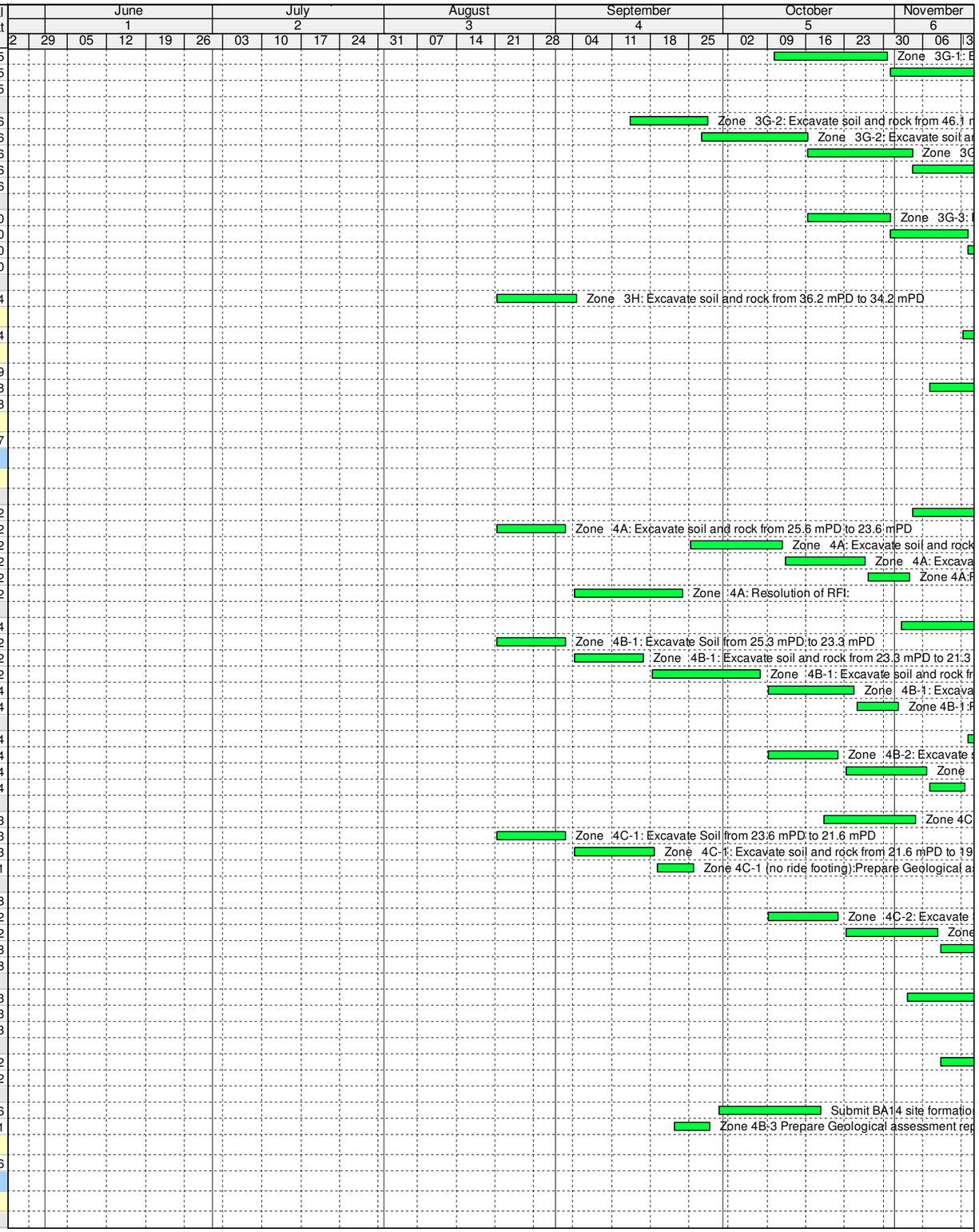
OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
FM.P3.3G-1.120	Zone 3G-1: Excavate soil and rock from 43.6 mPD to 41.6 mPD	17	10-Oct-17	30-Oct-17	35
FM.P3.3G-1.130	Zone 3G-1: Excavate rock from 41.6 mPD to 41.2 mPD	15	31-Oct-17	16-Nov-17	35
FM.P3.3G-1.140	Zone 3G-1:Prepare Geological assessment report	6	17-Nov-17	23-Nov-17	35
Zone 3G-2					
FM.P3.3G-2.100	Zone 3G-2: Excavate soil and rock from 46.1 mPD to 44.1 mPD	12	14-Sep-17	28-Sep-17	-56
FM.P3.3G-2.110	Zone 3G-2: Excavate soil and rock from 44.1 mPD to 42.1 mPD	14	27-Sep-17	16-Oct-17	-56
FM.P3.3G-2.120	Zone 3G-2: Excavate soil and rock from 42.1 mPD to 40.1 mPD	16	16-Oct-17	04-Nov-17	-56
FM.P3.3G-2.130	Zone 3G-2: Excavate soil and rock from 40.1 mPD to 38.1 mPD	16	04-Nov-17	23-Nov-17	-56
FM.P3.3G-2.140	Zone 3G-2: Excavate soil and rock from 38.1 mPD to 36.7 mPD	14	23-Nov-17	09-Dec-17	-56
Zone 3G-3					
FM.P3.3G-3.100	Zone 3G-3: Excavate Soil from 42.2 mPD to 40.2 mPD	12	16-Oct-17	31-Oct-17	-50
FM.P3.3G-3.110	Zone 3G-3: Excavate soil and rock from 40.2 mPD to 38.2 mPD	12	31-Oct-17	14-Nov-17	-50
FM.P3.3G-3.120	Zone 3G-3: Excavate soil and rock from 38.2 mPD to 36.2 mPD	14	14-Nov-17	30-Nov-17	-50
FM.P3.3G-3.130	Zone 3G-3: Excavate soil and rock from 36.2 mPD to 34.2 mPD	15	30-Nov-17	18-Dec-17	-50
Zone 3H					
FM.P3.3H.100	Zone 3H: Excavate soil and rock from 36.2 mPD to 34.2 mPD	13	21-Aug-17	04-Sep-17	84
Phase 3F					
SF.P3.3F1190	Submit BA14 for Site Formation	14	13-Nov-17	28-Nov-17	4
Phase 3G					
SF.P3.3G1190	Submit BA14 for Site Formation	14	28-Nov-17	13-Dec-17	29
SF.P3.3G1160	Cut Rock to +33mPd and Stabilization Works	10	07-Nov-17	17-Nov-17	8
SF.P3.3G1170	Cut Rock to +32mPd and Stabilization Works	10	16-Nov-17	27-Nov-17	8
Phase 3H					
SF.P3.3H1110	Cut Soil Slope and Install Soil Nails	10	29-Nov-17	09-Dec-17	7
Ride P4					
P4 RIDE FORMATION					
Zone 4A					
FM.P4.4A.150	Zone 4A: Submit BA14 site formation works	14	04-Nov-17	20-Nov-17	112
FM.P4.4A.110	Zone 4A: Excavate soil and rock from 25.6 mPD to 23.6 mPD	12	21-Aug-17	02-Sep-17	112
FM.P4.4A.120	Zone 4A: Excavate soil and rock from 23.6 mPD to 21.6 mPD	13	25-Sep-17	11-Oct-17	112
FM.P4.4A.130	Zone 4A: Excavate soil and rock from 19.6 mPD to 17.6 mPD	13	12-Oct-17	26-Oct-17	112
FM.P4.4A.140	Zone 4A:Prepare Geological assessment report	6	27-Oct-17	03-Nov-17	112
FM.P4.4A.160	Zone 4A: Resolution of RFI:	18	04-Sep-17	23-Sep-17	112
Zone 4B-1					
FM.P4.4B-1.150	Zone 4B-1: Submit BA14 site formation works	14	02-Nov-17	17-Nov-17	124
FM.P4.4B-1.100	Zone 4B-1: Excavate Soil from 25.3 mPD to 23.3 mPD	12	21-Aug-17	02-Sep-17	-42
FM.P4.4B-1.110	Zone 4B-1: Excavate soil and rock from 23.3 mPD to 21.3 mPD	12	04-Sep-17	16-Sep-17	-42
FM.P4.4B-1.120	Zone 4B-1: Excavate soil and rock from 21.3 mPD to 19.3 mPD	16	18-Sep-17	07-Oct-17	-42
FM.P4.4B-1.130	Zone 4B-1: Excavate rock from 19.3 mPD to 18.9 mPD	14	09-Oct-17	24-Oct-17	124
FM.P4.4B-1.140	Zone 4B-1:Prepare Geological assessment report	6	25-Oct-17	01-Nov-17	124
Zone 4B-2					
FM.P4.4B-2.130	Zone 4B-2: Submit BA14 site formation works	14	14-Nov-17	29-Nov-17	114
FM.P4.4B-2.100	Zone 4B-2: Excavate soil and rock from 20.7 mPD to 18.7 mPD	12	09-Oct-17	21-Oct-17	114
FM.P4.4B-2.110	Zone 4B-2: Excavate soil and rock from 18.7 mPD to 18 mPD	12	23-Oct-17	06-Nov-17	114
FM.P4.4B-2.120	Zone 4B-2:Prepare Geological assessment report	6	07-Nov-17	13-Nov-17	114
Zone 4C-1 (no ride footing)					
FM.P4.4C-1.130	Zone 4C-1 (no ride footing): Submit BA14 site formation works (interface with level 3 slab zone B1	14	19-Oct-17	04-Nov-17	23
FM.P4.4C-1.100	Zone 4C-1: Excavate Soil from 23.6 mPD to 21.6 mPD	12	21-Aug-17	02-Sep-17	-63
FM.P4.4C-1.110	Zone 4C-1: Excavate soil and rock from 21.6 mPD to 19.7 mPD	13	04-Sep-17	18-Sep-17	-63
FM.P4.4C-1.120	Zone 4C-1 (no ride footing):Prepare Geological assessment report	6	19-Sep-17	25-Sep-17	41
Zone 4C-2					
FM.P4.4C-2.140	Zone 4C-2: Submit BA14 site formation works	14	02-Dec-17	18-Dec-17	98
FM.P4.4C-2.100	Zone 4C-2: Excavate Soil from 20.9 mPD to 18.9 mPD	12	09-Oct-17	21-Oct-17	-42
FM.P4.4C-2.110	Zone 4C-2: Excavate soil and rock from 18.9 mPD to 16.9 mPD	14	23-Oct-17	08-Nov-17	-42
FM.P4.4C-2.120	Zone 4C-2: Excavate soil and rock from 16.9 mPD to 15.8 mPD	14	09-Nov-17	24-Nov-17	98
FM.P4.4C-2.130	Zone 4C-2:Prepare Geological assessment report	6	25-Nov-17	01-Dec-17	98
Zone 4C-3 (no ride footing)					
FM.P4.4C-3.100	Zone 4C-3: Excavate soil and rock from 19.3 mPD to 17.3 mPD	12	03-Nov-17	16-Nov-17	-63
FM.P4.4C-3.110	Zone 4C-3: Excavate rock from 17.3 mPD to 15.3 mPD	13	17-Nov-17	01-Dec-17	-63
FM.P4.4C-3.120	Zone 4C-3: Excavate rock from 15.3 mPD to 13.3 mPD	13	02-Dec-17	16-Dec-17	-63
Zone 4C-4 (no ride footing)					
FM.P4.4C-4.100	Zone 4C-4: Excavate rock from 16.1 mPD to 14.1 mPD	12	09-Nov-17	22-Nov-17	-42
FM.P4.4C-4.110	Zone 4C-4: Excavate rock from 14.1 mPD to 12.5 mPD (interface with L2 zone B)	12	23-Nov-17	06-Dec-17	-42
Zone 4B-3 (MP)					
FM.P4.4B-3.110	Submit BA14 site formation works	14	30-Sep-17*	18-Oct-17	76
FM.P4.4B-3.100	Zone 4B-3 Prepare Geological assessment report	6	22-Sep-17*	28-Sep-17	91
Phase 4C					
SF.P4.4C1190	Submit BA14 for Site Formation	14	15-Nov-17	30-Nov-17	6
Ride P5					
P5 RIDE FORMATION					
Zone 5A-1					



critical level of effort
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Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
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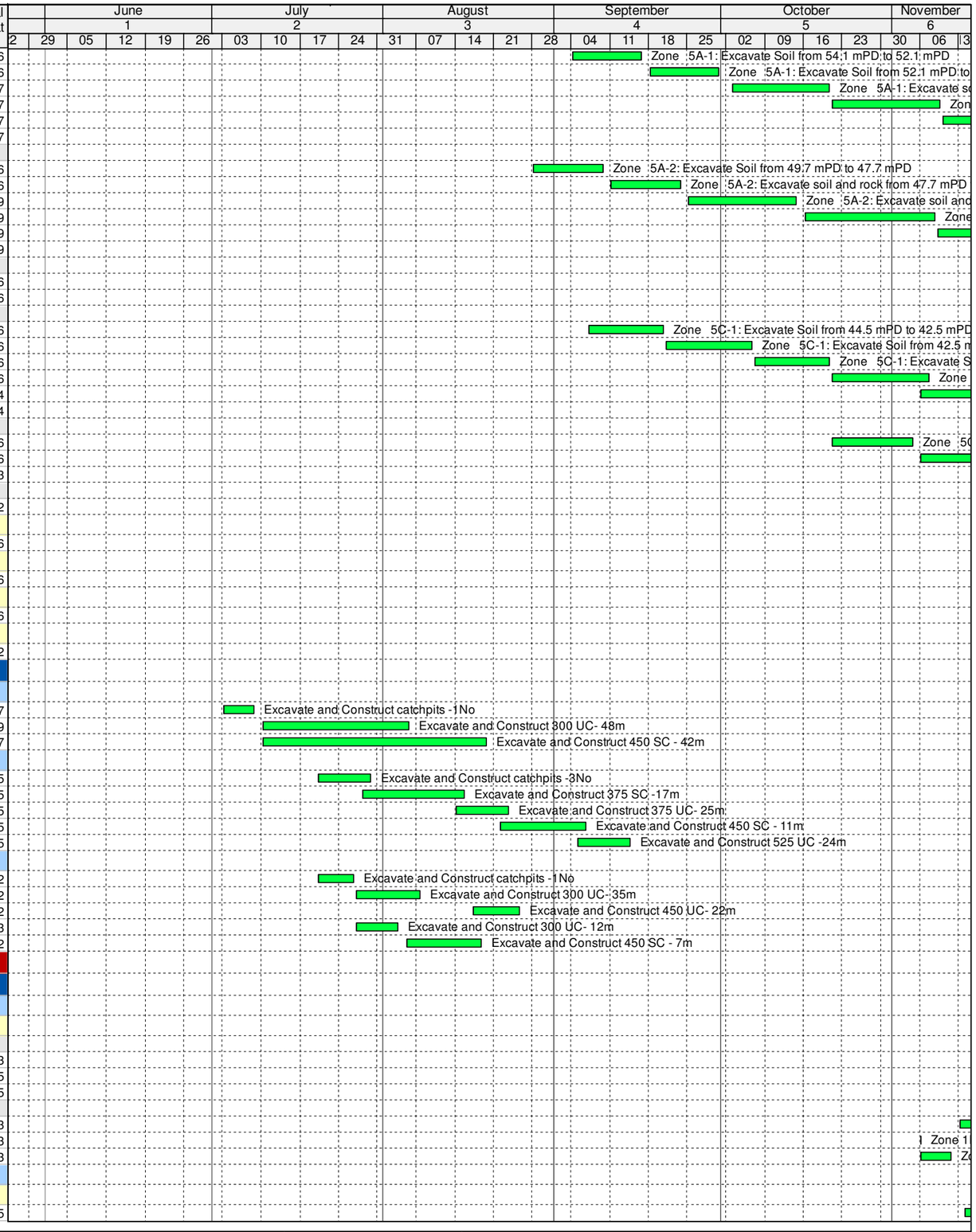
Page: 9 of 18

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
FM.P5.5A-1.120	Zone 5A-1: Excavate Soil from 54.1 mPD to 52.1 mPD	12	04-Sep-17	16-Sep-17	-26
FM.P5.5A-1.160	Zone 5A-1: Excavate Soil from 52.1 mPD to 50.1 mPD	12	18-Sep-17	30-Sep-17	-26
FM.P5.5A-1.210	Zone 5A-1: Excavate soil and rock from 50.1 mPD to 48.1 mPD	15	03-Oct-17	20-Oct-17	37
FM.P5.5A-1.260	Zone 5A-1: Excavate soil and rock from 48.1 mPD to 46.1 mPD	16	21-Oct-17	09-Nov-17	37
FM.P5.5A-1.330	Zone 5A-1: Excavate soil and rock from 46.1 mPD to 44.1 mPD	20	10-Nov-17	02-Dec-17	37
FM.P5.5A-1.400	Zone 5A-1: Excavate soil and rock from 44.1 mPD to 42.1 mPD	19	04-Dec-17	27-Dec-17	37
Zone 5A-2					
FM.P5.5A-2.130	Zone 5A-2: Excavate Soil from 49.7 mPD to 47.7 mPD	12	28-Aug-17	09-Sep-17	-26
FM.P5.5A-2.170	Zone 5A-2: Excavate soil and rock from 47.7 mPD to 45.7 mPD	12	11-Sep-17	23-Sep-17	-26
FM.P5.5A-2.220	Zone 5A-2: Excavate soil and rock from 45.7 mPD to 43.7 mPD	16	25-Sep-17	14-Oct-17	29
FM.P5.5A-2.280	Zone 5A-2: Excavate soil and rock from 43.7 mPD to 41.7 mPD	20	16-Oct-17	08-Nov-17	29
FM.P5.5A-2.350	Zone 5A-2: Excavate soil and rock from 41.7 mPD to 39.7 mPD	17	09-Nov-17	28-Nov-17	29
FM.P5.5A-2.410	Zone 5A-2: Excavate soil and rock from 39.7 mPD to 37.7 mPD	19	29-Nov-17	20-Dec-17	29
Zone 5C-3					
FM.P5.5C-3.100	Zone 5C-3: Excavate Soil from 35.3 mPD to 33.3 mPD	12	20-Nov-17	02-Dec-17	-26
FM.P5.5C-3.110	Zone 5C-3: Excavate soil and rock from 33.3 mPD to 31.3 mPD	12	04-Dec-17	16-Dec-17	-26
Zone 5C-1					
FM.P5.5C-1.100	Zone 5C-1: Excavate Soil from 44.5 mPD to 42.5 mPD	12	07-Sep-17	20-Sep-17	-26
FM.P5.5C-1.110	Zone 5C-1: Excavate Soil from 42.5 mPD to 40.5 mPD	12	21-Sep-17	06-Oct-17	-26
FM.P5.5C-1.120	Zone 5C-1: Excavate Soil from 40.5 mPD to 38.5 mPD	12	07-Oct-17	20-Oct-17	-26
FM.P5.5C-1.130	Zone 5C-1: Excavate Soil from 38.5 mPD to 36.5 mPD	14	21-Oct-17	07-Nov-17	-16
FM.P5.5C-1.140	Zone 5C-1: Excavate soil and rock from 36.5 mPD to 34.5 mPD	18	06-Nov-17	25-Nov-17	4
FM.P5.5C-1.150	Zone 5C-1: Excavate soil and rock from 34.5 mPD to 32.5 mPD	21	24-Nov-17	18-Dec-17	4
Zone 5C-2					
FM.P5.5C-2.100	Zone 5C-2: Excavate Soil from 38.6 mPD to 36.6 mPD	12	21-Oct-17	04-Nov-17	-26
FM.P5.5C-2.110	Zone 5C-2: Excavate Soil from 36.6 mPD to 34.6 mPD	12	06-Nov-17	18-Nov-17	-26
FM.P5.5C-2.120	Zone 5C-2: Excavate soil and rock from 34.6 mPD to 32.6 mPD	14	20-Nov-17	05-Dec-17	43
Zone 5D					
FM.P5.5D.100	Zone 5D: Excavate Soil from 35 mPD to 33 mPD	12	27-Nov-17	09-Dec-17	52
Phase 5C					
SF.P5.5C1150	Cut Rock to +30mPd and Stabilization Works	20	23-Nov-17	15-Dec-17	-6
Phase 5D					
SF.P5.5D1150	Cut Rock to +24mPd and Stabilization Works	23	15-Nov-17	11-Dec-17	-46
Phase 5E					
SF.P5.5E1120	Cut Soil Slope to +28mPd and Install Soil Nails	18	21-Nov-17	11-Dec-17	-46
Phase 5B					
SF.P5.5B1130	Cut Rock to +32mPd and Stabilization Works	14	30-Nov-17	15-Dec-17	-22
Drainage Channel to Slopes					
P4/5					
SFD.P45.1000	Excavate and Construct catchpits -1No	6	03-Jul-17	08-Jul-17	307
SFD.P45.1010	Excavate and Construct 300 UC- 48m	24	10-Jul-17	05-Aug-17	319
SFD.P45.1020	Excavate and Construct 450 SC - 42m	36	10-Jul-17	19-Aug-17	307
P1					
SFD.P1.1000	Excavate and Construct catchpits -3No	9	20-Jul-17	29-Jul-17	285
SFD.P1.1010	Excavate and Construct 375 SC -17m	16	28-Jul-17	15-Aug-17	285
SFD.P1.1020	Excavate and Construct 375 UC- 25m	9	14-Aug-17	23-Aug-17	285
SFD.P1.1030	Excavate and Construct 450 SC - 11m	14	22-Aug-17	06-Sep-17	285
SFD.P1.1040	Excavate and Construct 525 UC -24m	9	05-Sep-17	14-Sep-17	285
P3					
SFD.P3.1000	Excavate and Construct catchpits -1No	6	20-Jul-17	26-Jul-17	302
SFD.P3.1010	Excavate and Construct 300 UC- 35m	10	27-Jul-17	07-Aug-17	302
SFD.P3.1040	Excavate and Construct 450 UC- 22m	8	17-Aug-17	25-Aug-17	302
SFD.P3.1020	Excavate and Construct 300 UC- 12m	7	27-Jul-17	03-Aug-17	303
SFD.P3.1030	Excavate and Construct 450 SC - 7m	12	05-Aug-17	18-Aug-17	302
RIDES - PILING & FOOTINGS					
Zone 1 - Giant Aquatube Slide					
Zone 1 FOOTING					
Zone 1 Footing					
Zone 1B-2					
RC.P1.1A2260	Zone 1B-2: Submit BA8/10 for Foundation Works	28	04-Dec-17	08-Jan-18	213
RC.P1.1A2270	Zone 1B-2: Rock Excavation for Footings	0	27-Nov-17	27-Nov-17	-5
RC.P1.1A2280	Zone 1B-2: Founding report / BD Inspection of Bearing Stratum	6	27-Nov-17	02-Dec-17	-5
Zone 1B-1					
RC.P1.1A2310	Zone 1B-1: Submit BA8/10 for Foundation Works	28	13-Nov-17	14-Dec-17	13
RC.P1.1A2320	Zone 1B-1: Rock Excavation for Footings	0	06-Nov-17	06-Nov-17	13
RC.P1.1A2330	Zone 1B-1: Founding report / BD Inspection of Bearing Stratum	6	06-Nov-17	11-Nov-17	13
Phase 1B					
Footing					
RC.P1.1B2130	BD Inspection of Bearing Stratum	6	14-Nov-17	20-Nov-17	45



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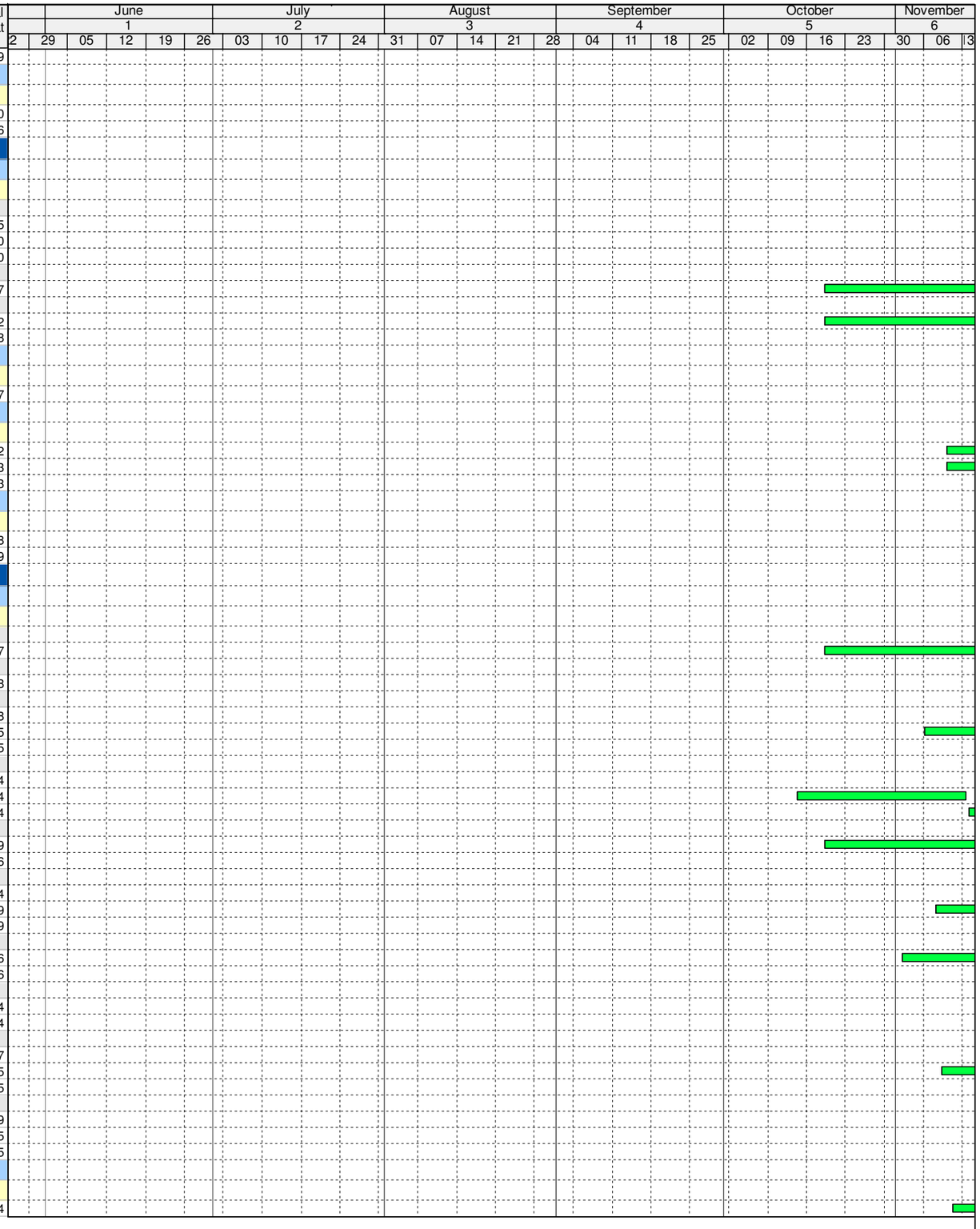
Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
Page: 10 of 18

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
RC.P1.1B2140	Construct Footings	23	28-Nov-17	23-Dec-17	39
Phase 1A-2					
Footing					
RC.P1.1A2210	Submit BA8/10 for Foundation Works	28	28-Nov-17	02-Jan-18	10
RC.P1.1A2220	Rock Excavation for Footings	16	28-Nov-17	15-Dec-17	16
Ride P2 - Aqua Twist Mat Races					
Zone 2 FOOTING					
Zone 2 Footing					
Zone 2C-2					
RCF.P2.2C-2.120	Zone 2C-2: Submit BA8/10 for Foundation Works	28	28-Nov-17	02-Jan-18	225
RCF.P2.2C-2.100	Zone 2C-2: Rock Excavation for Footings	0	21-Nov-17	21-Nov-17	0
RCF.P2.2C-2.110	Zone 2C-2: Founding report / BD Inspection of Bearing Stratum	6	21-Nov-17	27-Nov-17	0
Zone 2A-1					
RCF.P2.2A-1.100	Zone 2A-1: Rock Excavation for Footings	44	19-Oct-17	09-Dec-17	-17
Zone 2C-1 (MP)					
MP.P2.2B1480	Zone 2C-1 (MP): Submit BA8/10 for Minipiles	28	19-Oct-17	21-Nov-17	162
MP.P2.2B1490	Zone 2C-1 (MP): Minipiles (2V4R)	15	25-Nov-17	12-Dec-17	158
Phase 2B					
Minipiles					
MP.P2.2B1380	Pile Loading Test (1A-1 or 2B)	50	15-Nov-17	03-Jan-18	7
Phase 2A					
Footing					
RC.P2.2A2110	Submit BA8/10 for Foundation Works	28	10-Nov-17	12-Dec-17	62
RC.P2.2A2120	Rock Excavation for Footings	21	10-Nov-17	04-Dec-17	63
RC.P2.2A2130	BD Inspection of Bearing Stratum	6	05-Dec-17	11-Dec-17	63
Phase 2C					
Footing					
RC.P2.2C2110	Submit BA8/10 for Foundation Works	28	25-Nov-17	29-Dec-17	48
RC.P2.2C2120	Rock Excavation for Footings	11	25-Nov-17	07-Dec-17	59
Ride P3 - Hybrid Funnel/Dark Ride					
Zone 3 FOOTING					
Zone 3 Footing					
Zone 3B					
RCF.P3.3B.100	Zone 3B: Rock Excavation for Footings	50	19-Oct-17	16-Dec-17	-57
Zone 3A					
RCF.P3.3A.100	Zone 3A: Rock Excavation for Footings	28	16-Nov-17	18-Dec-17	-58
Zone 3A-2					
RCF.P3.3A-2.120	Zone 3A-2: Submit BA8/10 for Foundation Works	28	01-Dec-17	05-Jan-18	68
RCF.P3.3A-2.100	Zone 3A-2: Rock Excavation for Footings	16	06-Nov-17	23-Nov-17	35
RCF.P3.3A-2.110	Zone 3A-2: Founding report / BD Inspection of Bearing Stratum	6	24-Nov-17	30-Nov-17	35
Zone 3E-1					
RCF.P3.3E-1.120	Zone 3E-1: Submit BA8/10 for Foundation Works	28	21-Nov-17	22-Dec-17	44
RCF.P3.3E-1.100	Zone 3E-1: Rock Excavation for Footings	25	14-Oct-17	13-Nov-17	44
RCF.P3.3E-1.110	Zone 3E-1: Founding report / BD Inspection of Bearing Stratum	6	14-Nov-17	20-Nov-17	44
Zone 3E-2 (MP)					
MP.P3.3C1170	Zone 3E-2 (MP): Submit BA8/10 for Minipiles	28	19-Oct-17	21-Nov-17	79
MP.P3.3C1180	Zone 3E-2 (MP): Minipiles (3V3R)	14	25-Nov-17	11-Dec-17	76
Zone 3E-3					
RCF.P3.3E-3.120	Zone 3E-3: Submit BA8/10 for Foundation Works (formation below 3C-2)	28	27-Nov-17	30-Dec-17	104
RCF.P3.3E-3.100	Zone 3E-3: Rock Excavation for Footings	10	08-Nov-17	18-Nov-17	39
RCF.P3.3E-3.110	Zone 3E-3: Founding report / BD Inspection of Bearing Stratum	6	20-Nov-17	25-Nov-17	39
Zone 3E-4 (MP)					
MP.P3.3C1200	Zone 3E-4 (MP): Submit BA8/10 for Minipiles	28	02-Nov-17	04-Dec-17	76
MP.P3.3C1210	Zone 3E-4 (MP): Minipiles (3V3R)	14	05-Dec-17	20-Dec-17	76
Zone 3E-5					
RCF.P3.3E-5.100	Zone 3E-5: Rock Excavation for Footings	6	25-Nov-17	01-Dec-17	-44
RCF.P3.3E-5.110	Zone 3E-5: Founding report / BD Inspection of Bearing Stratum	6	02-Dec-17	08-Dec-17	-44
Zone 3F					
RCF.P3.3F.120	Zone 3F: Submit BA8/10 for Foundation Works	28	01-Dec-17	05-Jan-18	47
RCF.P3.3F.100	Zone 3F: Rock Excavation for Footings	13	09-Nov-17	23-Nov-17	35
RCF.P3.3F.110	Zone 3F: Founding report / BD Inspection of Bearing Stratum	6	24-Nov-17	30-Nov-17	35
Zone 3G-1					
RCF.P3.3G-1.120	Zone 3G-1: Submit BA8/10 for Foundation Works	28	01-Dec-17	05-Jan-18	229
RCF.P3.3G-1.100	Zone 3G-1: Rock Excavation for Footings	0	24-Nov-17	24-Nov-17	35
RCF.P3.3G-1.110	Zone 3G-1: Founding report / BD Inspection of Bearing Stratum	6	24-Nov-17	30-Nov-17	35
Phase 3A					
Footing					
RC.P3.3A2150	Backfill Footing	7	11-Nov-17	18-Nov-17	14



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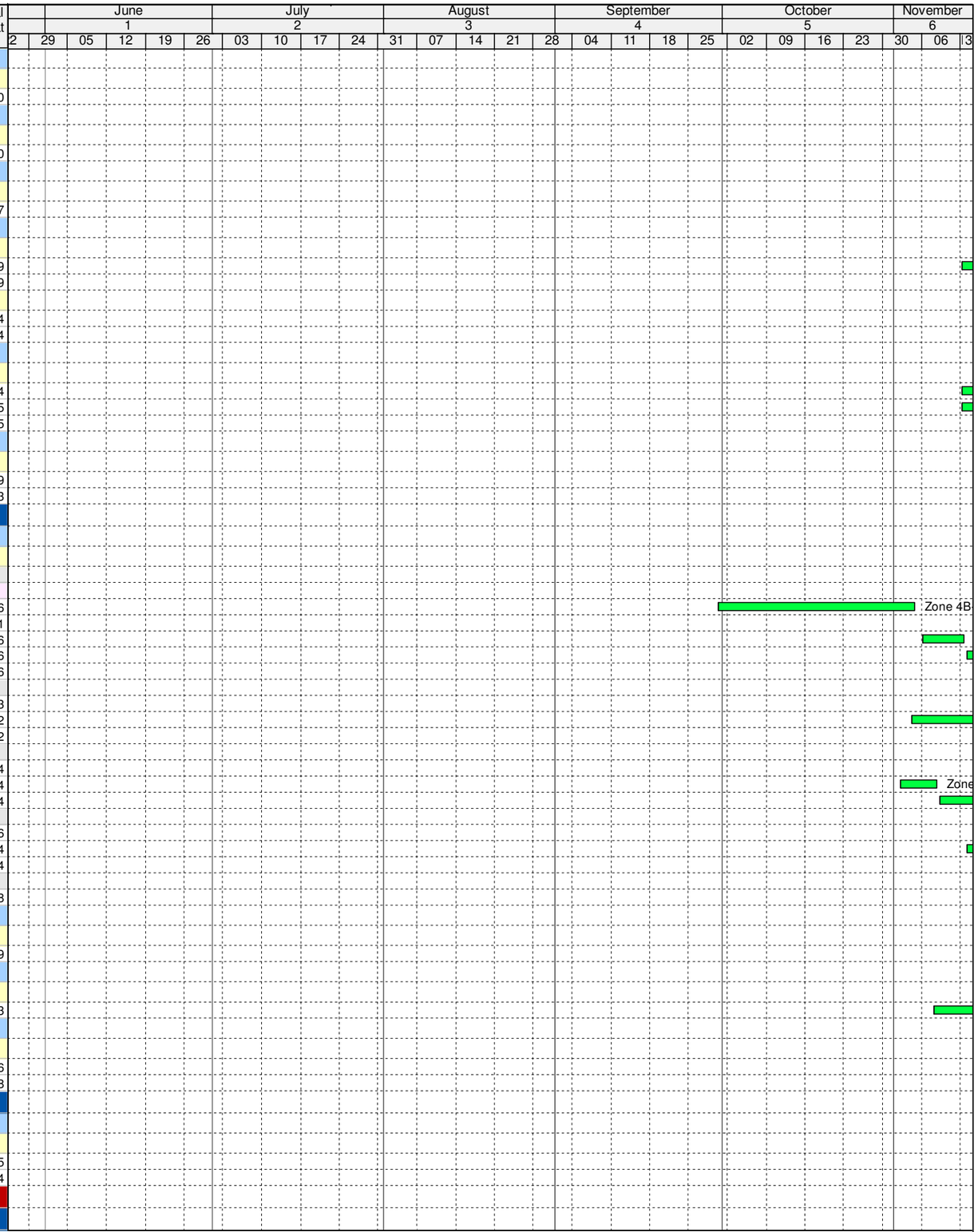
Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
Phase 3B					
Footing					
RC.P3.3B2150	Backfill Footing	5	30-Nov-17	05-Dec-17	40
Phase 3D					
Footing					
RC.P3.3D2150	Backfill Footing	2	04-Dec-17	05-Dec-17	0
Phase 3C					
Footing / Pile Cap					
RC.P3.3C2150	Backfill Footing	2	25-Nov-17	27-Nov-17	7
Phase 3E					
Footing					
RC.P3.3E2130	BD Inspection of Bearing Stratum	6	13-Nov-17	18-Nov-17	19
RC.P3.3E2140	Construct Footings	30	20-Nov-17	23-Dec-17	19
Minipiles					
MP.P3.3E1130	Post-Drilling	6	25-Nov-17	01-Dec-17	-44
MP.P3.3E1140	Submit BA14 & Completion Report 3E& 3C (early strength concrete)	3	02-Dec-17	05-Dec-17	-44
Phase 3F					
Footing					
RC.P3.3F2110	Submit BA8/10 for Foundation Works	28	13-Nov-17	14-Dec-17	4
RC.P3.3F2120	Rock Excavation for Footings	11	13-Nov-17	24-Nov-17	15
RC.P3.3F2130	BD Inspection of Bearing Stratum	6	25-Nov-17	01-Dec-17	15
Phase 3G					
Footing					
RC.P3.3G2110	Submit BA8/10 for Foundation Works	28	28-Nov-17	02-Jan-18	29
RC.P3.3G2120	Rock Excavation for Footings	38	28-Nov-17	13-Jan-18	13
Ride P4 - Aqua Drop Speed Slide					
Zone 4 FOOTING					
Zone 4 Footing					
Zone 4B-3 (MP)-1					
Piling Works					
MP.P4.4A1170	Zone 4B-3: Piling Works: Submit BA8/10 for Minipiles	28	30-Sep-17	04-Nov-17	76
MP.P4.4A1200	Piling Works: Minipiles (2V2R)	10	25-Nov-17	06-Dec-17	101
MP.P4.4A1180	Piling Works: Preparation of Trial Pile	7	06-Nov-17	13-Nov-17	76
MP.P4.4A1190	Piling Works: Trial Pile	7	14-Nov-17	21-Nov-17	76
MP.P4.4A1270	Piling Works: Approval of Trial Pile	3	22-Nov-17	24-Nov-17	76
Zone 4A					
RCF.P4.4A.120	Zone 4A: Submit BA8/10 for Foundation Works	28	30-Nov-17	04-Jan-18	113
RCF.P4.4A.100	Zone 4A: Rock Excavation for Footings	16	04-Nov-17	22-Nov-17	112
RCF.P4.4A.110	Zone 4A: Founding report / BD Inspection of Bearing Stratum	6	23-Nov-17	29-Nov-17	112
Zone 4B-1					
RCF.P4.4B-1.120	Zone 4B-1: Submit BA8/10 for Foundation Works	28	16-Nov-17	18-Dec-17	124
RCF.P4.4B-1.100	Zone 4B-1: Rock Excavation for Footings	6	02-Nov-17	08-Nov-17	124
RCF.P4.4B-1.110	Zone 4B-1: Founding report / BD Inspection of Bearing Stratum	6	09-Nov-17	15-Nov-17	124
Zone 4B-2					
RCF.P4.4B-2.120	Zone 4B-2: Submit BA8/10 for Foundation Works	28	28-Nov-17	02-Jan-18	156
RCF.P4.4B-2.100	Zone 4B-2: Rock Excavation for Footings	6	14-Nov-17	20-Nov-17	114
RCF.P4.4B-2.110	Zone 4B-2: Founding report / BD Inspection of Bearing Stratum	6	21-Nov-17	27-Nov-17	114
Zone 4C-2					
RCF.P4.4C-2.100	Zone 4C-2: Rock Excavation for Footings	6	02-Dec-17	08-Dec-17	98
Phase 4A					
Minipile					
MP.P4.4A1160	Pile Loading Test	49	16-Nov-17	15-Jan-18	-39
Phase 4B					
Footing					
RC.P4.4B2150	Backfill Footing	26	08-Nov-17	07-Dec-17	63
Phase 4C					
Footing					
RC.P4.4C2110	Submit BA8/10 for Foundation Works	28	15-Nov-17	16-Dec-17	6
RC.P4.4C2120	Rock Excavation for Footings	26	15-Nov-17	14-Dec-17	18
Ride P5 - Family Boomerango					
Phase 5A					
Footing					
RC.P5.5A2130	BD Inspection of Bearing Stratum	6	17-Nov-17	23-Nov-17	55
RC.P5.5A2140	Construct Footings	18	25-Nov-17	15-Dec-17	54
RISING MAIN (SEWERAGE)					
Site Formation/Access/ Excavation					



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Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
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IMPACTEDrevised rides 20171003
Page: 12 of 18

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

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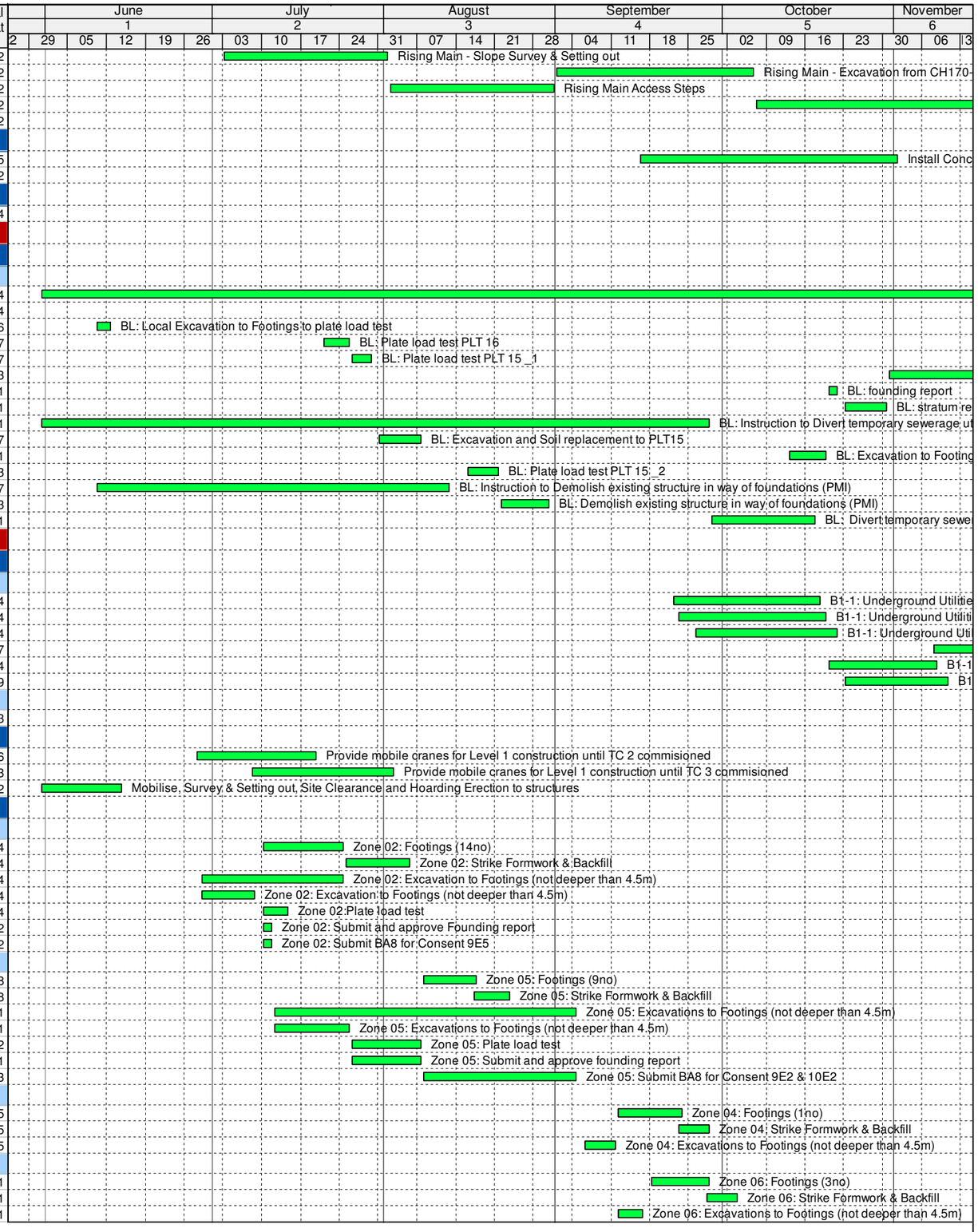
Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
RM.SFGE.1010	Rising Main - Slope Survey & Setting out	24	03-Jul-17	01-Aug-17	162
RM.SFHL.1110	Rising Main - Excavation from CH170-CH220	27	01-Sep-17	06-Oct-17	162
RM.SFGE.1020	Rising Main Access Steps	24	02-Aug-17	31-Aug-17	162
RM.SFHL.1120	Rising Main - Excavation from CH220-CH250 with ELS	40	07-Oct-17	25-Nov-17	162
RM.SFHL.1130	Rising Main - Excavation from CH250 to Existing Sewerage Manhole with ELS	26	27-Nov-17	28-Dec-17	182
Thrust Block, Pipe Trough & Slope Pipe					
RM.PTHL.1010	Install Concrete Slope Pipe Supports 17no.	34	16-Sep-17	01-Nov-17	185
RM.PTHL.1050	Thrust Blocks: Construct TB 6,7,8,9 & 10	26	27-Nov-17	28-Dec-17	162
Pipeworks & Fittings					
RM.PIHL.1100	Install Pipe: CH162 - CH220	21	27-Nov-17	20-Dec-17	164
SOUTH SERVICES BUILDING					
Basement Level					
Basement Level					
SB.BLS.0110	BL: Excavation to Footings	138	31-May-17*	27-Nov-17	-124
SB.BLS.130	BL: Raft Footings & Wall Kickers	15	28-Nov-17*	14-Dec-17	-124
SB.BLS.140	BL: Local Excavation to Footings to plate load test	2	10-Jun-17	12-Jun-17	-46
SB.BLS.150	BL: Plate load test PLT 16	4	21-Jul-17	25-Jul-17*	-27
SB.BLS.160	BL: Plate load test PLT 15 _1	4	26-Jul-17	29-Jul-17*	-77
SB.BLS.170	BL: BA8 Submit and Consent for foundations	28	31-Oct-17*	27-Nov-17	-163
SB.BLS.180	BL: founding report	2	20-Oct-17	21-Oct-17	-121
SB.BLS.190	BL: stratum report	6	23-Oct-17*	30-Oct-17	-121
SB.BLS.200	BL: Instruction to Divert temporary sewerage utilities (PMI)	90	31-May-17	28-Sep-17	-121
SB.BLS.210	BL: Excavation and Soil replacement to PLT15	6	31-Jul-17	07-Aug-17	-77
SB.BLS.220	BL: Excavation to Footings	6	13-Oct-17	19-Oct-17	-121
SB.BLS.230	BL: Plate load test PLT 15 _2	4	16-Aug-17*	21-Aug-17	-83
SB.BLS.240	BL: Instruction to Demolish existing structure in way of foundations (PMI)	47	10-Jun-17	12-Aug-17	-77
SB.BLS.250	BL: Demolish existing structure in way of foundations (PMI)	7	22-Aug-17	30-Aug-17	-83
SB.BLS.260	BL: Divert temporary sewerage utilities(PMI)	14	29-Sep-17	17-Oct-17*	-121
PRIMARY RC STRUCTURE					
Basement Level BL					
Zone B1-1					
SP.BLS.1120	B1-1: Underground Utilities -1 (8 pits)	21	22-Sep-17	18-Oct-17	-14
SP.BLS.1130	B1-1: Underground Utilities -2 (8 pits)	21	23-Sep-17	19-Oct-17	-14
SP.BLS.1140	B1-1: Underground Utilities -3 (7 pits)	21	26-Sep-17	21-Oct-17	-14
SP.BLS.1150	B1-1: On-Grade Slab - 1 (28 bays)	16	08-Nov-17	25-Nov-17	17
SP.BLS.1160	B1-1: On-Grade Slab - 2 (28 bays)	16	20-Oct-17	08-Nov-17	-14
SP.BLS.1170	B1-1: On-Grade Slab - 3 (28 bays)	16	23-Oct-17	10-Nov-17	29
Zone B1-2					
SP.BLS.1220	B1-2: Underground Utilities (4 pits)	21	15-Nov-17	08-Dec-17	-33
General					
OP.270	Provide mobile cranes for Level 1 construction until TC 2 commisioned	22	28-Jun-17	19-Jul-17	-16
OP.280	Provide mobile cranes for Level 1 construction until TC 3 commisioned	26	08-Jul-17	02-Aug-17	-13
PR.SWGE.1250	Mobilise, Survey & Setting out, Site Clearance and Hoarding Erection to structures	12	31-May-17	14-Jun-17*	-82
Foundations					
Zone 02 (Foundation Level 1) (GL 46-49/DD-FF)					
SPL1S.1050	Zone 02: Footings (14no)	11	10-Jul-17	24-Jul-17	-14
SPL1S.1060	Zone 02: Strike Formwork & Backfill	10	25-Jul-17	05-Aug-17	-14
SPL1S.1090	Zone 02: Excavation to Footings (not deeper than 4.5m)	18	29-Jun-17	24-Jul-17	-14
SPL1S.1220	Zone 02: Excavation to Footings (not deeper than 4.5m)	7	29-Jun-17	08-Jul-17*	-14
SPL1S.1230	Zone 02:Plate load test	4	10-Jul-17	14-Jul-17	-14
SPL1S.1390	Zone 02: Submit and approve Founding report	2	10-Jul-17	11-Jul-17*	-12
SPL1S.1430	Zone 02: Submit BA8 for Consent 9E5	2	10-Jul-17	11-Jul-17*	-12
Zone 05 (Foundation Level 1) (GL35-40/HH-KK)					
SPL1S.1070	Zone 05: Footings (9no)	9	08-Aug-17	17-Aug-17	-8
SPL1S.1080	Zone 05: Strike Formwork & Backfill	5	17-Aug-17	23-Aug-17	-8
SPL1S.1100	Zone 05: Excavations to Footings (not deeper than 4.5m)	43	12-Jul-17	04-Sep-17	-31
SPL1S.1240	Zone 05: Excavations to Footings (not deeper than 4.5m)	10	12-Jul-17	25-Jul-17*	-31
SPL1S.1250	Zone 05: Plate load test	10	26-Jul-17	07-Aug-17	-12
SPL1S.1380	Zone 05: Submit and approve founding report	10	26-Jul-17	07-Aug-17*	-31
SPL1S.1420	Zone 05: Submit BA8 for Consent 9E2 & 10E2	28	08-Aug-17	04-Sep-17*	-43
Zone 04 (GL 33-36/BB-EE)					
SPL1S.1155	Zone 04: Footings (1no)	10	12-Sep-17	23-Sep-17	-35
SPL1S.1165	Zone 04: Strike Formwork & Backfill	5	23-Sep-17	28-Sep-17	-35
SPL1S.1145	Zone 04: Excavations to Footings (not deeper than 4.5m)	5	06-Sep-17	11-Sep-17	-35
Zone 06 Foundation Level 2 (GL 173-175/PP-MM)					
SPL1S.1185	Zone 06: Footings (3no)	9	18-Sep-17	28-Sep-17	571
SPL1S.1195	Zone 06: Strike Formwork & Backfill	4	28-Sep-17	03-Oct-17	571
SPL1S.1175	Zone 06: Excavations to Footings (not deeper than 4.5m)	5	12-Sep-17	16-Sep-17	571



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Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
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OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

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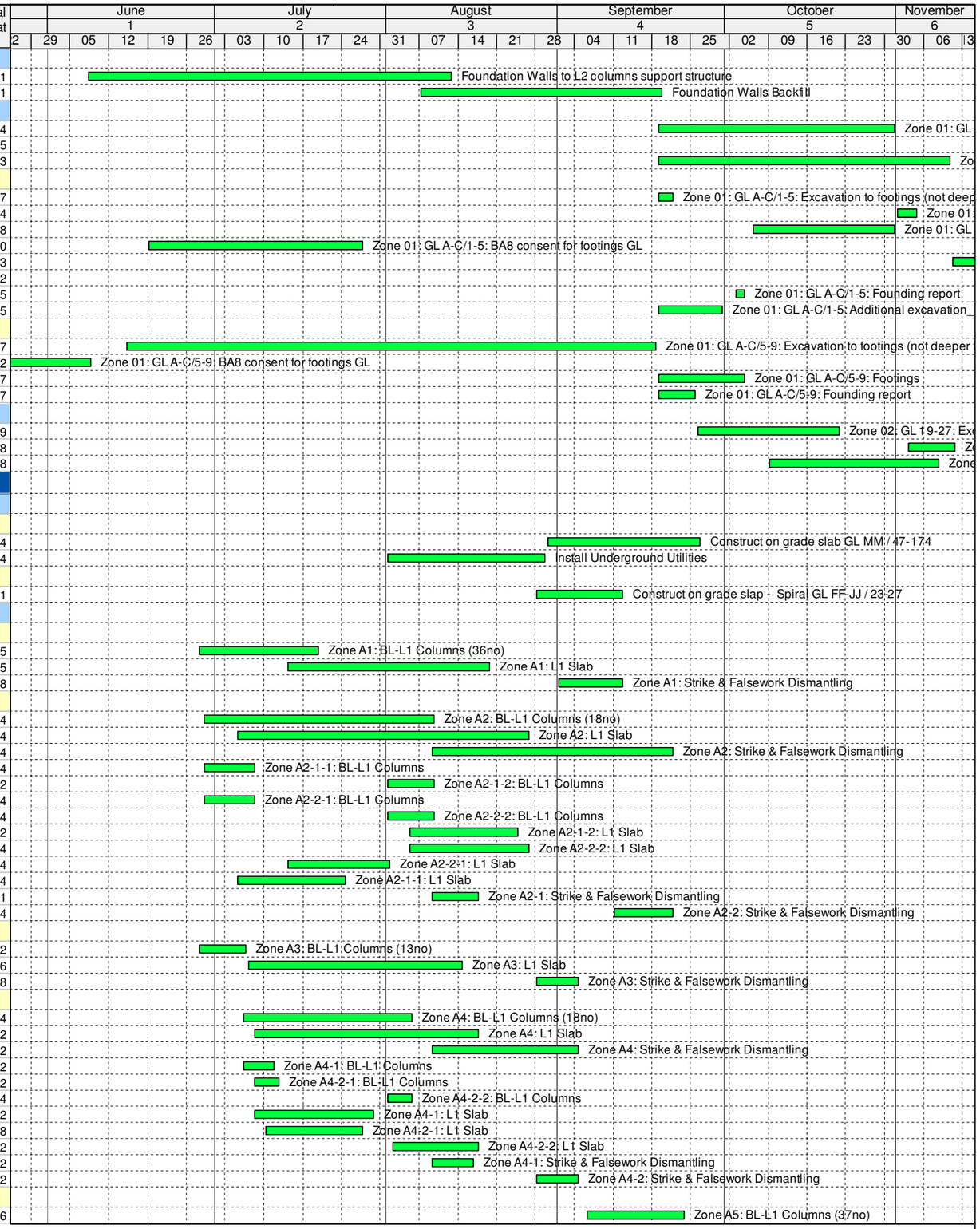
Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
L2 Columns support gravity structure foundations walls GL T-171					
SPL1S.1200	Foundation Walls to L2 columns support structure	48	08-Jun-17	12-Aug-17	21
SPL1S.1210	Foundation Walls Backfill	36	07-Aug-17	19-Sep-17	21
Zone 01 (Foundation transformer room) (GL A-C/1-9)					
SPL1S.1010	Zone 01: GL A-C/1-9: Footings (24 no)	31	19-Sep-17	31-Oct-17	-44
SPL1S.1020	Zone 01: GL A-C/1-9: Backfill	18	01-Dec-17	21-Dec-17	-45
SPL1S.1110	Zone 01: GL A-C/1-9: Excavation to footings (not deeper than 4.5m)	40	19-Sep-17	10-Nov-17	-33
Grid 1-5					
SPL1S.12600	Zone 01: GL A-C/1-5: Excavation to footings (not deeper than 4.5m)	2	19-Sep-17	21-Sep-17	-37
SPL1S.12750	Zone 01: GL A-C/1-5: Plate load test	4	01-Nov-17	04-Nov-17	-44
SPL1S.12800	Zone 01: GL A-C/1-5: RFI HT cable in way of Plate load test (PMI to divert)	21	06-Oct-17	31-Oct-17	-48
SPL1S.12900	Zone 01: GL A-C/1-5: BA8 consent for footings GL	28	19-Jun-17	27-Jul-17*	0
SPL1S.13200	Zone 01: GL A-C/1-5: Footings	12	11-Nov-17	24-Nov-17	-33
SPL1S.13400	Zone 01: GL A-C/1-5: Backfill	5	01-Dec-17	06-Dec-17	-32
SPL1S.14000	Zone 01: GL A-C/1-5: Founding report	2	03-Oct-17	04-Oct-17	-45
SPL1S.14100	Zone 01: GL A-C/1-5: Additional excavation_ 1m depth and soil replacment	10	19-Sep-17	30-Sep-17	-45
Grid 5-9					
SPL1S.1300	Zone 01: GL A-C/5-9: Excavation to footings (not deeper than 4.5m)	72	15-Jun-17	18-Sep-17	-77
SPL1S.1310	Zone 01: GL A-C/5-9: BA8 consent for footings GL	28	02-May-17	08-Jun-17*	-2
SPL1S.1330	Zone 01: GL A-C/5-9: Footings	12	19-Sep-17	04-Oct-17	-77
SPL1S.1320	Zone 01: GL A-C/5-9: Founding report	6	19-Sep-17	25-Sep-17	-37
Zone 03 (North Wall-Foundation Level 3) GL19-27					
SPL1S.1105	Zone 02: GL 19-27: Excavation to footings (not deeper than 4.5m)	19	26-Sep-17*	21-Oct-17	-29
SPL1S.1115	Zone 02: GL 19-27: Strike Formwork & Backfill	8	03-Nov-17	11-Nov-17	-28
SPL1S.1135	Zone 02: GL 19-27: Footings (7no)	24	09-Oct-17	08-Nov-17	-28
Level 1					
Slab					
On Grade Slab					
OG.L1.1010	Construct on grade slab GL MM / 47-174	21	30-Aug-17	26-Sep-17	164
OG.L1.1000	Install Underground Utilities	21	01-Aug-17	29-Aug-17	164
Spiral slab					
OG.L1.1020	Construct on grade slap - Spiral GL FF-JJ / 23-27	14	28-Aug-17	12-Sep-17	31
Zone A					
Zone A1					
SPL1A.1110	Zone A1: BL-L1 Columns (36no)	15	28-Jun-17	19-Jul-17	-15
SPL1A.1120	Zone A1: L1 Slab	28	14-Jul-17	19-Aug-17	-15
SPL1A.1130	Zone A1: Strike & Falsework Dismantling	9	01-Sep-17	12-Sep-17	-8
Zone A2					
SPL1A.1210	Zone A2: BL-L1 Columns (18no)	30	29-Jun-17	09-Aug-17	-14
SPL1A.1220	Zone A2: L1 Slab	40	05-Jul-17	26-Aug-17	-14
SPL1A.1230	Zone A2: Strike & Falsework Dismantling	33	09-Aug-17	21-Sep-17	-14
SPL1A.1730	Zone A2-1-1: BL-L1 Columns	6	29-Jun-17	08-Jul-17	4
SPL1A.1880	Zone A2-1-2: BL-L1 Columns	6	01-Aug-17	09-Aug-17	-12
SPL1A.1740	Zone A2-2-1: BL-L1 Columns	6	29-Jun-17	08-Jul-17	4
SPL1A.1890	Zone A2-2-2: BL-L1 Columns	6	01-Aug-17	09-Aug-17	-14
SPL1A.1900	Zone A2-1-2: L1 Slab	14	05-Aug-17	24-Aug-17	-12
SPL1A.1910	Zone A2-2-2: L1 Slab	16	05-Aug-17	26-Aug-17	-14
SPL1A.1790	Zone A2-2-1: L1 Slab	15	14-Jul-17	01-Aug-17	4
SPL1A.1780	Zone A2-1-1: L1 Slab	15	05-Jul-17	24-Jul-17	4
SPL1A.1800	Zone A2-1: Strike & Falsework Dismantling	8	09-Aug-17	17-Aug-17	11
SPL1A.1810	Zone A2-2: Strike & Falsework Dismantling	8	11-Sep-17	21-Sep-17	-14
Zone A3					
SPL1A.1310	Zone A3: BL-L1 Columns (13no)	6	28-Jun-17	06-Jul-17	2
SPL1A.1320	Zone A3: L1 Slab	29	07-Jul-17	14-Aug-17	6
SPL1A.1330	Zone A3: Strike & Falsework Dismantling	7	28-Aug-17	04-Sep-17	58
Zone A4					
SPL1A.1410	Zone A4: BL-L1 Columns (18no)	24	06-Jul-17	05-Aug-17	-14
SPL1A.1420	Zone A4: L1 Slab	31	08-Jul-17	17-Aug-17	-2
SPL1A.1430	Zone A4: Strike & Falsework Dismantling	21	09-Aug-17	04-Sep-17	-2
SPL1A.1850	Zone A4-1: BL-L1 Columns	5	06-Jul-17	11-Jul-17	2
SPL1A.1860	Zone A4-2-1: BL-L1 Columns	4	08-Jul-17	12-Jul-17	2
SPL1A.1870	Zone A4-2-2: BL-L1 Columns	4	01-Aug-17	05-Aug-17	-14
SPL1A.1920	Zone A4-1: L1 Slab	17	08-Jul-17	29-Jul-17	12
SPL1A.1930	Zone A4-2-1: L1 Slab	14	10-Jul-17	27-Jul-17	8
SPL1A.1940	Zone A4-2-2: L1 Slab	12	02-Aug-17	17-Aug-17	-2
SPL1A.1950	Zone A4-1: Strike & Falsework Dismantling	7	09-Aug-17	16-Aug-17	12
SPL1A.1960	Zone A4-2: Strike & Falsework Dismantling	7	28-Aug-17	04-Sep-17	-2
Zone A5					
SPL1A.1510	Zone A5: BL-L1 Columns (37no)	14	06-Sep-17	23-Sep-17	-36



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OCEAN PARK - TAI SHUE WAN DEVELOPMENT
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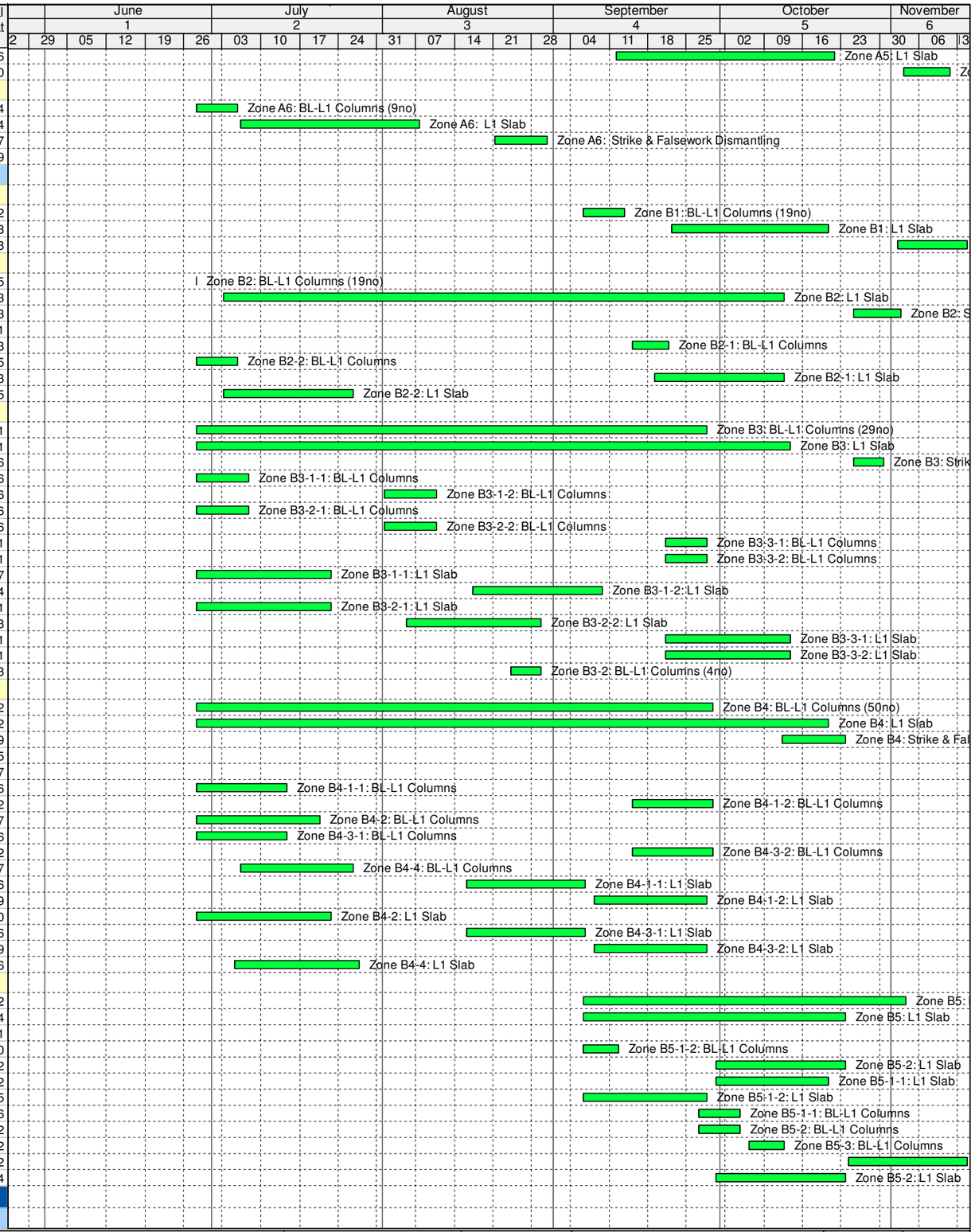
SPL1A.1520	Zone A5: L1 Slab	31	12-Sep-17	21-Oct-17	-36
SPL1A.1530	Zone A5: Strike & Falsework Dismantling	8	03-Nov-17	11-Nov-17	-10
Zone A6					
SPL1A.1610	Zone A6: BL-L1 Columns (9no)	5	28-Jun-17	05-Jul-17	34
SPL1A.1620	Zone A6: L1 Slab	25	06-Jul-17	07-Aug-17	34
SPL1A.1630	Zone A6: Strike & Falsework Dismantling	8	21-Aug-17	30-Aug-17	47
SPL1A.1640	Zone A6: Falsework Dismantling (350)	6	21-Nov-17	27-Nov-17	69
Zone B					
Zone B1					
SPL1B.1110	Zone B1: BL-L1 Columns (19no)	7	06-Sep-17	13-Sep-17	-32
SPL1B.1120	Zone B1: L1 Slab	23	22-Sep-17	20-Oct-17	-33
SPL1B.1130	Zone B1: Strike & Falsework Dismantling	11	02-Nov-17	14-Nov-17	-33
Zone B2					
SPL1B.1210	Zone B2: BL-L1 Columns (19no)	0	28-Jun-17	28-Jun-17	655
SPL1B.1220	Zone B2: L1 Slab	76	03-Jul-17	12-Oct-17	-23
SPL1B.1230	Zone B2: Strike & Falsework Dismantling	7	25-Oct-17	02-Nov-17	-23
SPL1B.1240	Zone B2: Falsework Dismantling (350)	6	30-Nov-17	06-Dec-17	61
SPL1B.1570	Zone B2-1: BL-L1 Columns	5	15-Sep-17	21-Sep-17	-23
SPL1B.1560	Zone B2-2: BL-L1 Columns	5	28-Jun-17	05-Jul-17	35
SPL1B.1580	Zone B2-1: L1 Slab	18	19-Sep-17	12-Oct-17	-23
SPL1B.1550	Zone B2-2: L1 Slab	18	03-Jul-17	26-Jul-17	35
Zone B3					
SPL1B.1310	Zone B3: BL-L1 Columns (29no)	69	28-Jun-17	28-Sep-17	-11
SPL1B.1320	Zone B3: L1 Slab	80	28-Jun-17	13-Oct-17	-11
SPL1B.1330	Zone B3: Strike & Falsework Dismantling	4	25-Oct-17	30-Oct-17	16
SPL1B.1590	Zone B3-1-1: BL-L1 Columns	7	28-Jun-17	07-Jul-17	46
SPL1B.1600	Zone B3-1-2: BL-L1 Columns	7	01-Aug-17	10-Aug-17	26
SPL1B.1610	Zone B3-2-1: BL-L1 Columns	7	28-Jun-17	07-Jul-17	46
SPL1B.1620	Zone B3-2-2: BL-L1 Columns	7	01-Aug-17	10-Aug-17	26
SPL1B.1630	Zone B3-3-1: BL-L1 Columns	7	21-Sep-17	28-Sep-17	-11
SPL1B.1640	Zone B3-3-2: BL-L1 Columns	7	21-Sep-17	28-Sep-17	-11
SPL1B.1650	Zone B3-1-1: L1 Slab	18	28-Jun-17	22-Jul-17	47
SPL1B.1660	Zone B3-1-2: L1 Slab	18	17-Aug-17	09-Sep-17	14
SPL1B.1670	Zone B3-2-1: L1 Slab	18	28-Jun-17	22-Jul-17	51
SPL1B.1680	Zone B3-2-2: L1 Slab	18	05-Aug-17	29-Aug-17	23
SPL1B.1690	Zone B3-3-1: L1 Slab	18	21-Sep-17	13-Oct-17	-11
SPL1B.1700	Zone B3-3-2: L1 Slab	18	21-Sep-17	13-Oct-17	-11
SPL1B.1350	Zone B3-2: BL-L1 Columns (4no)	5	24-Aug-17	29-Aug-17	23
Zone B4					
SPL1B.1410	Zone B4: BL-L1 Columns (50no)	70	28-Jun-17	29-Sep-17	-32
SPL1B.1420	Zone B4: L1 Slab	86	28-Jun-17	20-Oct-17	72
SPL1B.1430	Zone B4: Strike & Falsework Dismantling	10	12-Oct-17	23-Oct-17	89
SPL1B.1440	Zone B4: Falsework Dismantling (350)	6	25-Nov-17	01-Dec-17	65
SPL1B.1450	Zone B4: Falsework Dismantling (250)	6	05-Dec-17	11-Dec-17	57
SPL1B.1710	Zone B4-1-1: BL-L1 Columns	12	28-Jun-17	14-Jul-17	16
SPL1B.1720	Zone B4-1-2: BL-L1 Columns	12	15-Sep-17	29-Sep-17	-32
SPL1B.1730	Zone B4-2: BL-L1 Columns	16	28-Jun-17	20-Jul-17	17
SPL1B.1740	Zone B4-3-1: BL-L1 Columns	12	28-Jun-17	14-Jul-17	16
SPL1B.1750	Zone B4-3-2: BL-L1 Columns	12	15-Sep-17	29-Sep-17	-32
SPL1B.1760	Zone B4-4: BL-L1 Columns	16	06-Jul-17	26-Jul-17	17
SPL1B.1810	Zone B4-1-1: L1 Slab	16	16-Aug-17	06-Sep-17	26
SPL1B.1820	Zone B4-1-2: L1 Slab	16	08-Sep-17	28-Sep-17	9
SPL1B.1770	Zone B4-2: L1 Slab	18	28-Jun-17	22-Jul-17	60
SPL1B.1790	Zone B4-3-1: L1 Slab	16	16-Aug-17	06-Sep-17	26
SPL1B.1800	Zone B4-3-2: L1 Slab	16	08-Sep-17	28-Sep-17	9
SPL1B.1780	Zone B4-4: L1 Slab	18	05-Jul-17	27-Jul-17	56
Zone B5					
SPL1B.1510	Zone B5: BL-L1 Columns (42no)	46	06-Sep-17	03-Nov-17	-32
SPL1B.1520	Zone B5: L1 Slab	37	06-Sep-17	23-Oct-17	-14
SPL1B.1530	Zone B5: Strike & Falsework Dismantling	9	15-Nov-17	24-Nov-17	-21
SPL1B.1870	Zone B5-1-2: BL-L1 Columns	6	06-Sep-17	12-Sep-17	-10
SPL1B.1910	Zone B5-2: L1 Slab	18	30-Sep-17	23-Oct-17	-32
SPL1B.1880	Zone B5-1-1: L1 Slab	16	30-Sep-17	20-Oct-17	-32
SPL1B.1890	Zone B5-1-2: L1 Slab	18	06-Sep-17	28-Sep-17	5
SPL1B.1860	Zone B5-1-1: BL-L1 Columns	6	27-Sep-17	04-Oct-17	-26
SPL1B.1900	Zone B5-2: BL-L1 Columns	6	27-Sep-17	04-Oct-17	-32
SPL1B.1930	Zone B5-3: BL-L1 Columns	6	06-Oct-17	12-Oct-17	-32
SPL1B.1940	Zone B5-3: L1 Slab	18	24-Oct-17	14-Nov-17	-32
SPL1B.1920	Zone B5-2: L1 Slab	18	30-Sep-17	23-Oct-17	-14
Level 2					
On Grade Slab					



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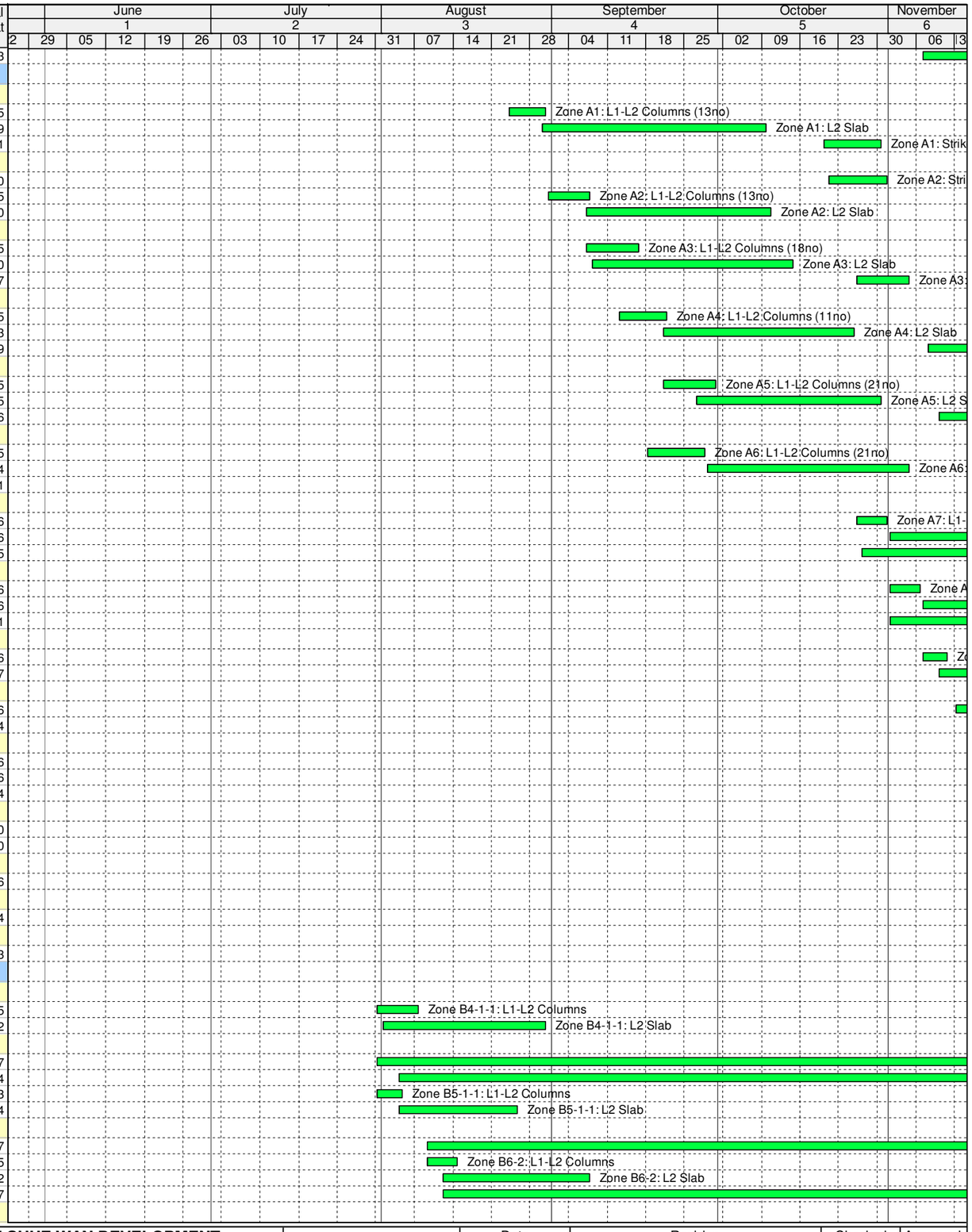
ID	Activity	Duration	Start	Finish	Total Float
SPL2S.2010	GL 172-KK: On-grade Slab	10	07-Nov-17	17-Nov-17	-23
Zone A					
Zone A1					
SPL2A.2110	Zone A1: L1-L2 Columns (13no)	6	24-Aug-17	30-Aug-17	-15
SPL2A.2120	Zone A1: L2 Slab	30	30-Aug-17	09-Oct-17	-9
SPL2A.2130	Zone A1: Strike & Falsework Dismantling	8	20-Oct-17	30-Oct-17	141
Zone A2					
SPL2A.2230	Zone A2: Strike & Falsework Dismantling	8	21-Oct-17	31-Oct-17	140
SPL2A.2210	Zone A2: L1-L2 Columns (13no)	6	31-Aug-17	07-Sep-17	-15
SPL2A.2220	Zone A2: L2 Slab	25	07-Sep-17	10-Oct-17	-10
Zone A3					
SPL2A.2310	Zone A3: L1-L2 Columns (18no)	8	07-Sep-17	16-Sep-17	-15
SPL2A.2320	Zone A3: L2 Slab	28	08-Sep-17	14-Oct-17	-10
SPL2A.2330	Zone A3: Strike & Falsework Dismantling	8	26-Oct-17	04-Nov-17	57
Zone A4					
SPL2A.2410	Zone A4: L1-L2 Columns (11no)	6	13-Sep-17	21-Sep-17	-15
SPL2A.2420	Zone A4: L2 Slab	28	21-Sep-17	25-Oct-17	-3
SPL2A.2430	Zone A4: Strike & Falsework Dismantling	8	08-Nov-17	16-Nov-17	109
Zone A5					
SPL2A.2510	Zone A5: L1-L2 Columns (21no)	9	21-Sep-17	30-Sep-17	-15
SPL2A.2520	Zone A5: L2 Slab	26	27-Sep-17	30-Oct-17	-15
SPL2A.2530	Zone A5: Strike & Falsework Dismantling	8	10-Nov-17	18-Nov-17	86
Zone A6					
SPL2A.2610	Zone A6: L1-L2 Columns (21no)	9	18-Sep-17	28-Sep-17	-15
SPL2A.2620	Zone A6: L2 Slab	29	29-Sep-17	04-Nov-17	-4
SPL2A.2630	Zone A6: Strike & Falsework Dismantling	8	16-Nov-17	24-Nov-17	101
Zone A7, Lobby Ramp					
SPL2A.2710	Zone A7: L1-L2 Columns (4no)	4	26-Oct-17	31-Oct-17	-36
SPL2A.2730	Zone A7: L2 Slab	20	01-Nov-17	23-Nov-17	-36
SPL2A.2720	Zone A7: Lobby Ramp	23	27-Oct-17	23-Nov-17	55
Zone A8, Lobby Ramp					
SPL2A.2810	Zone A8: L1-L2 Columns (7no)	5	01-Nov-17	06-Nov-17	-36
SPL2A.2830	Zone A8: L2 Slab	21	07-Nov-17	30-Nov-17	-26
SPL2A.2820	Zone A8: Lobby Ramp	24	01-Nov-17	28-Nov-17	51
Zone A9					
SPL2A.2910	Zone A9: L1-L2 Columns (7no)	5	07-Nov-17	11-Nov-17	-36
SPL2A.2920	Zone A9: L2 Slab	23	10-Nov-17	06-Dec-17	-17
Zone A10					
SPL2A.2940	Zone A10: L1-L2 Columns (10no)	6	13-Nov-17	18-Nov-17	-36
SPL2A.2950	Zone A10: L2 Slab	23	18-Nov-17	14-Dec-17	-24
Zone A11 (Ramp)					
SPL2A.2970	Zone A11: L1-L2 Columns (22no)	9	20-Nov-17	29-Nov-17	-36
SPL2A.2980	Zone A11a & A11b: L2 Slab (interface with slope zone 2A-2)	26	25-Nov-17	27-Dec-17	-36
SPL2A.2975	Zone A11: Ramp	31	25-Nov-17	03-Jan-18	4
Zone A12					
SPL2A.3000	Zone A12: L1-L2 Columns (5no)	4	30-Nov-17	04-Dec-17	-30
SPL2A.3010	Zone A12: L2 Slab	24	04-Dec-17	03-Jan-18	-30
Zone A13					
SPL2A.3030	Zone A13: L1-L2 Columns (9no)	5	05-Dec-17	09-Dec-17	-26
Zone A14 (North Plant Below)					
SPL2A.3180	Zone A14: L1-L2 Columns (8no)	5	25-Nov-17	30-Nov-17	-34
Zone A - Spiral Ramp					
SPL2A.3240	Zone A: Spiral Ramp - L2	28	18-Nov-17	20-Dec-17	-23
Zone B					
Zone B4					
SPL2B.3320	Zone B4-1-1: L1-L2 Columns	6	31-Jul-17	07-Aug-17	45
SPL2B.3340	Zone B4-1-1: L2 Slab	22	01-Aug-17	30-Aug-17	52
Zone B5					
SPL2B.2510	Zone B5: L1-L2 Columns (12no)	116	31-Jul-17	23-Dec-17	-27
SPL2B.2520	Zone B5: L2 Slab	138	04-Aug-17	25-Jan-18	-4
SPL2B.3480	Zone B5-1-1: L1-L2 Columns	4	31-Jul-17	04-Aug-17	83
SPL2B.3500	Zone B5-1-1: L2 Slab	16	04-Aug-17	25-Aug-17	104
Zone B6					
SPL2B.2610	Zone B6: L1-L2 Columns (15no)	114	09-Aug-17	30-Dec-17	-27
SPL2B.3370	Zone B6-2: L1-L2 Columns	5	09-Aug-17	14-Aug-17	45
SPL2B.3380	Zone B6-2: L2 Slab	20	12-Aug-17	07-Sep-17	82
SPL2B.3390	Zone B6: L2 Slab	137	12-Aug-17	31-Jan-18	-27
Zone B7					



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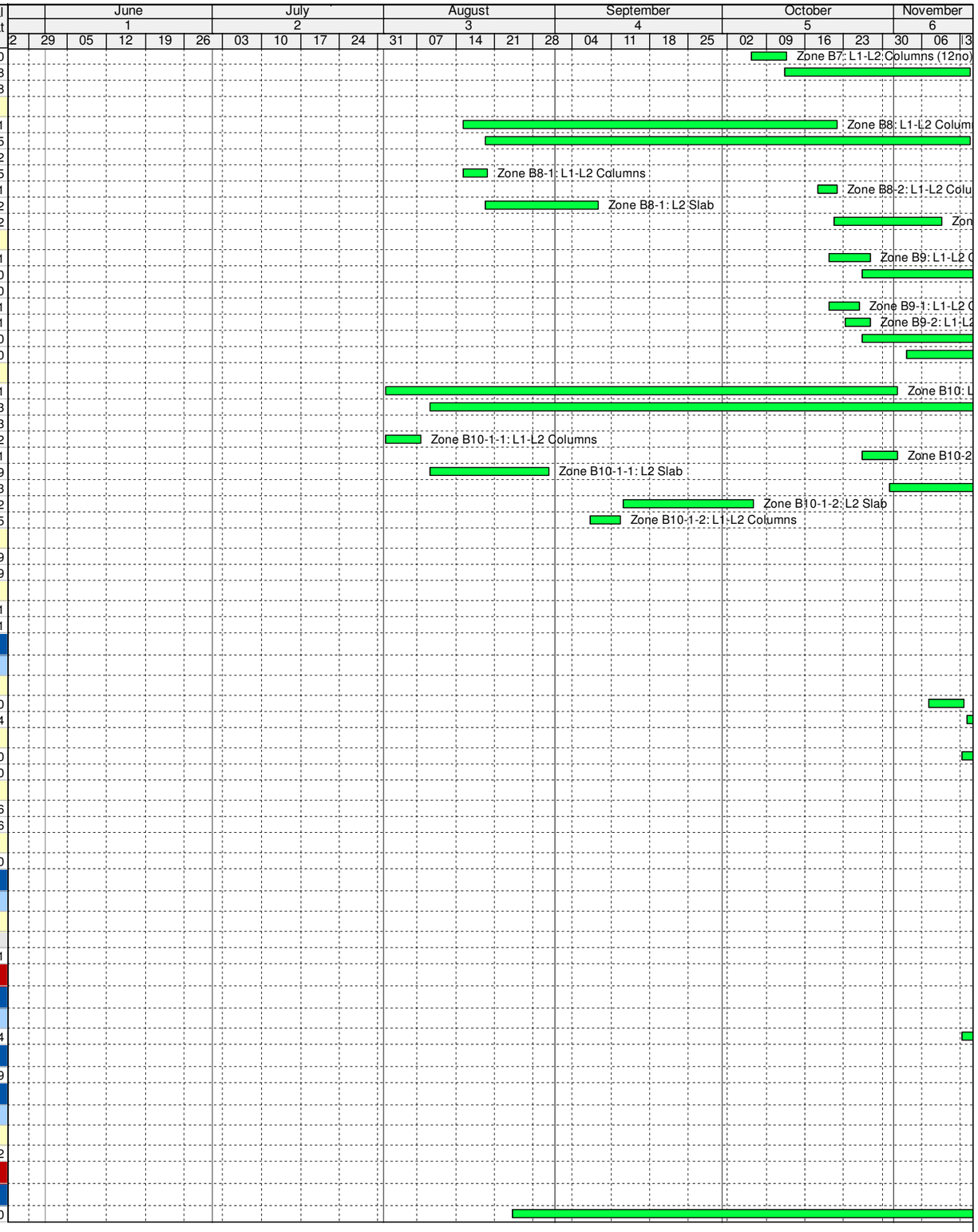
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
SPL2B.2710	Zone B7: L1-L2 Columns (12no)	6	06-Oct-17	12-Oct-17	10
SPL2B.2720	Zone B7: L2 Slab	28	12-Oct-17	14-Nov-17	18
SPL2B.2730	Zone B7: Strike & Falsework Dismantling	8	25-Nov-17	04-Dec-17	18
Zone B8					
SPL2B.2810	Zone B8: L1-L2 Columns (12no)	52	15-Aug-17	21-Oct-17	-1
SPL2B.2820	Zone B8: L2 Slab	68	19-Aug-17	14-Nov-17	65
SPL2B.2830	Zone B8: Strike & Falsework Dismantling	8	21-Nov-17	29-Nov-17	22
SPL2B.3420	Zone B8-1: L1-L2 Columns	4	15-Aug-17	19-Aug-17	45
SPL2B.3430	Zone B8-2: L1-L2 Columns	4	18-Oct-17	21-Oct-17	-1
SPL2B.3440	Zone B8-1: L2 Slab	16	19-Aug-17	08-Sep-17	62
SPL2B.3450	Zone B8-2: L2 Slab	16	21-Oct-17	09-Nov-17	22
Zone B9					
SPL2B.2910	Zone B9: L1-L2 Columns (15no)	7	20-Oct-17	27-Oct-17	-1
SPL2B.2920	Zone B9: L2 Slab	24	26-Oct-17	23-Nov-17	10
SPL2B.2930	Zone B9: Strike & Falsework Dismantling	8	05-Dec-17	13-Dec-17	10
SPL2B.3240	Zone B9-1: L1-L2 Columns	5	20-Oct-17	25-Oct-17	-1
SPL2B.3250	Zone B9-2: L1-L2 Columns	5	23-Oct-17	27-Oct-17	-1
SPL2B.3260	Zone B9-1: L2 Slab	18	26-Oct-17	16-Nov-17	10
SPL2B.3270	Zone B9-2: L2 Slab	18	03-Nov-17	23-Nov-17	10
Zone B10					
SPL2B.3010	Zone B10: L1-L2 Columns (15no)	70	01-Aug-17	01-Nov-17	-1
SPL2B.3020	Zone B10: L2 Slab	80	09-Aug-17	18-Nov-17	13
SPL2B.3030	Zone B10: Strike & Falsework Dismantling	9	30-Nov-17	09-Dec-17	13
SPL2B.3280	Zone B10-1-1: L1-L2 Columns	5	01-Aug-17	07-Aug-17	62
SPL2B.3290	Zone B10-2: L1-L2 Columns	5	26-Oct-17	01-Nov-17	-1
SPL2B.3300	Zone B10-1-1: L2 Slab	17	09-Aug-17	30-Aug-17	69
SPL2B.3310	Zone B10-2: L2 Slab	17	31-Oct-17	18-Nov-17	13
SPL2B.3460	Zone B10-1-2: L2 Slab	17	13-Sep-17	06-Oct-17	42
SPL2B.3470	Zone B10-1-2: L1-L2 Columns	5	07-Sep-17	12-Sep-17	35
Zone B1					
SPL2B.2110	Zone B1: L1-L2 Columns (14no)	7	18-Nov-17	25-Nov-17	-19
SPL2B.2120	Zone B1: L2 Slab	21	24-Nov-17	18-Dec-17	-19
Zone B2					
SPL2B.3210	Zone B2: L1-L2 Columns (16no)	7	20-Nov-17	27-Nov-17	-21
SPL2B.3220	Zone B2: L2 Slab	20	25-Nov-17	18-Dec-17	-21
Level 3					
Zone A					
Zone A1					
SPL3A.3110	Zone A1: L2-L3 Columns (11no)	6	07-Nov-17	13-Nov-17	-30
SPL3A.3120	Zone A1: L3 Slab	28	14-Nov-17	15-Dec-17	-24
Zone A2					
SPL3A.3210	Zone A2: L2-L3 Columns (18no)	8	13-Nov-17	21-Nov-17	-30
SPL3A.3220	Zone A2: L3 Slab	29	18-Nov-17	21-Dec-17	-30
Zone A3					
SPL3A.3310	Zone A3: L2-L3 Columns (10no)	5	27-Nov-17	01-Dec-17	-36
SPL3A.3320	Zone A3: L3 Slab	25	02-Dec-17	03-Jan-18	-36
Zone A4					
SPL3A.3410	Zone A4: L2-L3 Columns (12no)	7	02-Dec-17	09-Dec-17	-30
Roof Level					
Slab					
Roof B					
Zone R-B7					
SP.RLB.5710	Zone R-B7: L3-RL Inclined Columns S17	13	18-Nov-17	02-Dec-17	31
SECONDARY RC STRUCTURE (M & E Zone)					
Basement Level					
Secondary structures					
SP.BLS.1740	Secondary BL structures	75	13-Nov-17	10-Feb-18	-14
Level 1					
SS.L1S.1310	Zone-4: L1 Secondary structures	20	18-Nov-17	11-Dec-17	109
Level 2					
Zone B					
Zone B3					
SS.L2B.2310	Zone-B3: L2 Secondary Slab (Wave Pool)	23	20-Nov-17	15-Dec-17	32
ABWF WORKS					
Binnacles					
BIN.GDP.1000	Binnicles Shop drawing Submision	90	24-Aug-17	09-Dec-17	220



critical level of effort
Current
Milestone
Milestone
% Complete
Critical Remaining Work

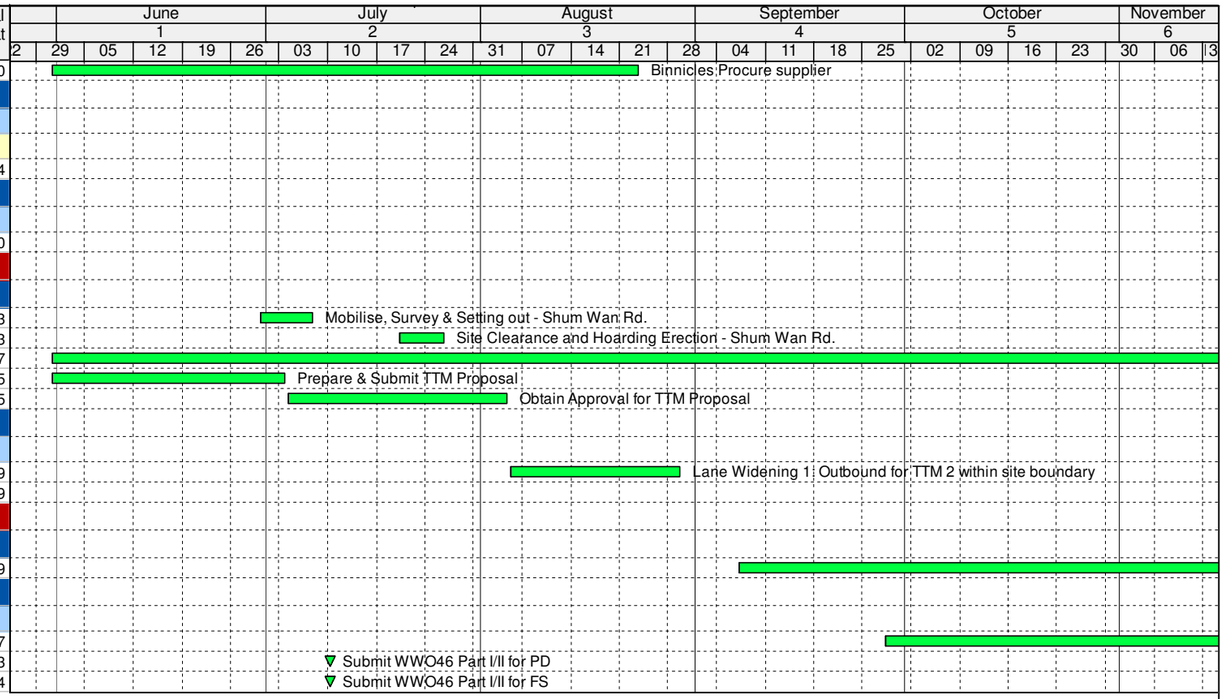
Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003
Page: 17 of 18

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

ID	Activity	Duration	Start	Finish	Total Float
BIN.GDP.1030	Binnicles Procure supplier	72	31-May-17	23-Aug-17	220
Blockwork					
Level 1					
Zone A					
AB.BWL1.1120	L1 Zone-A2: Install Blockwork	10	17-Nov-17	28-Nov-17	134
Lift Works					
Lift No.3					
AB.LW3.3105	Complete Lift 3 - Core Shell	0		29-Nov-17	190
SHUM WAN ROAD (Area A4)					
General Requirements					
PR.SWGE.1050	Mobilise, Survey & Setting out - Shum Wan Rd.	6	30-Jun-17	07-Jul-17	163
PR.SWGE.1025	Site Clearance and Hoarding Erection - Shum Wan Rd.	6	20-Jul-17	26-Jul-17	153
EW.GENR.0110	Application of Excavation Permit	180	31-May-17	26-Nov-17	87
EW.GENR.0120	Prepare & Submit TTM Proposal	28	31-May-17	03-Jul-17	145
EW.GENR.0130	Obtain Approval for TTM Proposal	28	04-Jul-17	04-Aug-17	145
Temporary Traffic Management					
TTM Preparation Works					
EW.TTMS.2110	Lane Widening 1: Outbound for TTM 2 within site boundary	18	05-Aug-17	29-Aug-17	139
EW.TTMS.2120	Lane Widening 2: Outbound for TTM 3 outside site boundary	18	27-Nov-17	16-Dec-17	69
E&M WORKS					
New Water Park					
EM.IN020002	Cast-in installation works	180	07-Sep-17	19-Apr-18	109
Statutory Submission, Inspection & Approval					
Obtain Occupation Permit					
EM.SS010020	EPD submission and approval for Emergency generator and Town Gas Exhaust	48	28-Sep-17	25-Nov-17	197
EM.SS010000	Submit WWO46 Part I/II for PD	0		10-Jul-17	203
EM.SS010005	Submit WWO46 Part I/II for FS	0		10-Jul-17	224



critical level of effort
Critical Remaining Work
Current
Milestone
Milestone
% Complete

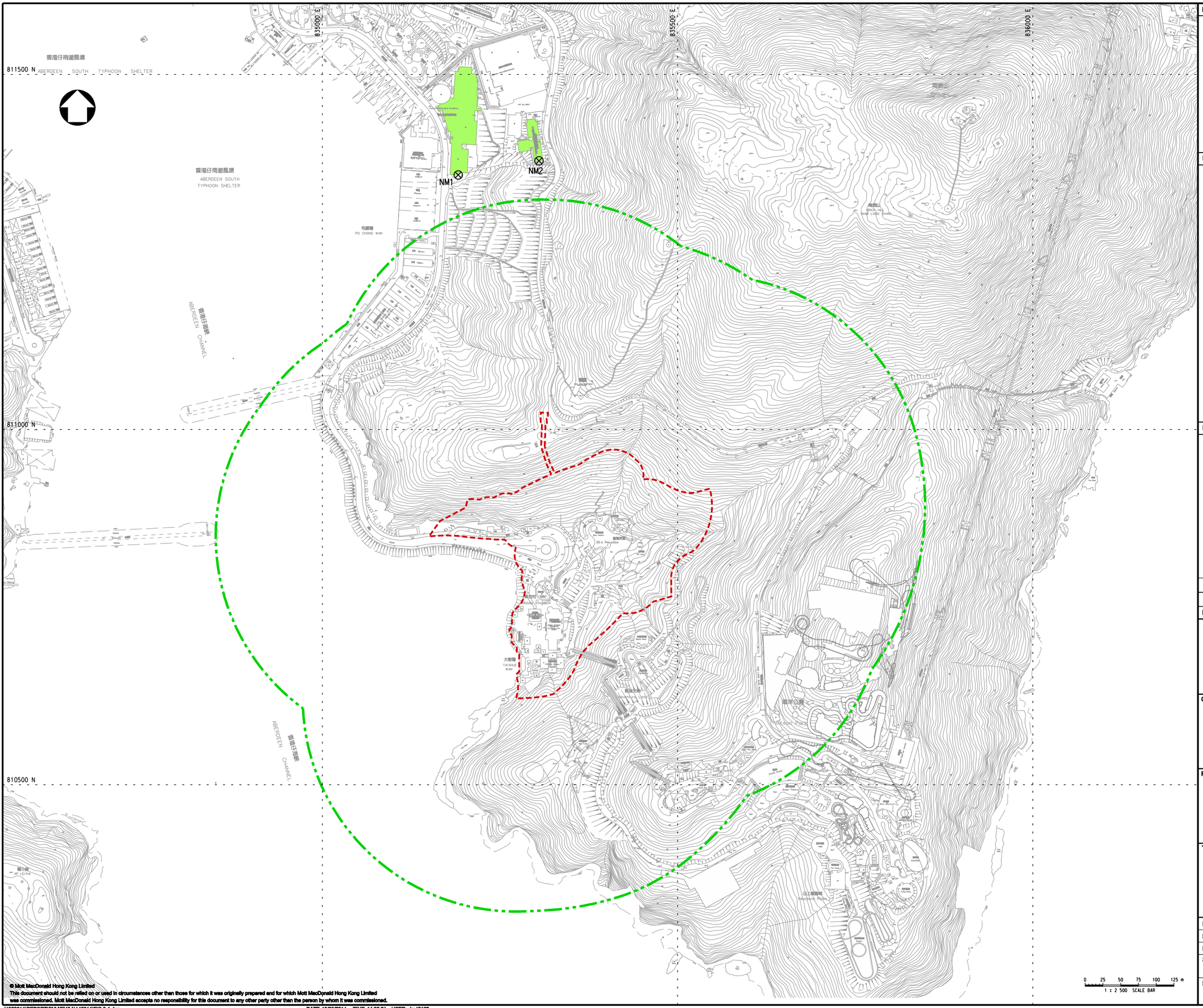
Project: Ocean Park Tai Shue Wan Water World Project
Project ID: T16004-64
Layout: 3 Month look ahead
IMPACTEDrevised rides 20171003

OCEAN PARK - TAI SHUE WAN DEVELOPMENT
Contract No. TSW-C006
3 month Rolling Construction program _SEP 2017

Gammon

Date	Revision	Checked	Approved
03-Oct-17	Rev 0	PL LN ME	

D. Designated Monitoring Locations as Recommended in the Approved EM&A Manual



Notes

Key to symbols

- 300m ASSESSMENT AREA
- PROJECT BOUNDARY
- ⊗ CONSTRUCTION NOISE MONITORING STATION

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	MAR 14	MING	GENERAL REVISION	AM	AFK
P1	FEB 14	MING	FIRST ISSUE	AM	AFK

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

Ocean Park Hong Kong 香港海洋公園

Project

TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

Title

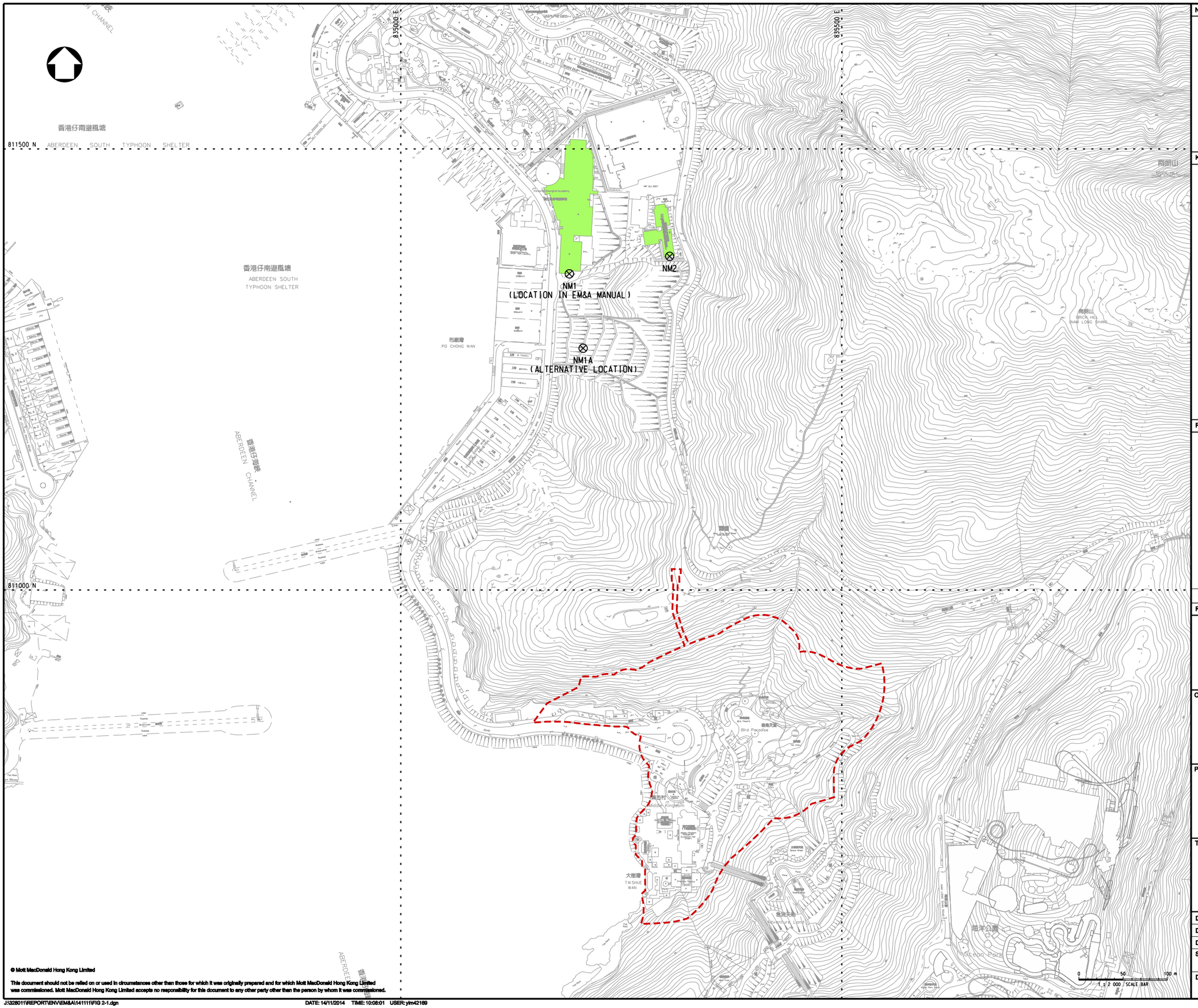
DESIGNATED MONITORING LOCATONS AS RECOMMENDED IN THE APPROVED EM&A MANUAL

Designed	AM		Eng check	FW	
Drawn	MING		Coordination	FW	
Dwg check	AM		Approved	AFK	
Scale at A1	1:2500	Status	PRE	Rev	P2

Drawing Number

FIGURE 3.1

E. Actual Locations of Impact Monitoring



Notes

Key to symbols

PROJECT BOUNDARY

CONSTRUCTION NOISE MONITORING STATION

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	NOV 14	MING	FIRST ISSUE	BW	AFK

Mott MacDonald

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
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T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

Ocean Park Hong Kong 香港海洋公園

Project

TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

Title

ACTUAL LOCATIONS OF IMPACT MONITORING

Designed	BW		Eng check	FW	
Drawn	MING		Coordination	FW	
Dwg check	BW		Approved	AFK	
Scale at A1	1:2000	Status	PRE	Rev	P1

Drawing Number

FIGURE 2.1

F. Calibration Certificates

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

Certificate of Calibration
校正證書

Certificate No. : C171427
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-0555) Date of Receipt / 收件日期 : 9 March 2017

Description / 儀器名稱	:	Sound Level Meter
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-52
Serial No. / 編號	:	00643040
Supplied By / 委託者	:	Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun, New Territories, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 16 March 2017

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 20 March 2017

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

Certificate of Calibration
校正證書

Certificate No. : C171427
證書編號

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

2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C170048
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.9	± 1.1

6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.1
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

Certificate of Calibration
校正證書

Certificate No. : C171427
證書編號

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	95.2	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.6	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.0	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.6	-6.2 (+3.0 ; -6.0)

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

Certificate of Calibration
校正證書

Certificate No. : C171427
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 10445

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C165412
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-2211) Date of Receipt / 收件日期 : 26 September 2016

Description / 儀器名稱	:	Precision Acoustic Calibrator
Manufacturer / 製造商	:	LARSON DAVIS
Model No. / 型號	:	CAL200
Serial No. / 編號	:	11334
Supplied By / 委託者	:	Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun, New Territories, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 29 September 2016

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 30 September 2016

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

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

Certificate of Calibration
校正證書

Certificate No. : C165412
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C163709
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000	1 kHz ± 1 %	± 1

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C165934
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-2438) Date of Receipt / 收件日期 : 26 October 2016

Description / 儀器名稱	:	Anemometer
Manufacturer / 製造商	:	Lutron
Model No. / 型號	:	AM-4201
Serial No. / 編號	:	AF.27513
Supplied By / 委託者	:	Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun, New Territories, Hong Kong

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 27 October 2016

TEST RESULTS / 測試結果

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

The test equipment used for calibration are traceable to National Standards via :
- Testo Industrial Services GmbH, Germany

Tested By / 測試 : T L Shek
Assistant Engineer

Certified By / 核證 : H C Chan
Engineer

Date of Issue / 簽發日期 : 28 October 2016

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

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

Certificate of Calibration
校正證書

Certificate No. : C165934
證書編號

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

2. The results presented are the mean of 10 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL386	Multi-function Measuring Instrument	S12109

4. Test procedure : MA130N.

5. Results :

Air Velocity

Applied Value (m/s)	UUT Reading (m/s)	Measured Correction		
		Value (m/s)	Measurement Uncertainty	
			Expanded Uncertainty (m/s)	Coverage Factor
2.0	1.8	+0.2	0.2	2.0
4.0	3.8	+0.2	0.2	2.0
6.0	5.8	+0.2	0.3	2.0
8.1	8.0	+0.1	0.3	2.0
10.0	10.0	0.0	0.4	2.0

Remarks : - The Measured Corrections are defined as :
Value = Applied Value - UUT Reading

- The expanded uncertainties are for a level of confidence of 95 %.

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

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

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輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

G. Event and Action Plan

Event and Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER 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 ER accordingly; 3. Advise the ER 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 ER; 2. Implement noise mitigation proposals.
Limit Level	1. Inform IEC, ER, 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 ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER 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 ER 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 ER until the exceedance is abated.

Event and Action Plan for Landscape and Visual Impact during Construction Phase

Action Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Non-conformity on one occasion	1. Identify source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial action until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement
Repeated Non-conformity	1. Identify source 2. Inform the IEC and the ER 3. Increase monitoring (site audit) frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring (site audit)	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures		

H. Impact Monitoring Schedule

SEPTEMBER 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 ET weekly site inspection	2
3	4	5	6 Noise Monitoring	7	8 ET weekly site inspection Landscape and Visual Monitoring	9
10	11	12	13 Noise Monitoring	14	15 ET weekly site inspection	16
17	18	19	20 Noise Monitoring	21	22 ET weekly site inspection Ecological Monitoring Landscape and Visual Monitoring	23
24	25	26	27 Noise Monitoring	28	29 ET weekly site inspection	30

August 2017

S	M	T	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

October 2017

S	M	T	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Notes:

OCTOBER 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4 Noise Monitoring	5	6 ET weekly site inspection Landscape and Visual Monitoring	7
8	9	10 Noise Monitoring	11	12	13 ET weekly site inspection	14
15	16	17	18 Noise Monitoring	19	20 ET weekly site inspection Ecological Monitoring Landscape and Visual Monitoring	21
22	23	24	25	26 Noise Monitoring	27 ET weekly site inspection	28
29	30	31				

September 2017

S	M	T	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

November 2017

S	M	T	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Notes:

I. Noise Monitoring Data

Noise Monitoring Data - Summary of Construction Noise Monitoring Results, dB(A)

NM1A - Slope near the Victoria Shanghai Academy						
Date	Time		Noise Levels, dB(A)			Limit Level for L_{eq} (dB(A)) (2)
	Start	Finish	Corrected L_{eq}(30min) (1)	Corrected L_{90} (1)	Corrected L_{10} (1)	
06-Sep-17	10:00	10:30	61.6	58.4	63.0	70
13-Sep-17	10:10	10:40	62.1	58.9	63.7	70
20-Sep-17	09:24	09:54	60.9	57.7	62.1	70
27-Sep-17	11:00	11:30	63.9	56.0	65.5	70

NM2 - Hong Kong Juvenile Care Centre						
Date	Time		Noise Levels, dB(A)			Limit Level for L_{eq} (dB(A))(2)
	Start	Finish	L_{eq}(30min)	L_{90}	L_{10}	
06-Sep-17	09:10	09:40	53.9	52.4	55.2	70
13-Sep-17	09:23	09:53	56.0	54.5	57.3	70
20-Sep-17	08:40	09:10	53.5	50.8	55.8	70
27-Sep-17	10:08	10:38	54.4	49.7	56.0	70

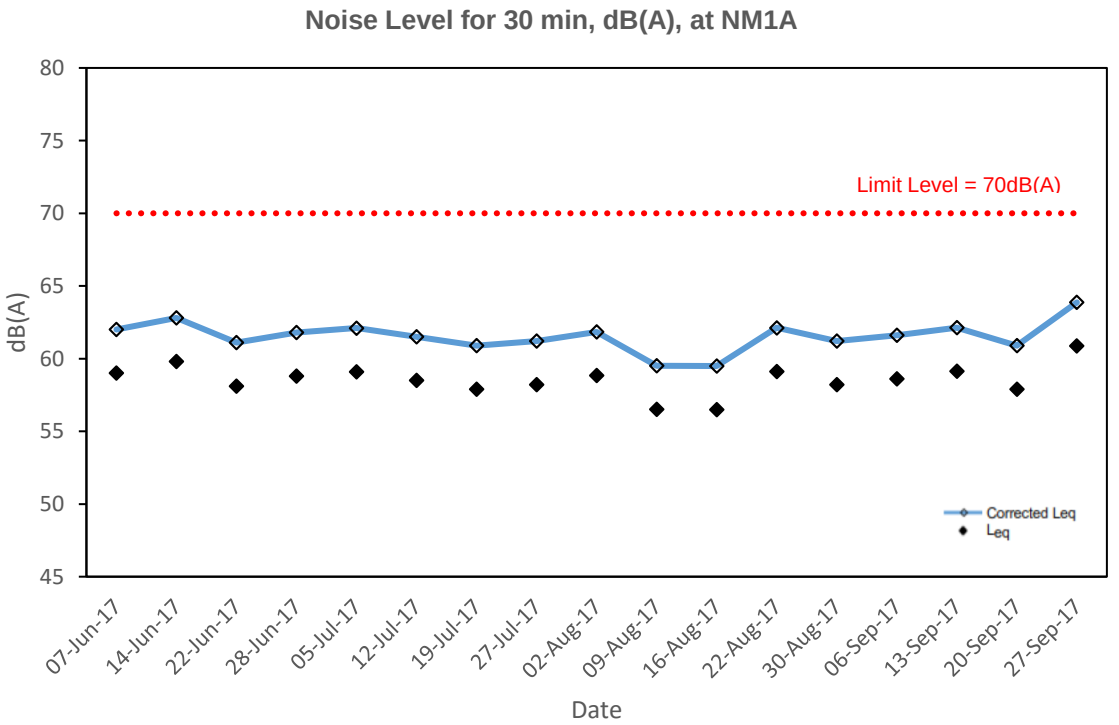
Notes:

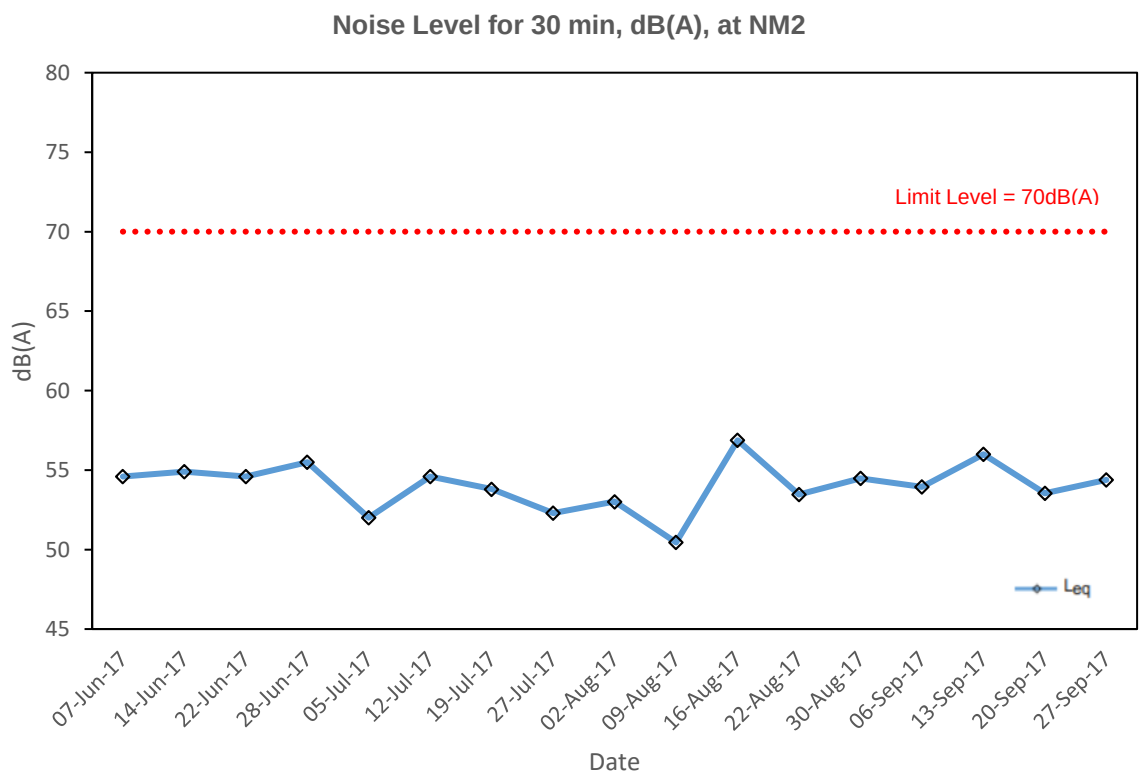
(1) A free field correction of +3dB(A) has been made to these measurements as specified in the EM&A Manual and EPD guidelines.

(2) Acceptable noise level should be reduced to 65dB(A) upon school examination period.

J. Graphical Plots for Noise Monitoring Data

Graphical Plot for Noise Monitoring Data (June - September 2017)





K. Meteorological Data

1/9/2017 **Wong Chuk Hang Station**

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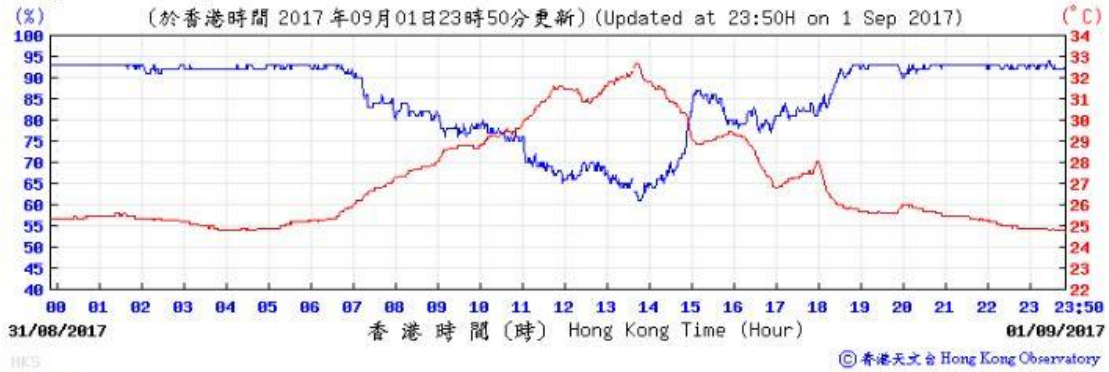
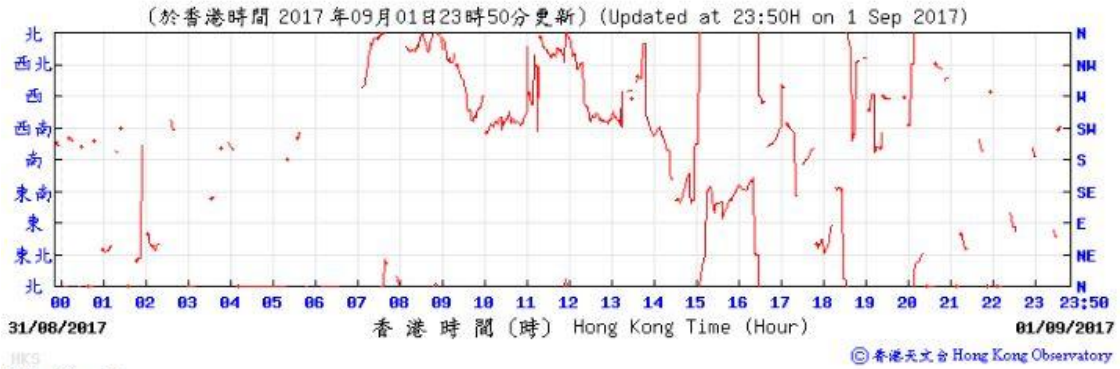


Pressure:

Wind Direction:



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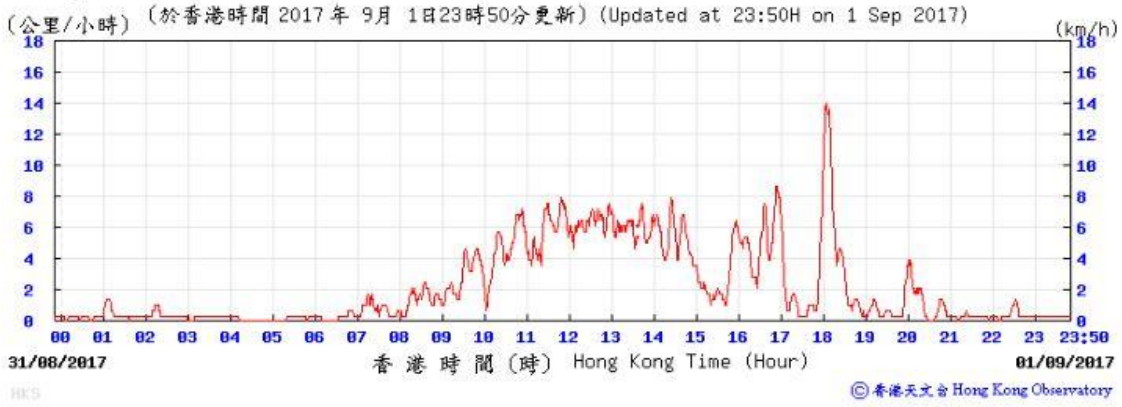

4/9/2017

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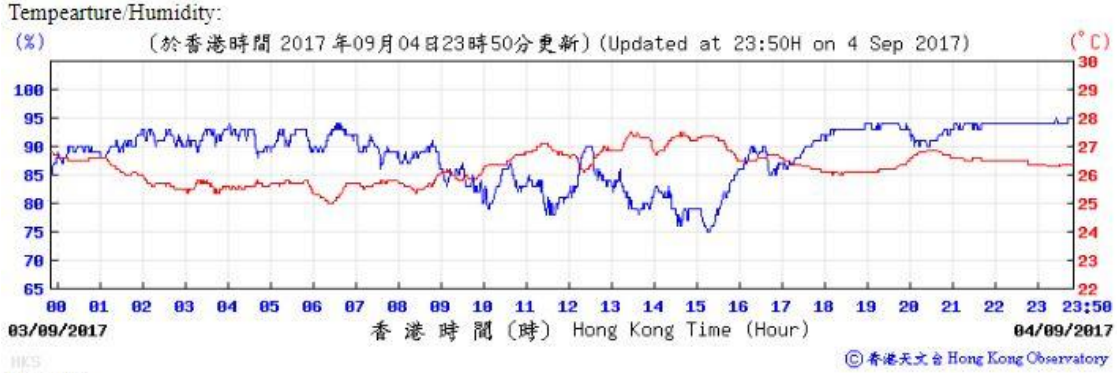
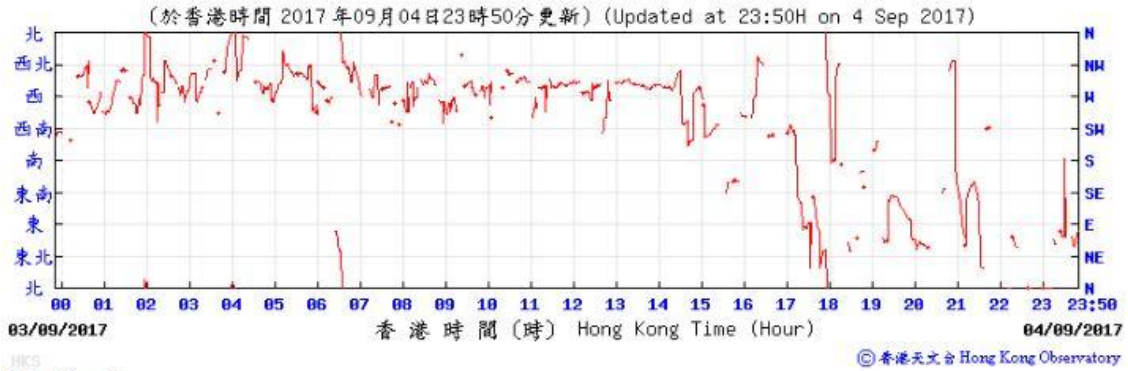


Pressure:

Wind Direction:



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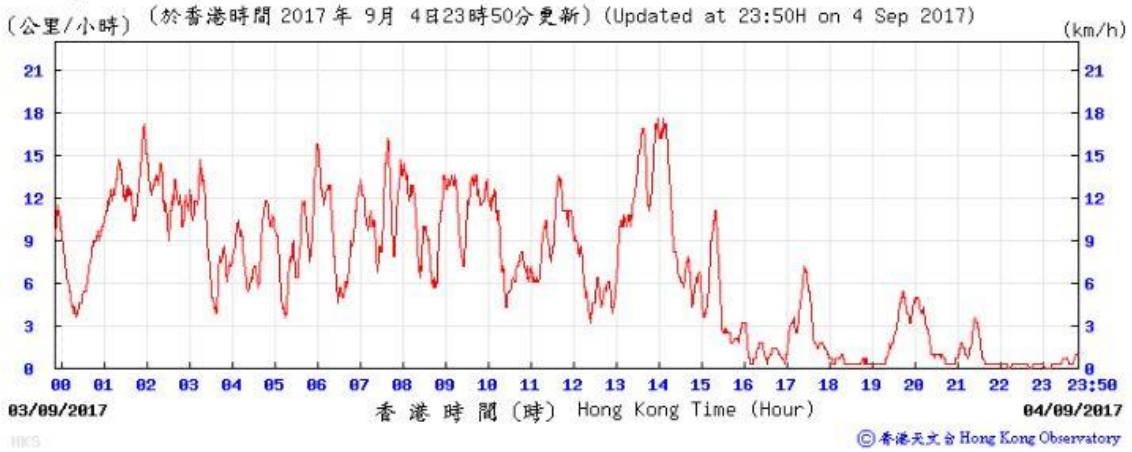

5/9/2017

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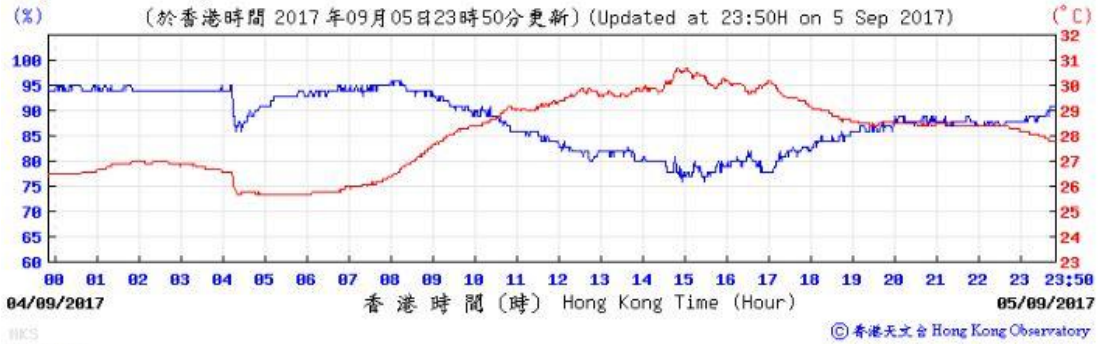
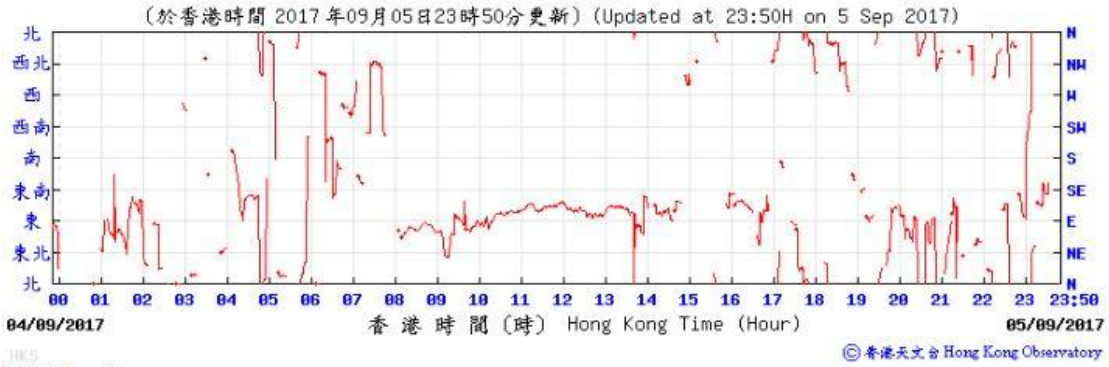
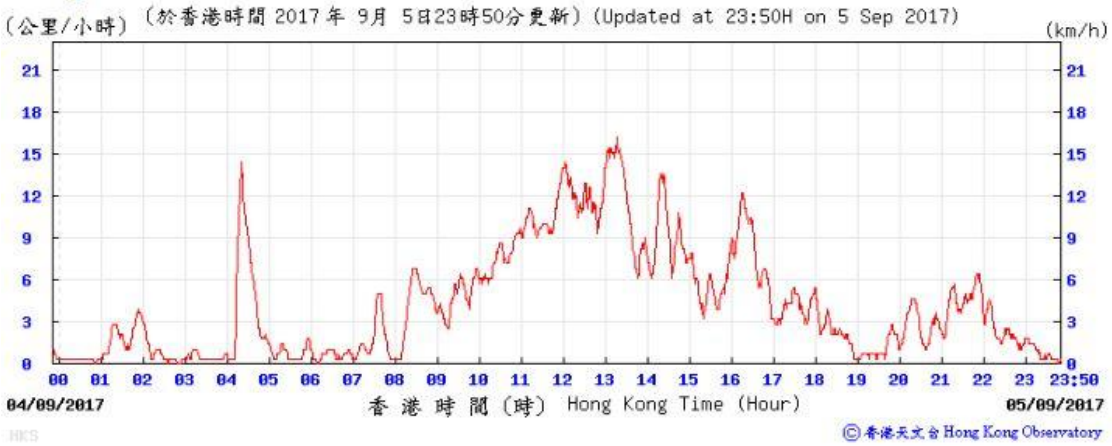


Pressure:

Wind Direction:



Wind Speed:



6/9/2017

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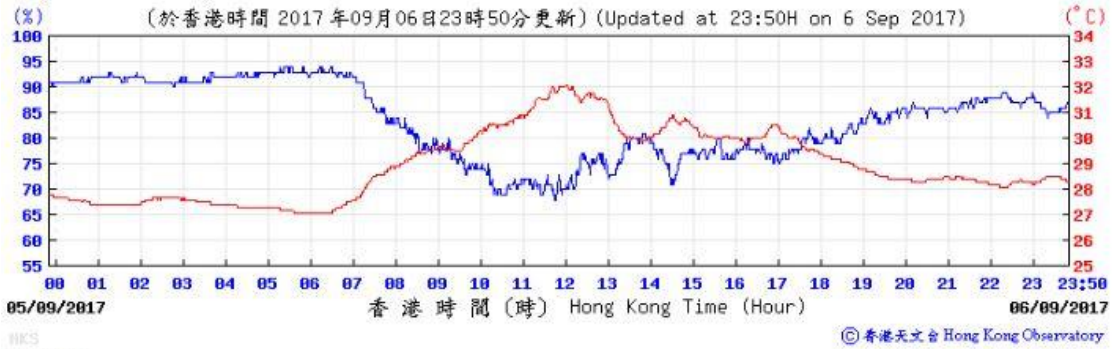
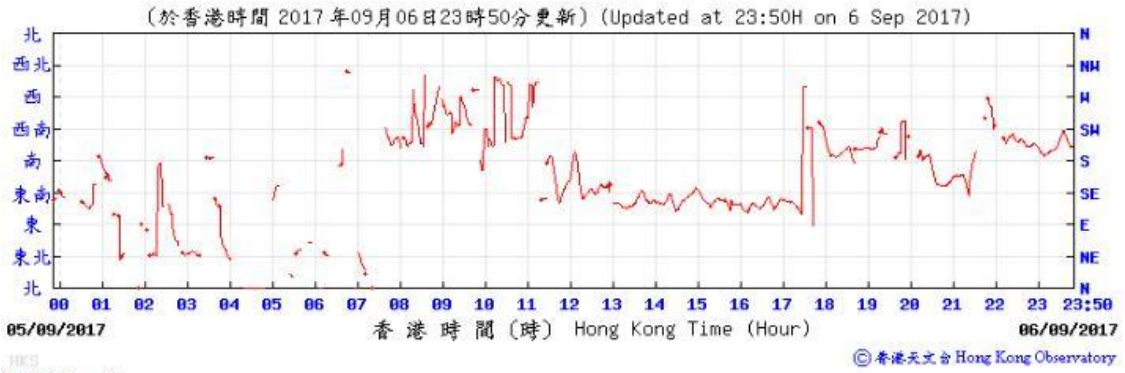


Pressure:

Wind Direction:



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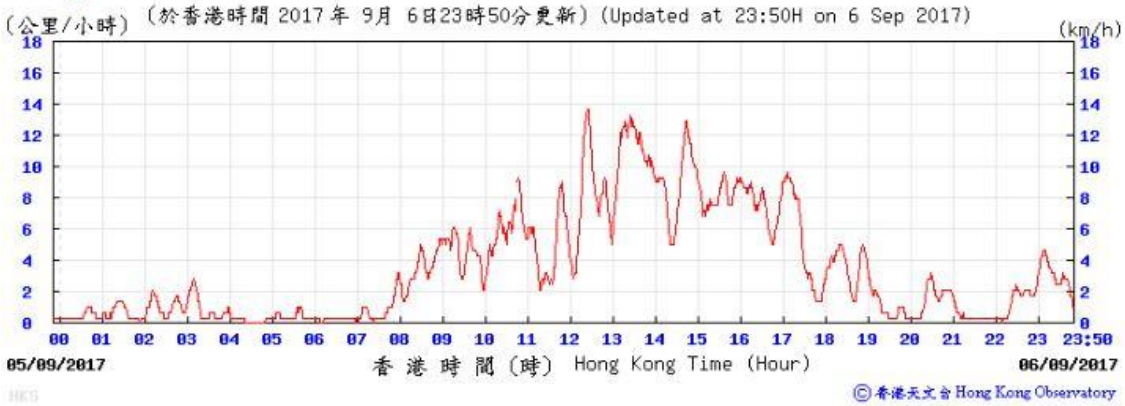

7/9/2017

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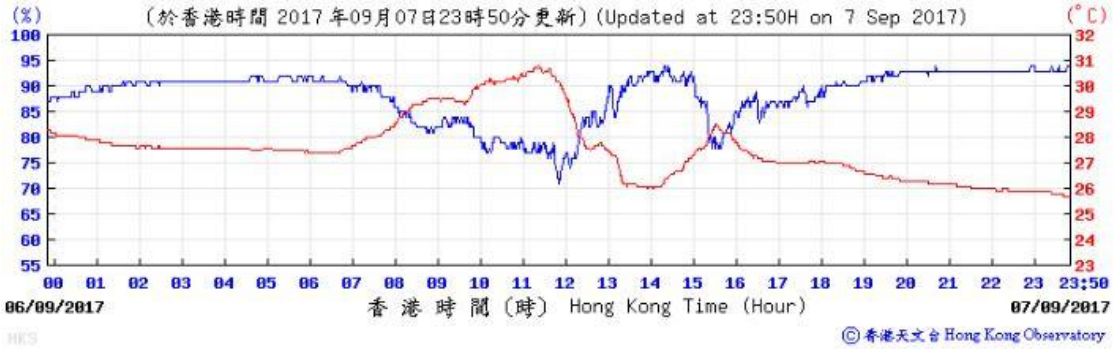
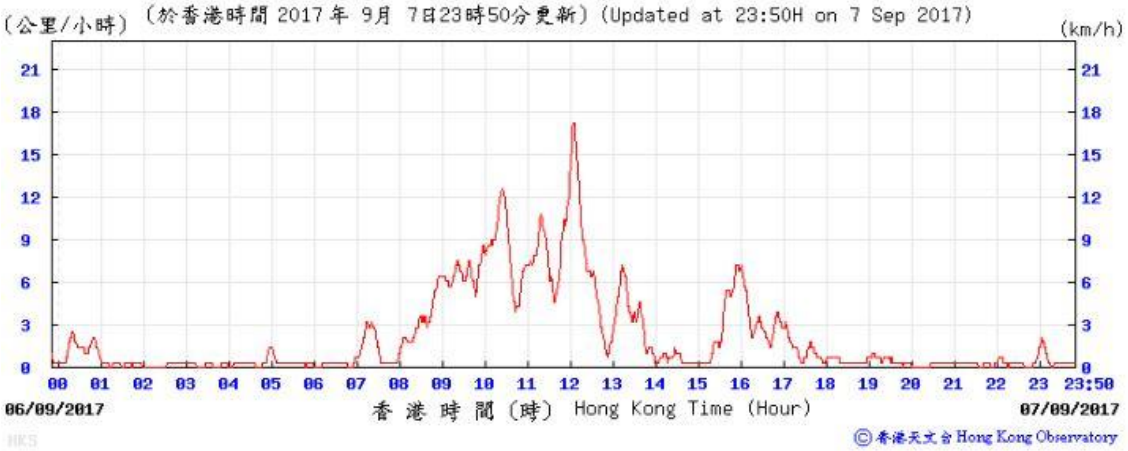


Pressure:

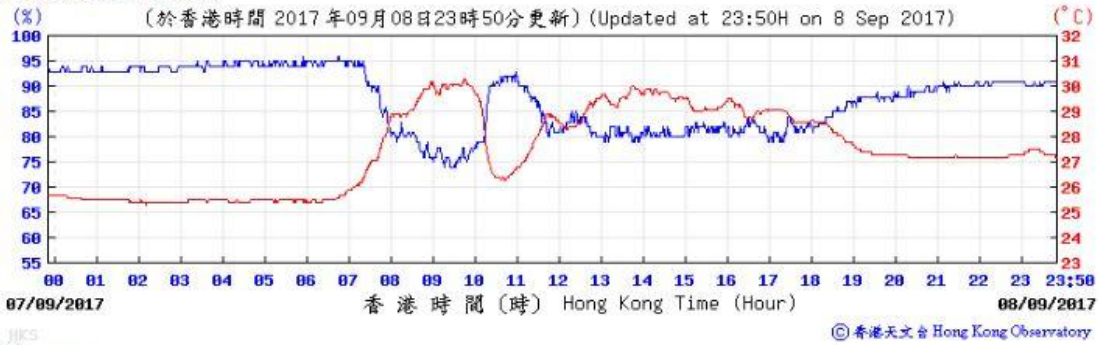
Wind Direction:

Wind Speed:



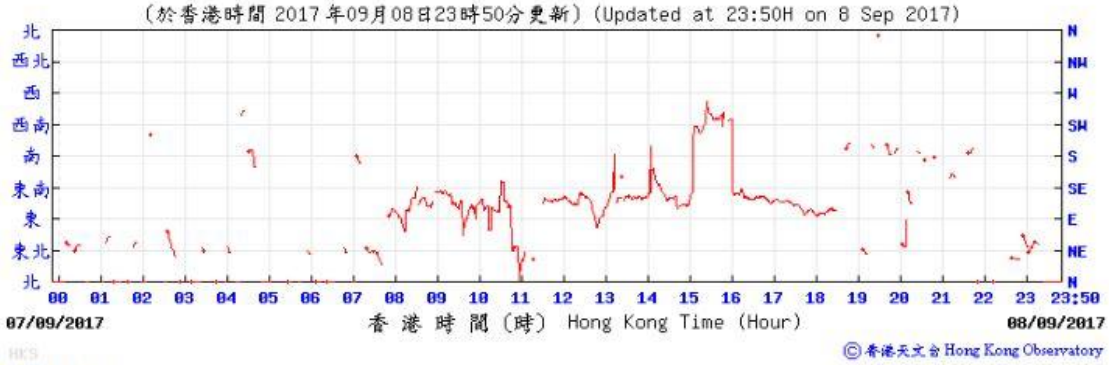
8/9/2017

Tempearture/Humidity:



Pressure:

Wind Direction:



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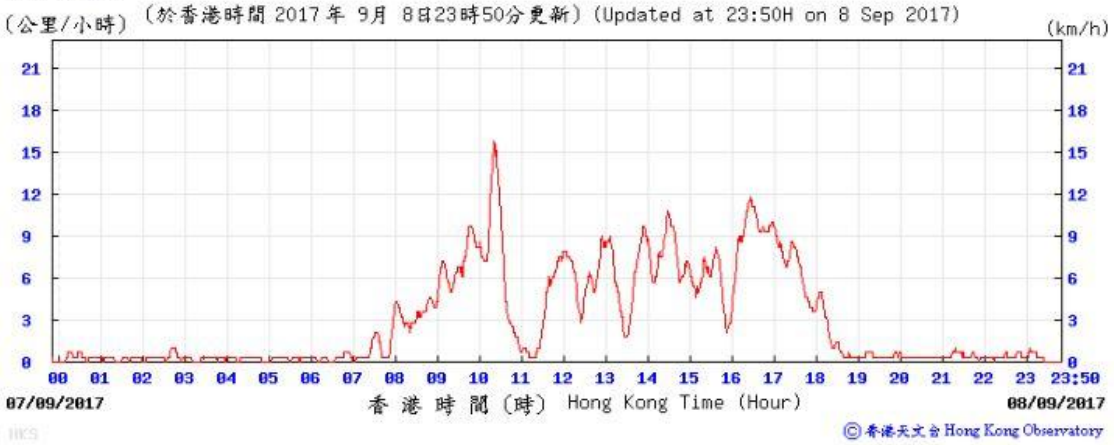

11/9/2017

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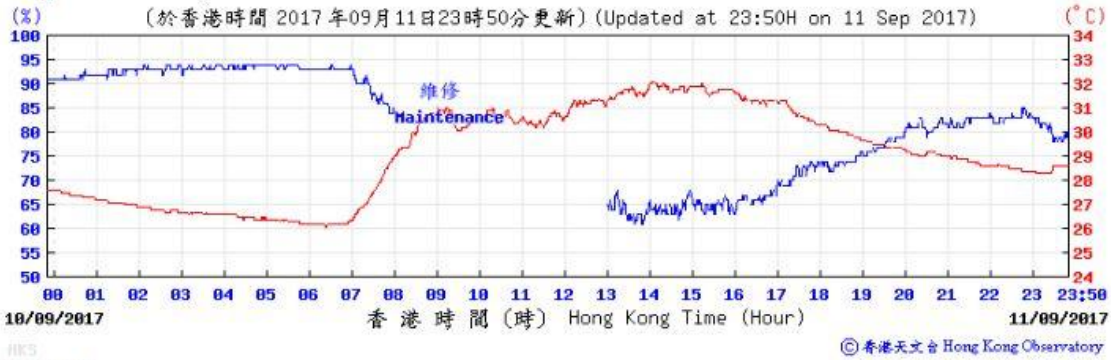
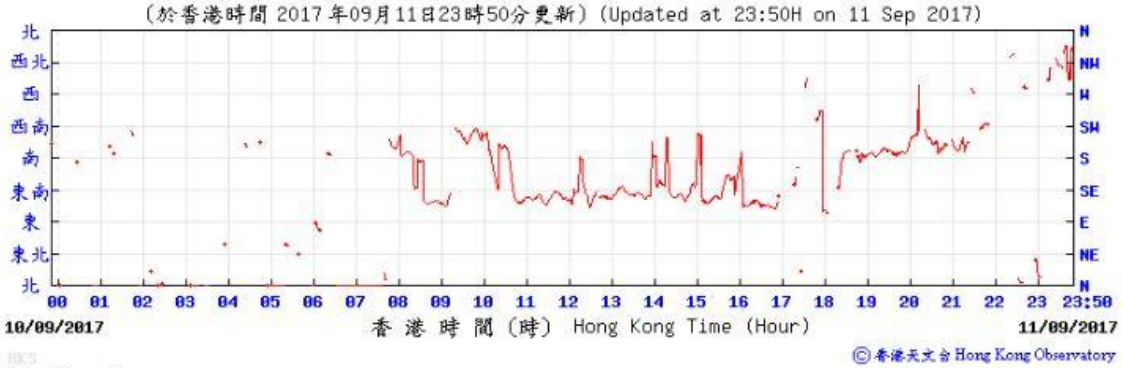


Pressure:

Wind Direction:



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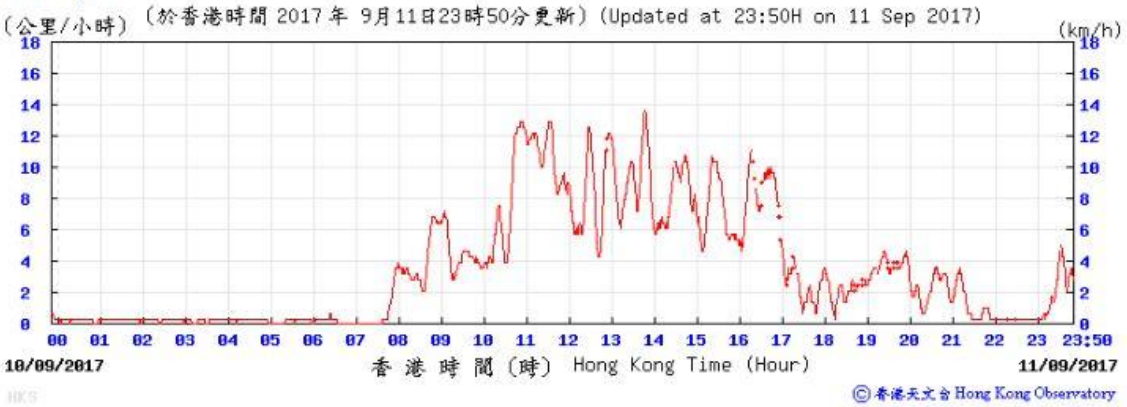

12/9/2017

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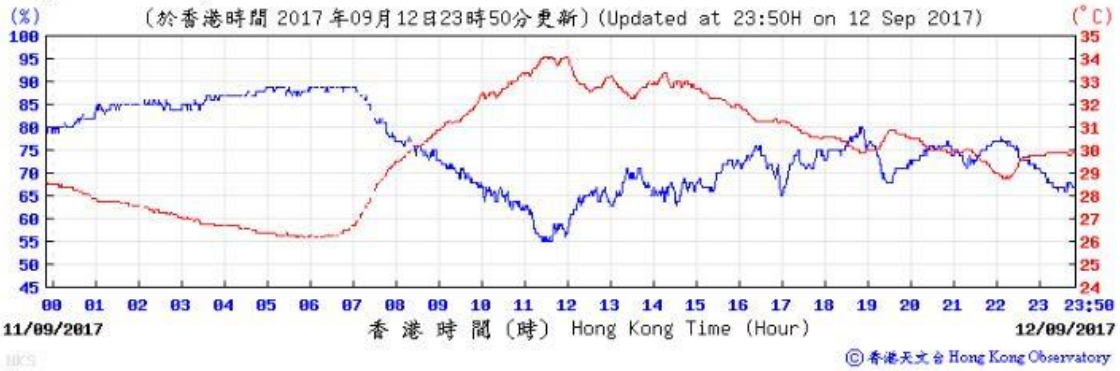
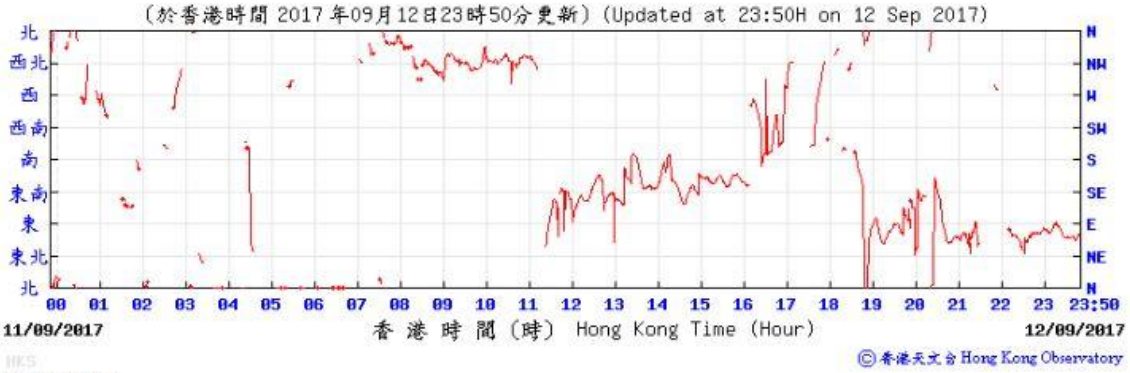


Pressure:

Wind Direction:



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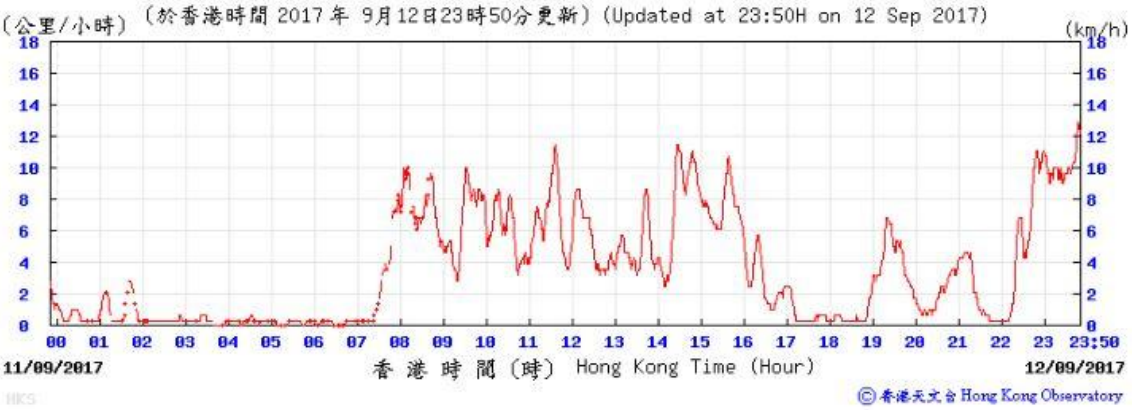

13/9/2017

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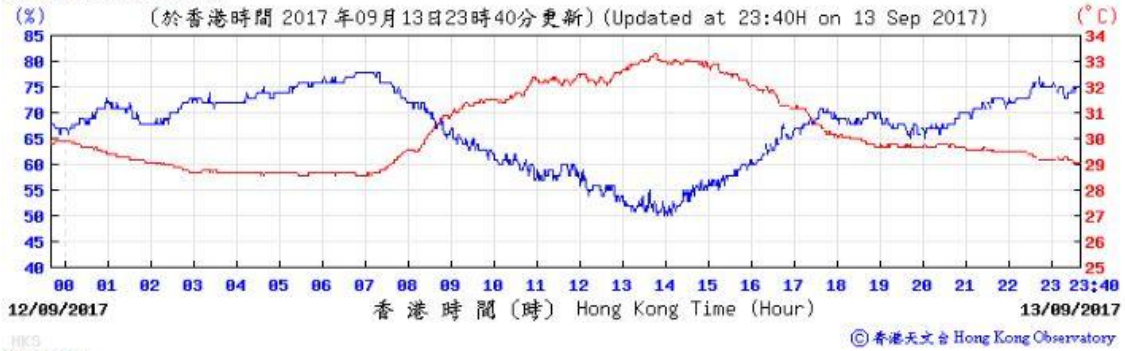
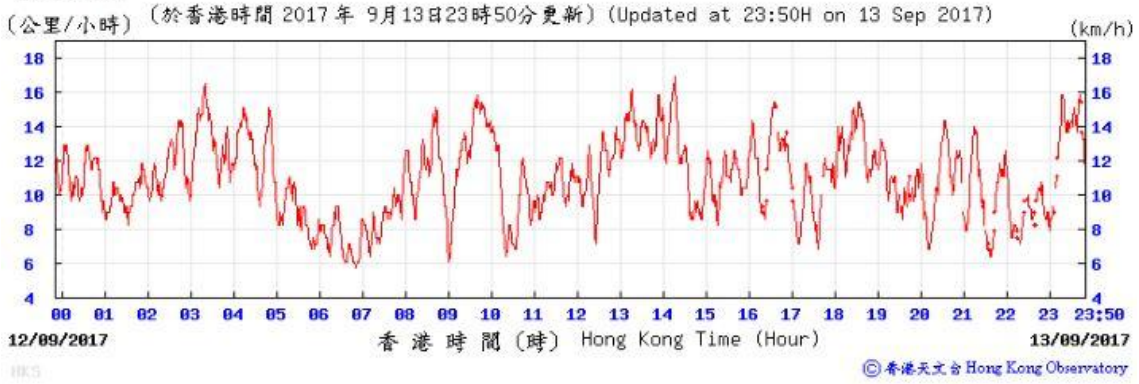


Pressure:

Wind Direction:

Wind Speed:



14/9/2017

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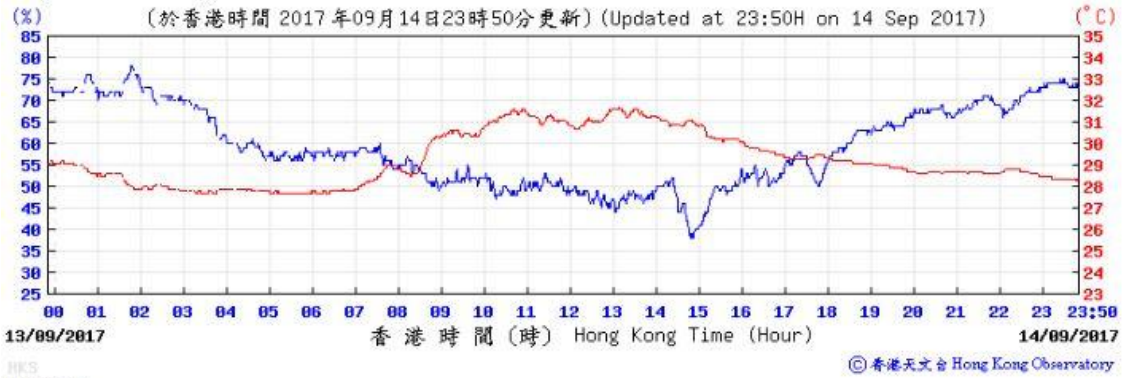

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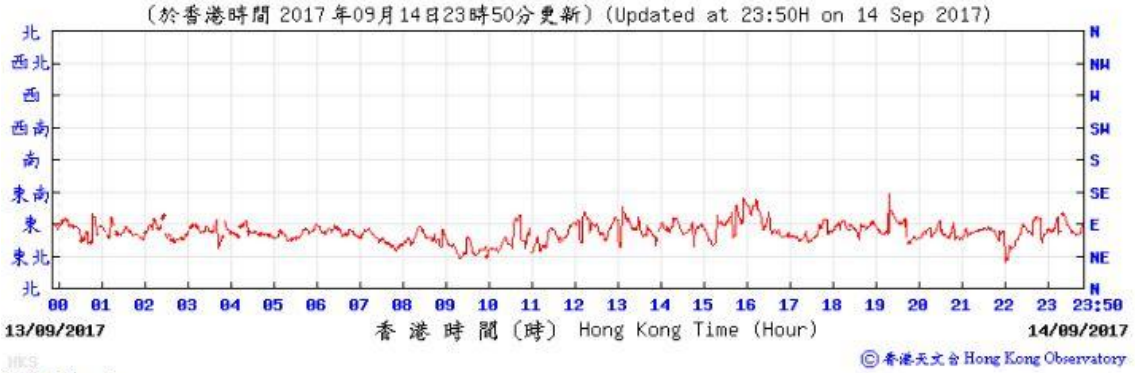
Wind Direction:



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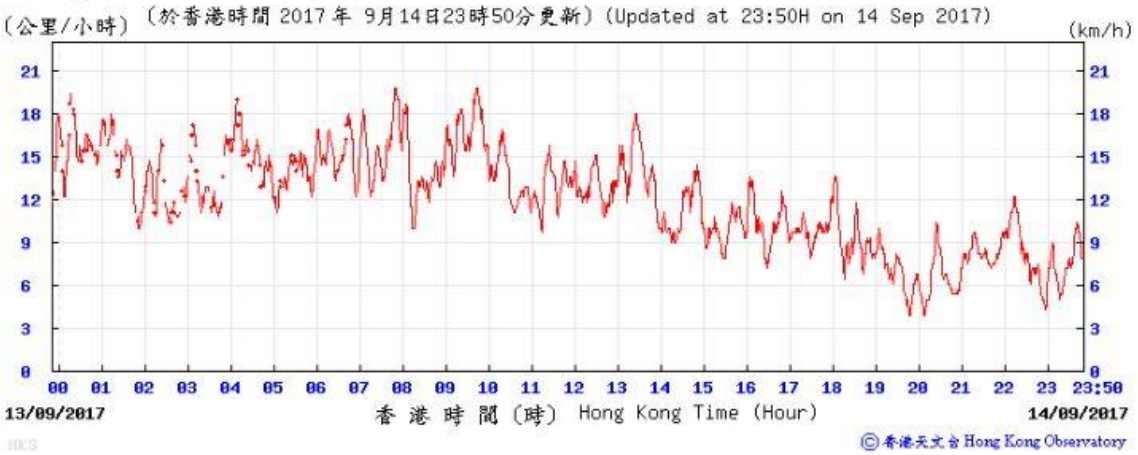

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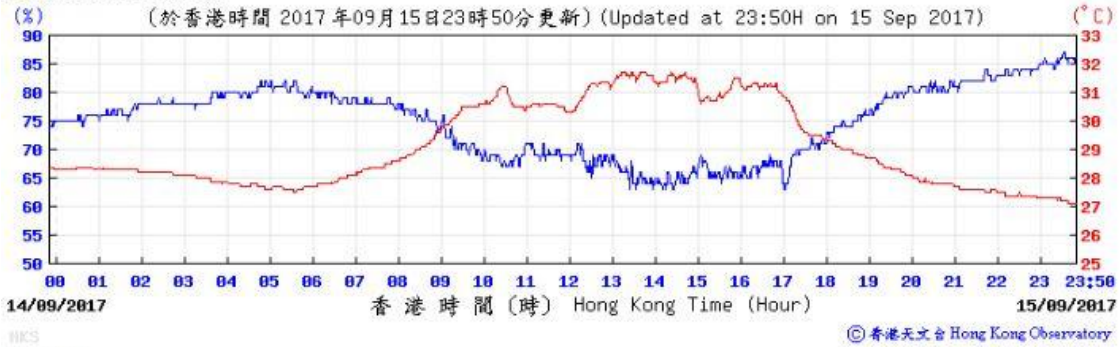
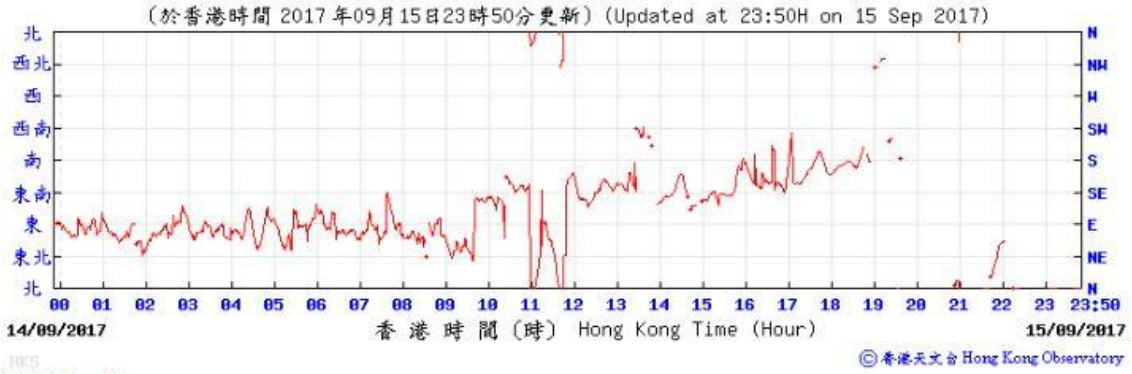


Pressure:

Wind Direction:



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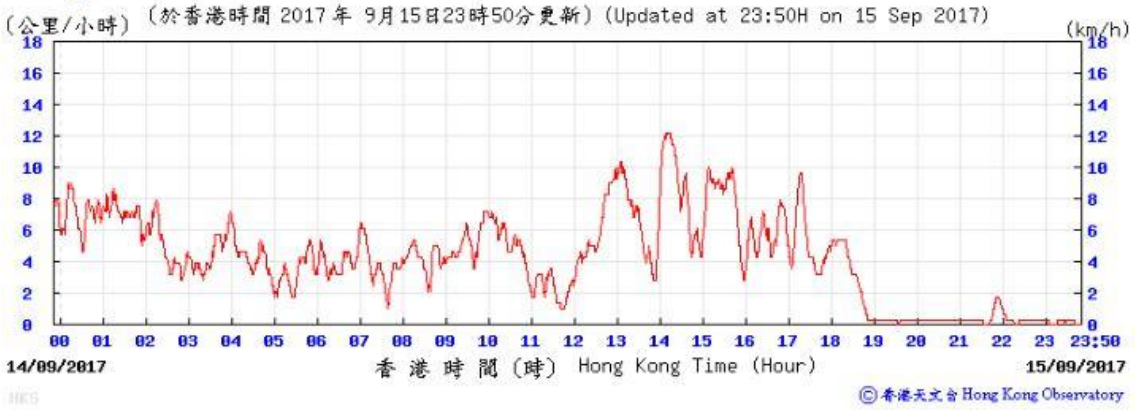

18/9/2017

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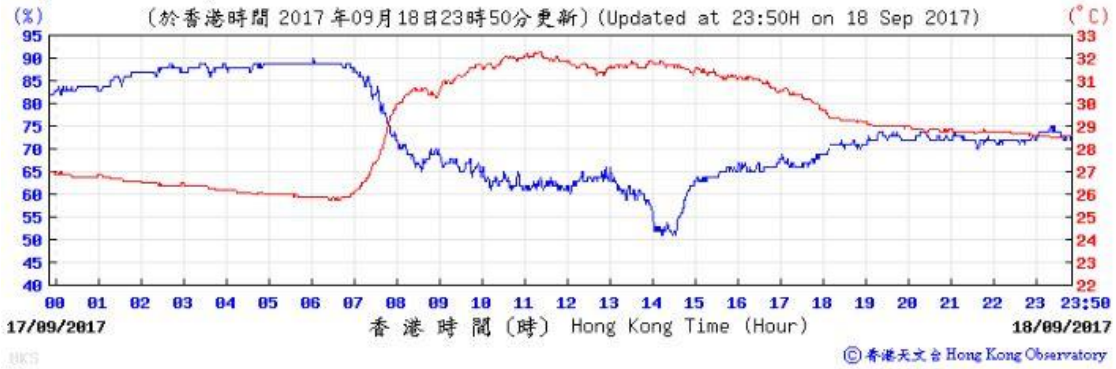
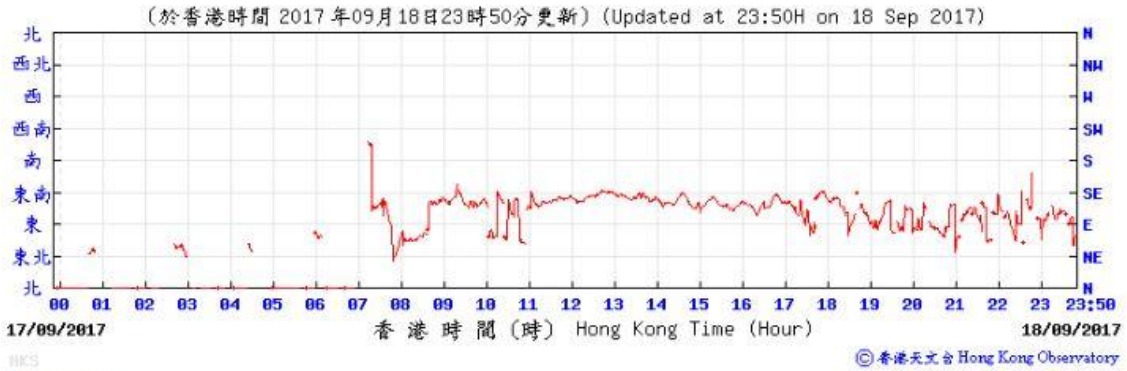


Pressure:

Wind Direction:



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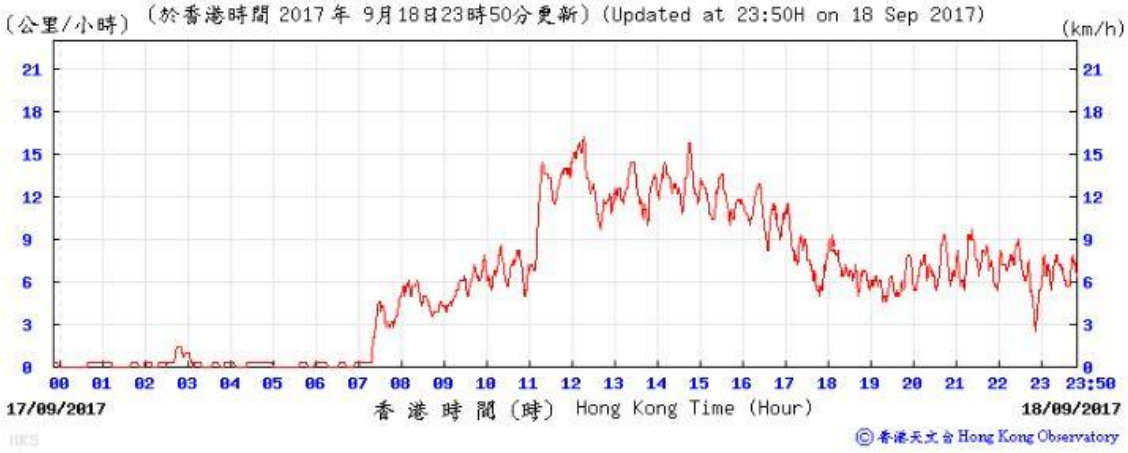

19/9/2017

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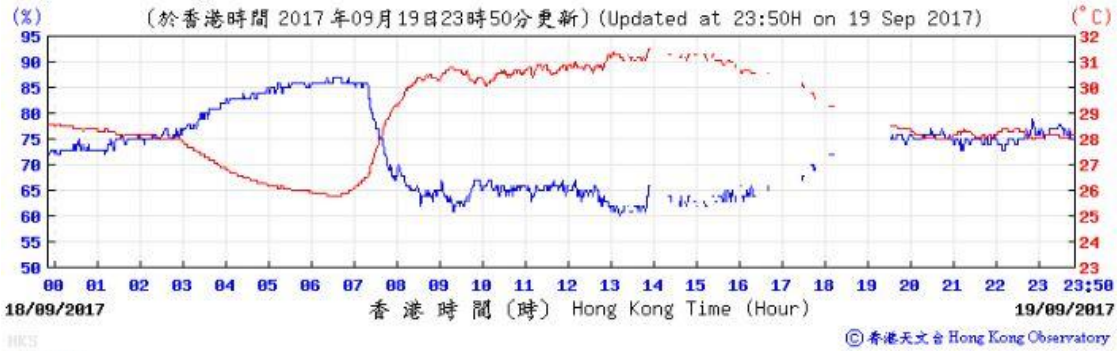
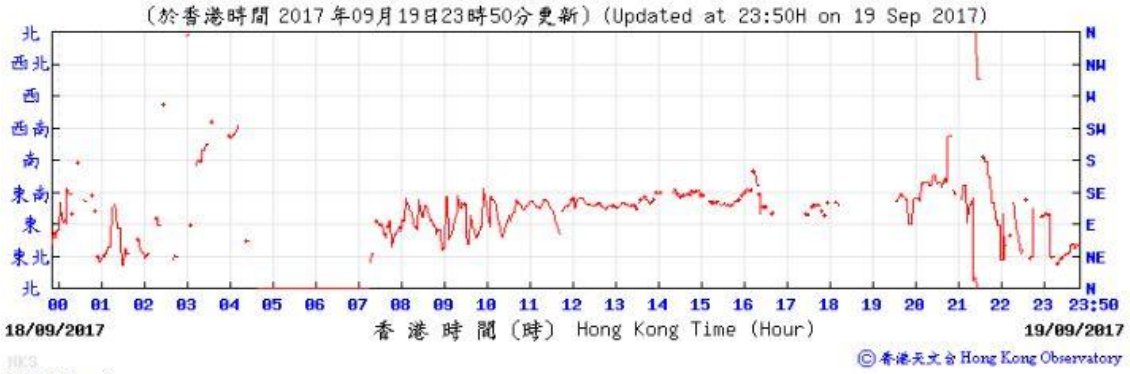
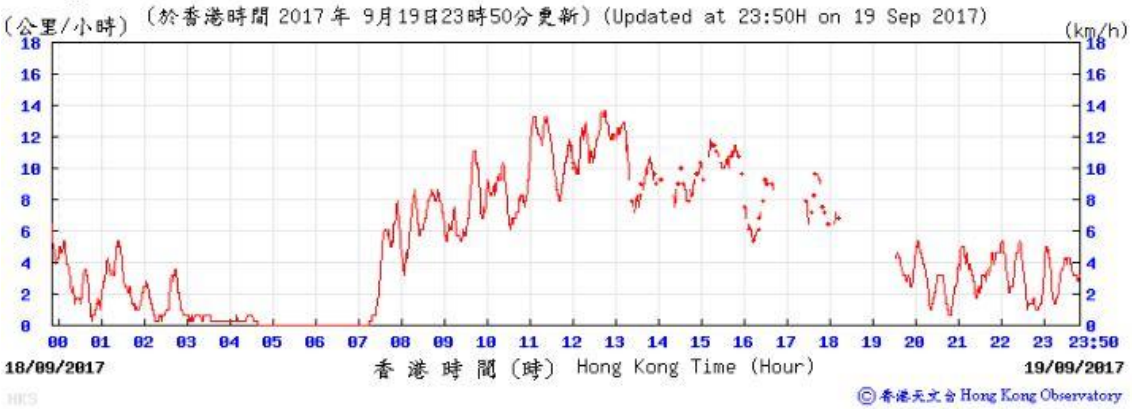


Pressure:

Wind Direction:



Wind Speed:



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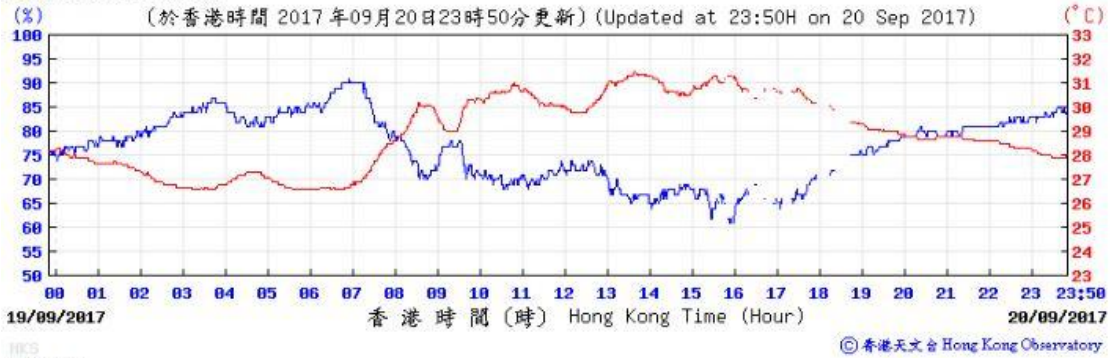
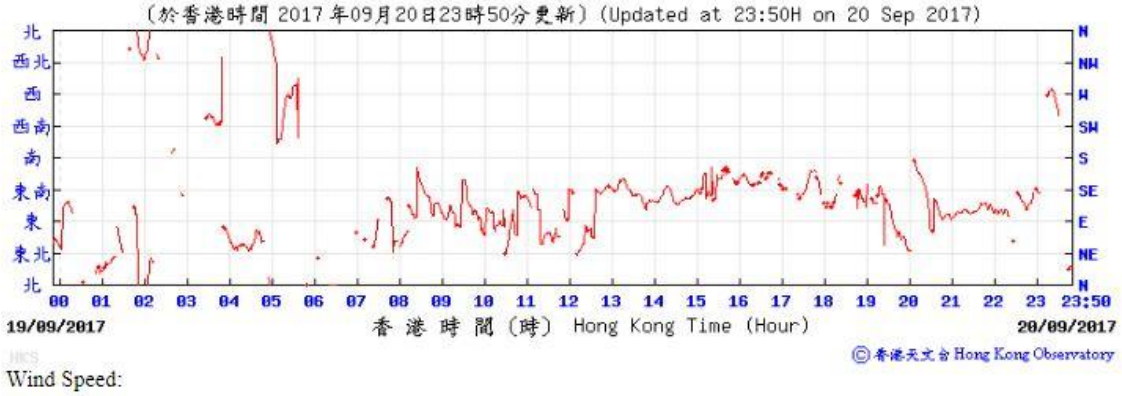


Pressure:

Wind Direction:



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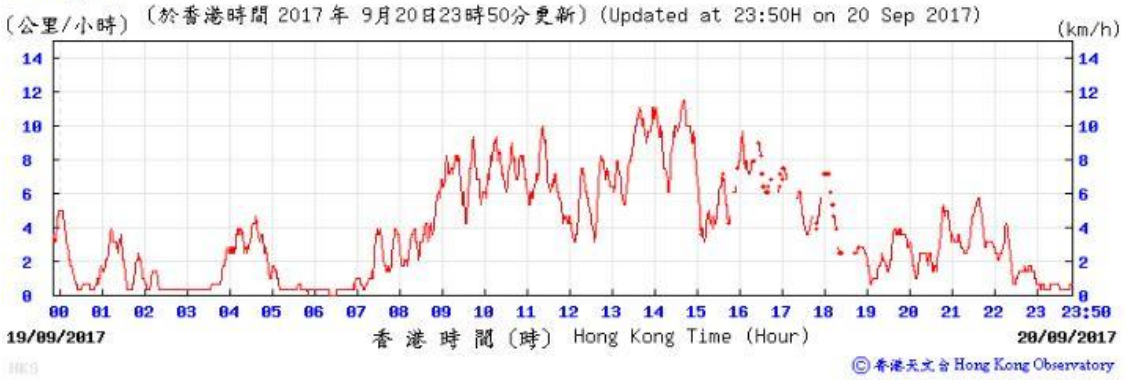

21/9/2017

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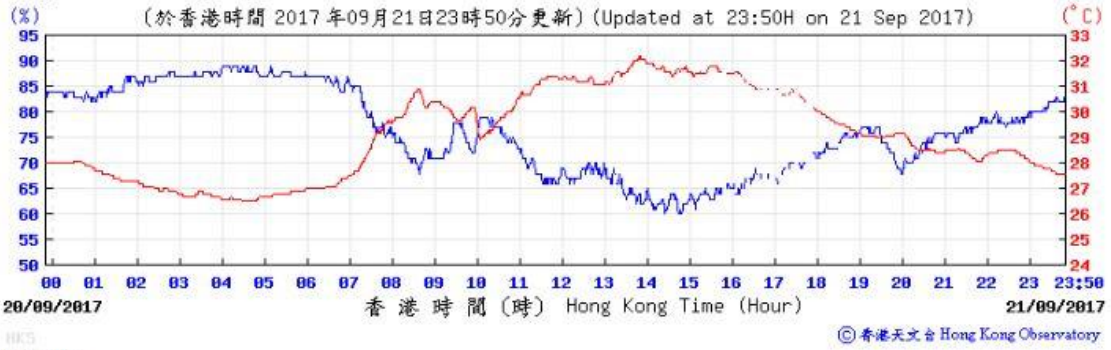
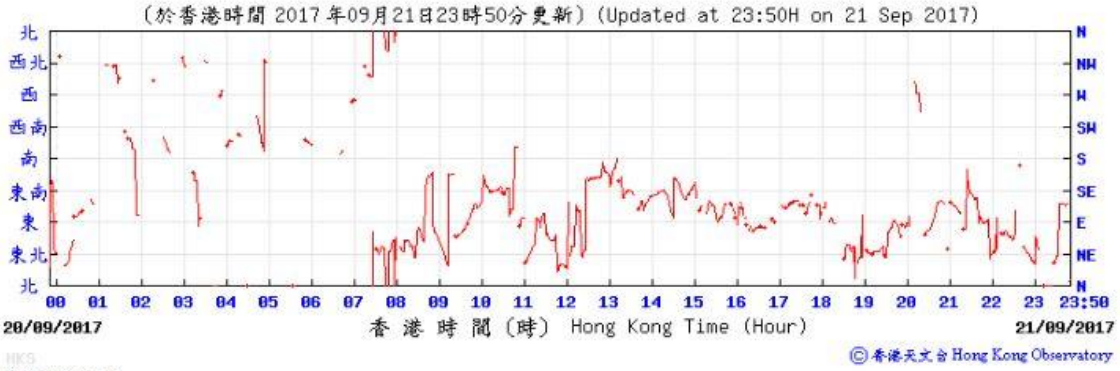


Pressure:

Wind Direction:



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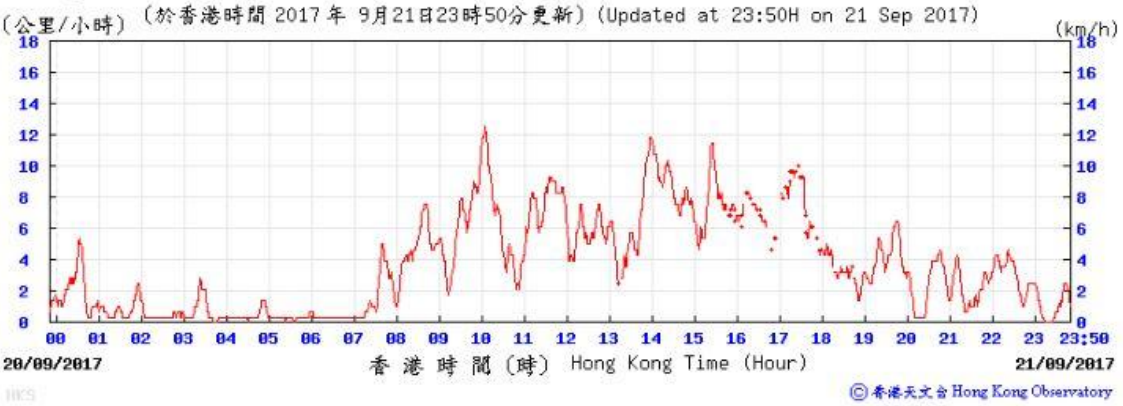

22/9/2017

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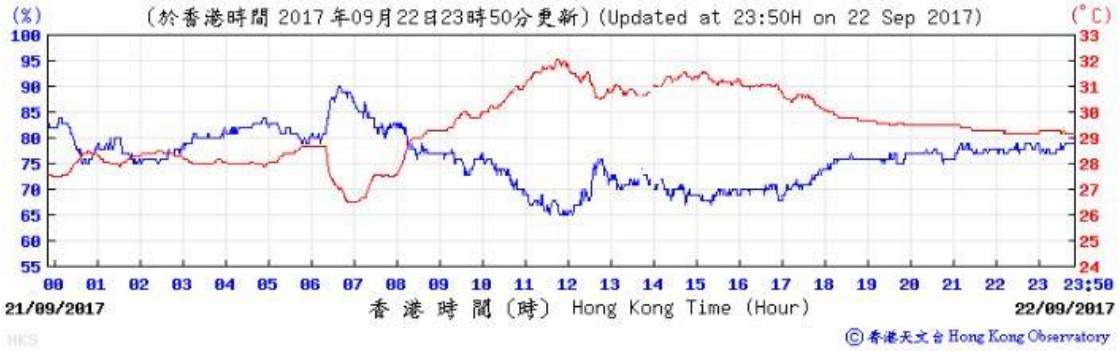
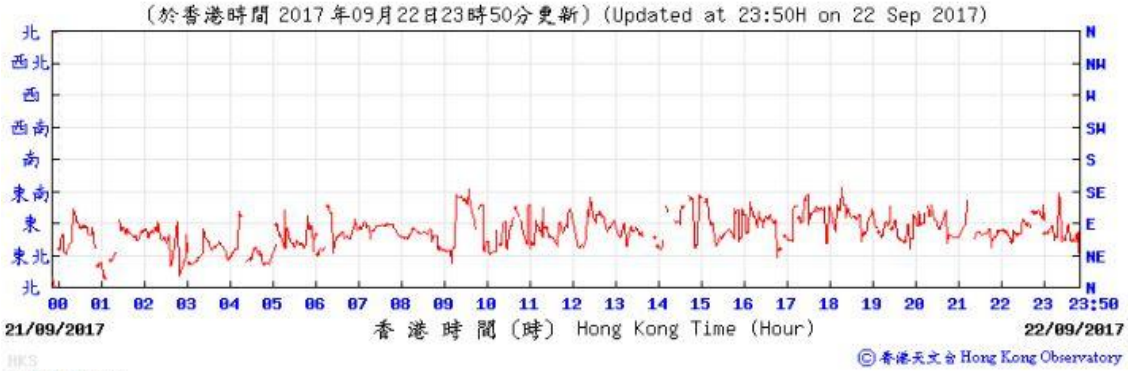
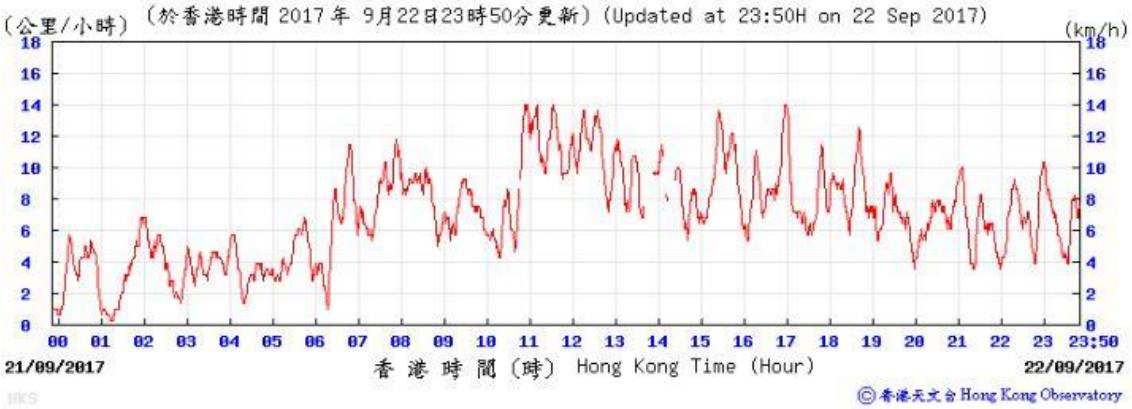


Pressure:

Wind Direction:



Wind Speed:



25/9/2017

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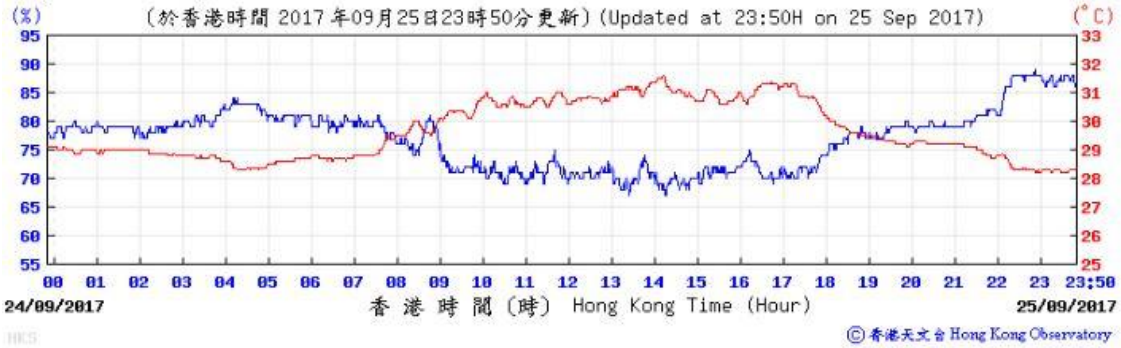
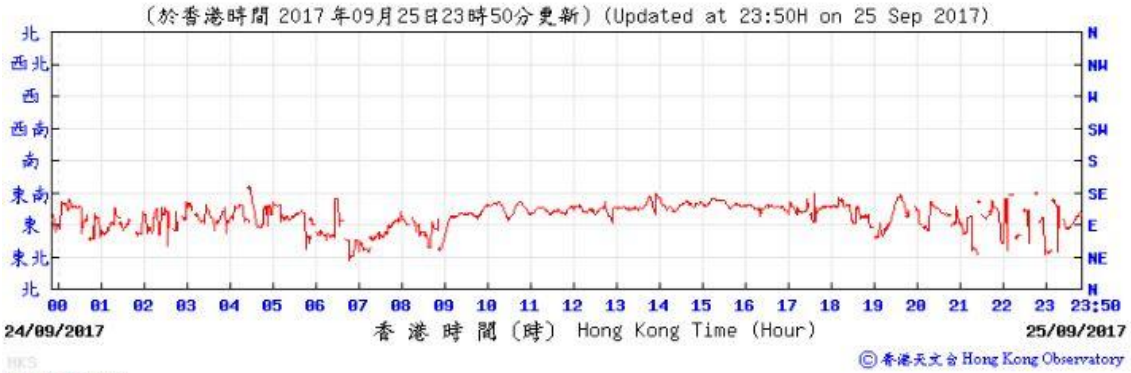


Pressure:

Wind Direction:



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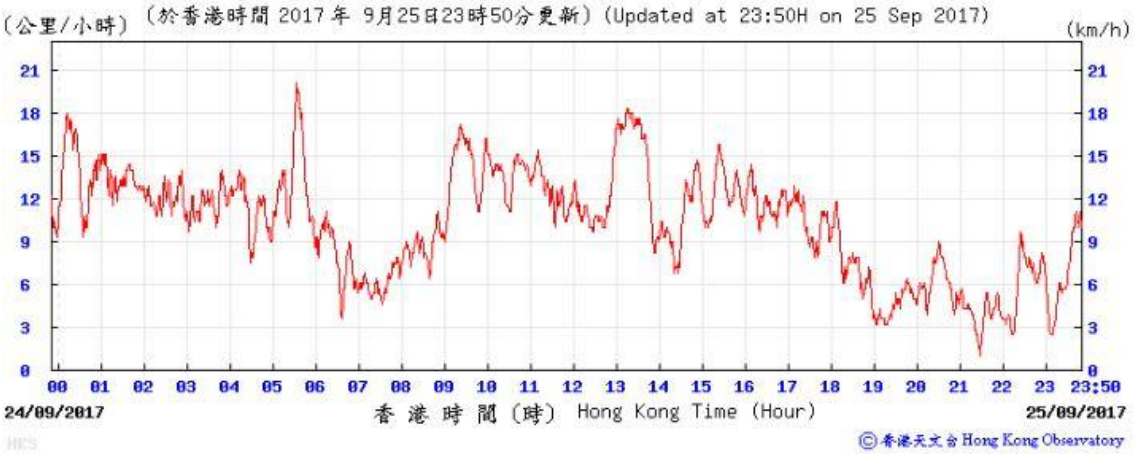

26/9/2017

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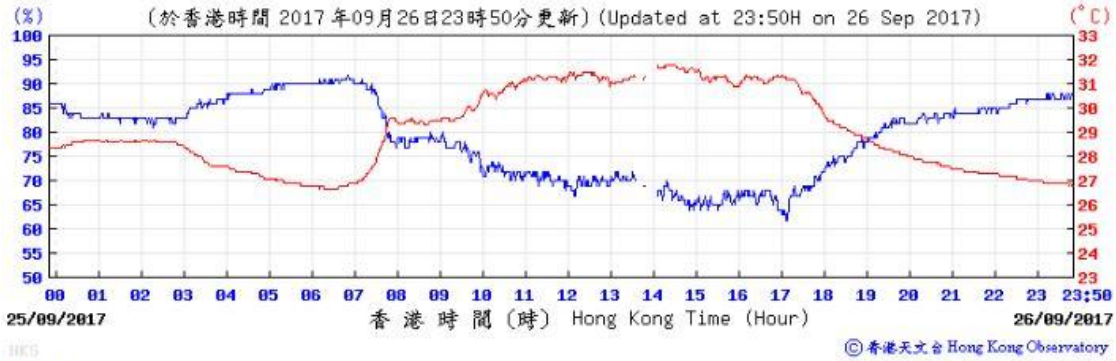
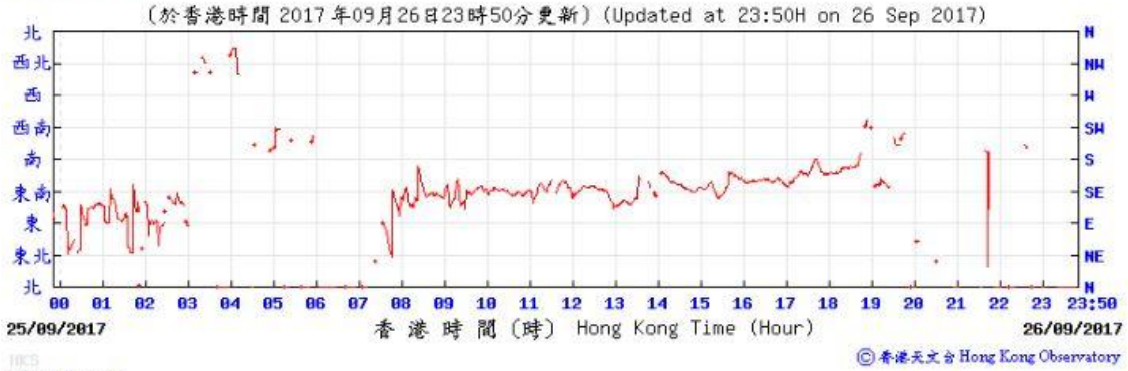


Pressure:

Wind Direction:



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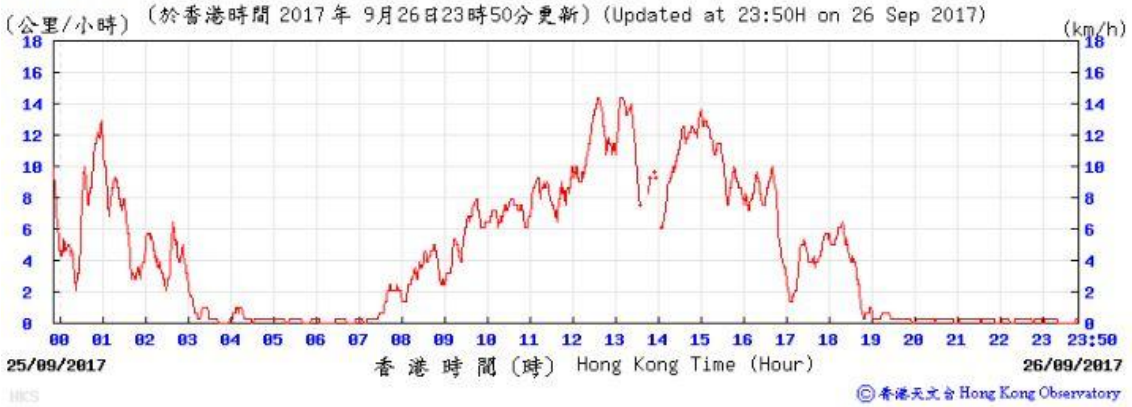

27/9/2017

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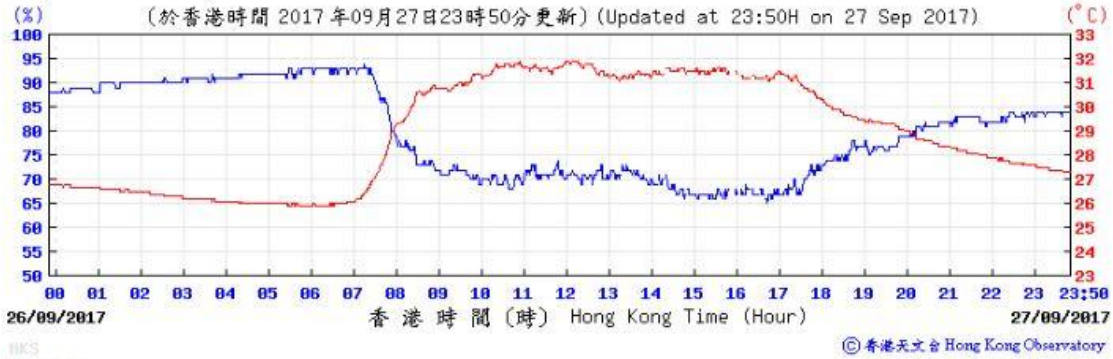
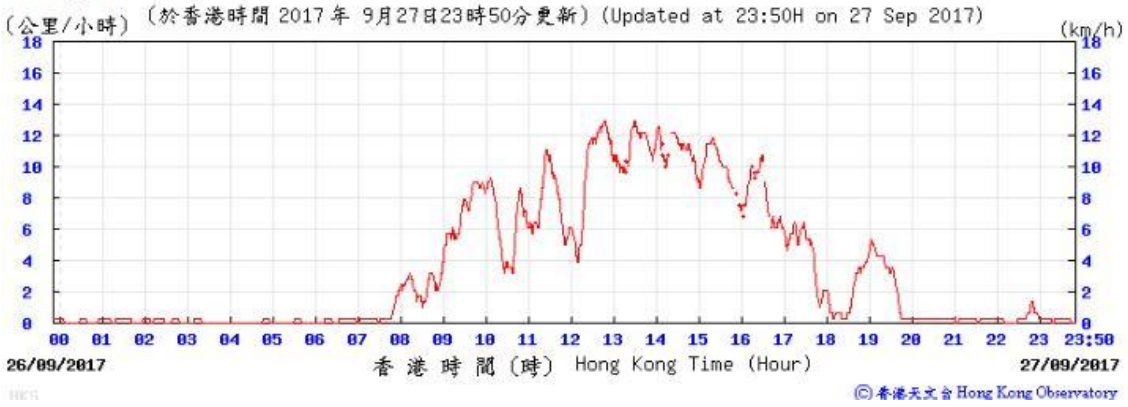


Pressure:

Wind Direction:

Wind Speed:



28/9/2017

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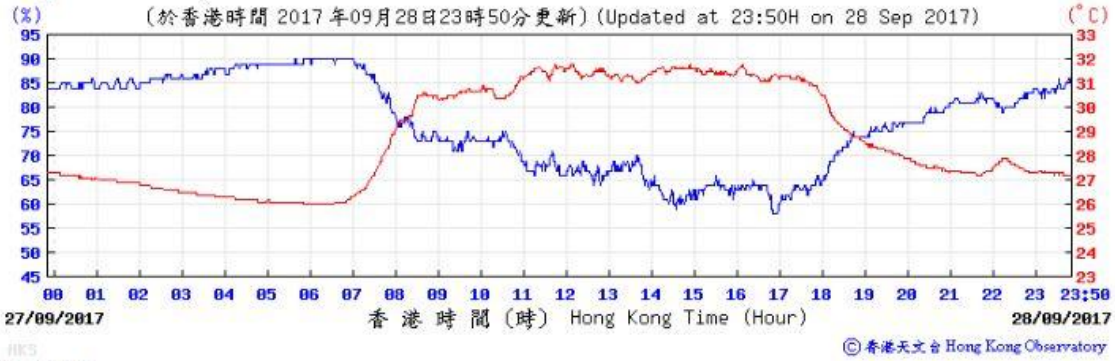

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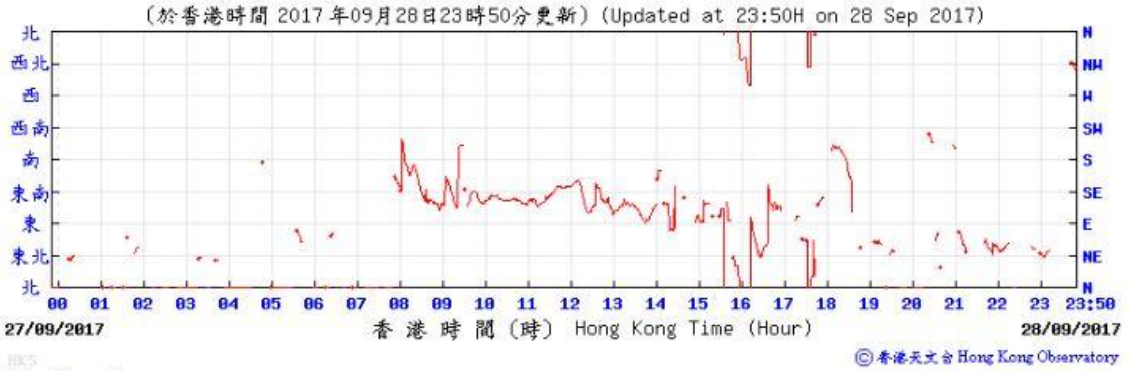
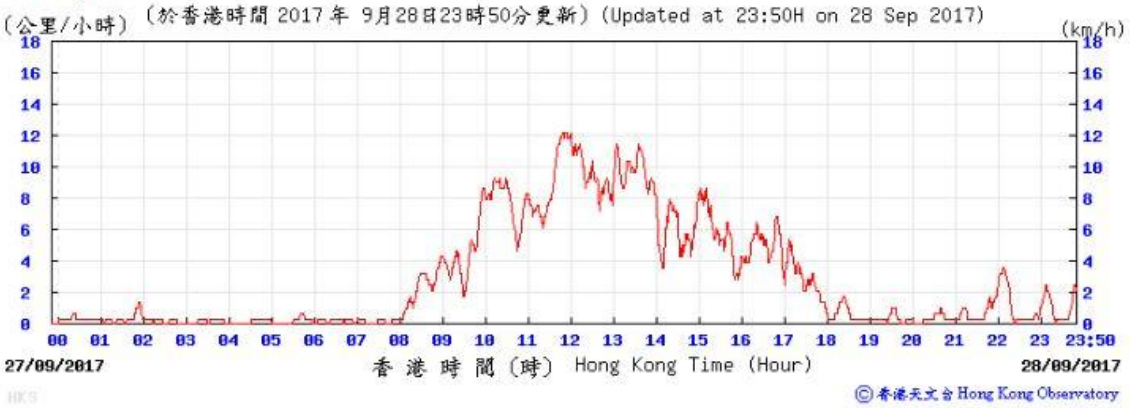
Wind Direction:



Wind Speed:



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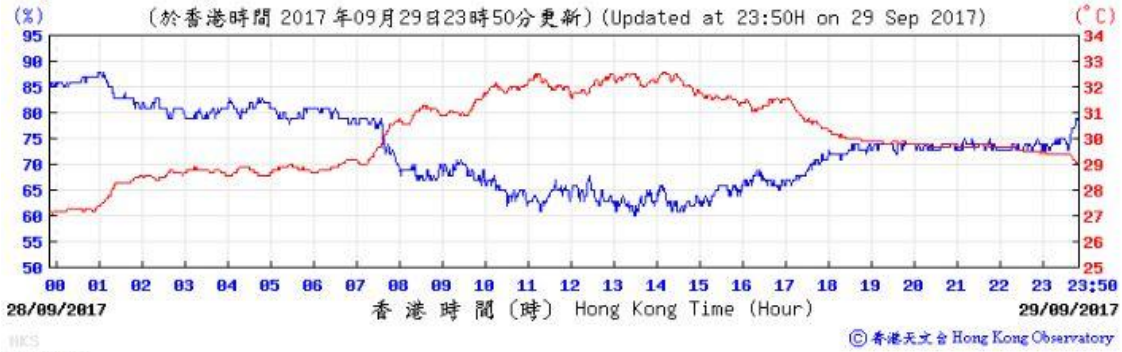
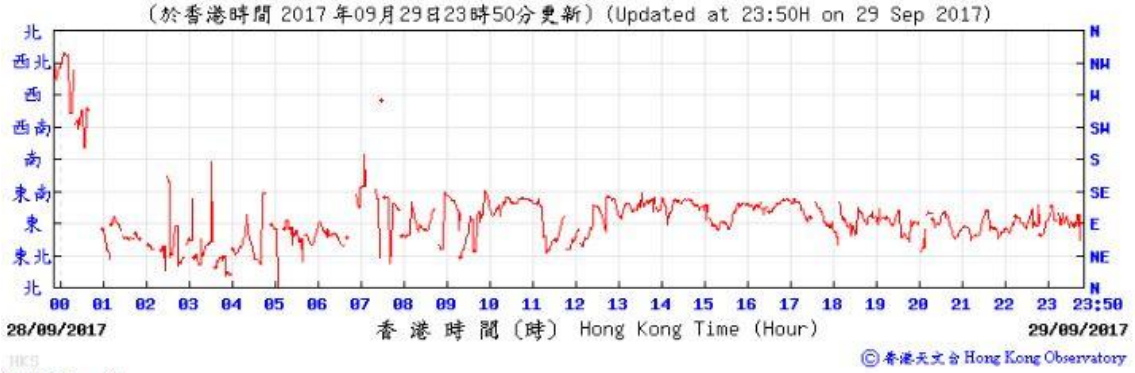
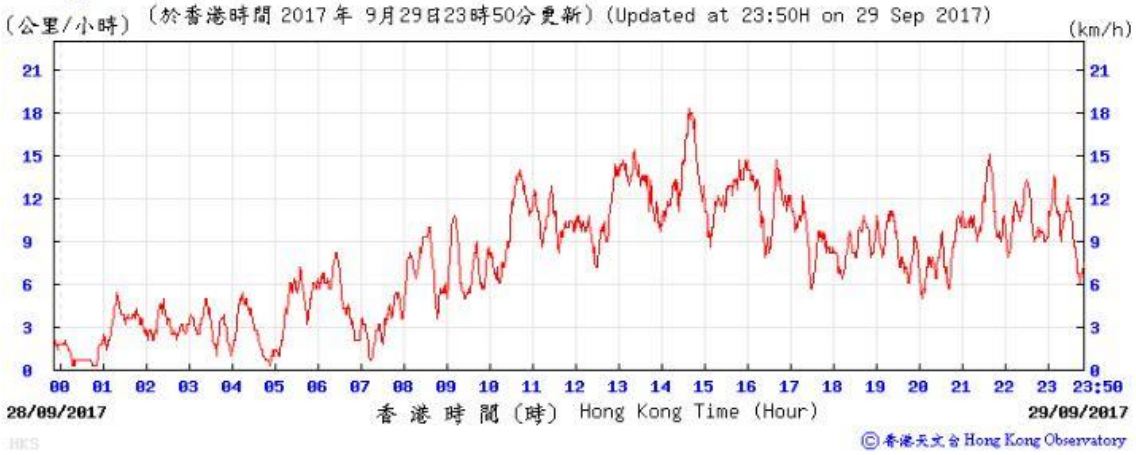


Pressure:

Wind Direction:



Wind Speed:



L. Ecological Inspection Records

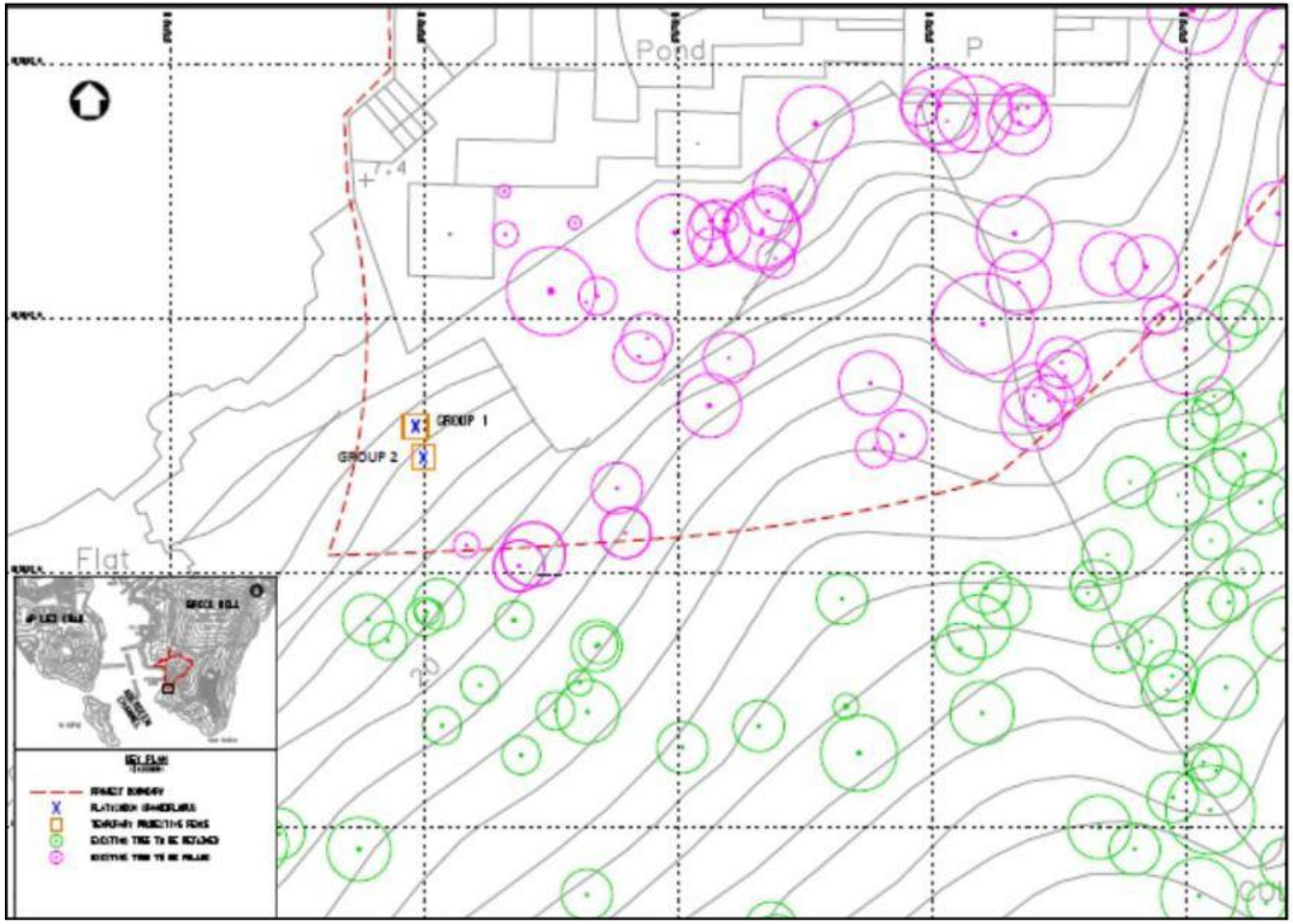


Figure 1 – Location of Two Groups of *Platycodon Grandiforus*

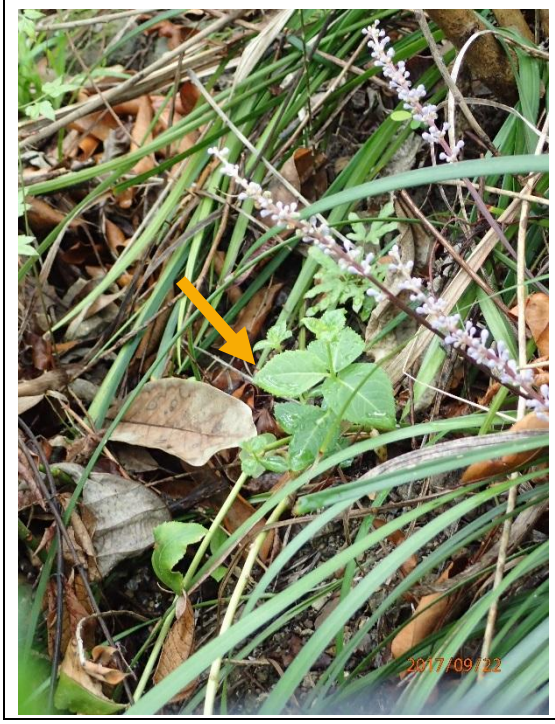
	Photo 1 – Group 1 of *Platycodon Grandiforus*
	Photo 2 – Group 2 of *Platycodon Grandiforus*

	Photo 3 – Current situation of fencing and warning sign

M. Waste Flow Table

Ocean Park Tai Shue Wan Water World Project Contact No. TSW-C006
Waterpark - Main Building Works

Monthly Summary Waste Flow Table for 2017 (Year)

Month	Quantity of Inert C&D Materials							Quantity of Non-inert C&D Materials (i.e. C&D Wastes)				
	Generated	Disposed			Reused			Recycled			Disposed	
	Total Quantity Generated	Disposed as Public Fill at CW-PFBP	Disposed as Public Fill at TKO137	Total Quantity Disposal	Reused in the Contract	Reused in other Projects	Total Quantity Reused	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	General Refuse
Unit	(Tonne)	(Tonne)	(Tonne)	(Tonne)	(Tonne)	(Tonne)	(Tonne)	(kg)	(kg)	(kg)	(kg)	(Tonne)
Jan												
Feb												
Mar												
Apr												
May												
Jun	4917.45	3061.36	156.09	3217.45	1700.00	0.00	1700.00	0.00	210.00	0.00	0.00	60.93
SUB-TOTAL	4917.45	3061.36	156.09	3217.45	1700.00	0.00	1700.00	0.00	210.00	0.00	0.00	60.93
Jul	7447.78	6416.15	191.63	6607.78	840.00	0.00	840.00	0.00	210.00	0.00	0.00	45.82
Aug	4168.41	2211.67	356.74	2568.41	1600.00	0.00	1600.00	0.00	336.00	0.00	0.00	52.86
Sep	6370.40	4641.55	868.85	5510.40	860.00	0.00	860.00	0.00	210.00	0.00	0.00	71.06
Oct												
Nov												
Dec												
TOTAL	22904.04	16330.73	1573.31	17904.04	5000.00	0.00	5000.00	0.00	966.00	0.00	0.00	230.67

N. Implementation Schedule for Environmental Mitigation Measures

Appendix C. Implementation Schedule for Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1]				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
Cat.1 Key/specific proposed mitigation measure									
Noise Impact (Construction)									
5.7	3.2	**Selecting Quiet Plant** The actual SWL of quiet plant is less than the value specified in GW-TM for the same piece of equipment. It should be noted that the silenced PME taken from EPD's Quality Powered Mechanical Equipment (QPME) Inventory.	Within Project area / Duration of the construction phase / Prior to commencement of operation	Contractor appointed by OPC		✓			EIAO and Noise Control Ordinance
5.7	3.2	**Use of Movable 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 that the direct line of sight between the PME and the NSRs is blocked.	Within Project area / Duration of the construction phase / Prior to commencement of operation	Contractor appointed by OPC		✓			EIAO and Noise Control Ordinance
Ecological Impact									
10.7	8.3	**Inspection of Active Ardeid Nest** Prior to site clearance works at the planting area abandoned for ardeid breeding, the area around the boundary of the ardeids roosting site as indicatively shown in Figure 8.1 should be inspected to confirm no active ardeid nest is present. If any active ardeid nest is observed, suitably sized buffer area should be established to avoid human or machinery disturbance until the nest is abandoned.	Indicative boundary of the ardeids roosting site within Project construction site (location indicated in Figure 8.1) / For once / Before site clearance	Qualified ecologist appointed by OPC	✓				EIAO-TM; HK Ordinance Cap. 170
10.7	8.3	**Inspection of Short-nosed Fruit Bat** As precautionary measure, prior to any proposed arboricultural works of the trees (particularly the Chinese Fan-palms), daytime	Project construction site / For once / Before arboricultural works of	ET appointed by OPC	✓	✓			EIAO-TM; HK Ordinance Cap. 170

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1]				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		inspection should be carried out to confirm no Short-nosed Fruit Bat is present. If any Short-nosed Fruit Bat is observed roosting, suitably sized buffer area should be established around the tree to minimise human or machinery disturbance until the bat has left.	the trees						
10.7	8.3	**In-situ Preservation of Plant Species of Conservation Interest** During construction phase, protective fence for the identified flora species of conservation concern shall be erected and maintained.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			EIAO-TM
10.7	8.3	**Inspection of Ardeid Nest during breeding season** After commencement of construction phase, the Site should be monitored monthly in breeding season (April to July) to check for any potential breeding and nesting activities.	Project construction site / Throughout construction stage / Until completion of all construction activities	Qualified ecologist appointed by OPC		✓			EIAO-TM
10.7	8.2	**Timing of site clearance and tree felling works** Site clearance and tree felling works at the existing ardeid night roost location as shown in Figure 8.1 should be avoided during the peak wintering season of ardeids, i.e. between November and March.	Indicative boundary of the ardeids roosting site within Project construction site (location indicated in Figure 8.1) / Throughout construction stage / Until completion of site clearance and tree felling works within the boundary	Contractor appointed by OPC		✓			EIAO-TM
10.7	8.3	**Compensation for Ardeid Roosting Site** An enhancement area with following features should be provided as an alternative roosting site for ardeids. ▪ The location is at southern part of the Project area (location indicated in Figure 8.1) ▪ The enhancement area shall include a Flamingo Pond ▪ Native tree species *Macaranga tanarius* and *Celtis sinensis* and tree species which was used by ardeids for roosting *Mallotus paniculatus, Ficus hispida* and *Cratoxylum cochinchinense* shall be considered in the plan. ▪ Heavy standard sized trees shall be considered for planting to allow early establishment of the trees around the Flamingo	Southern part of Project construction site (location indicated in Figure 8.1) / Before and throughout construction stage / Until completion of Flamingo Pond construction and tree planting activities at that area	Qualified ecologist and Contractor appointed by OPC	✓	✓	✓		EIAO-TM

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		Pond.							
10.7	8.3	**Compensation for Woodland Habitat** ▪ Provision of a Woodland Area of about 1.62 ha, which includes 0.84 ha woodland compensation on-site and 0.78 ha on-site woodland reinstatement, to mitigate for permanent loss of woodland habitat. ▪ In the woodland compensation area, whips should be planted with predominately native tree species similar to the affected woodland, such as *Celtis sinensis*, *Cratoxylum cochinchinense*, *Polyspora axillaris* and *Sterculia lanceolata*.	Location of Woodland Compensation Area indicated in Figure 8.2/ Before and throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓	✓		EIAO-TM
Landscape and Visual Impact (Construction)									
Table 12.13 (CP07)	Table 9.1 (CP07)	**Temporary Tree Nurseries** Temporary tree nurseries may be set up within the Project area at an early stage to allow small trees to grow during the construction period. By the time these trees are needed for landscape planting at the end of the construction phase, they will have grown larger, require minimal pruning and suffer much less damage during transplanting, as the moving distance from an on-site rather than off-site nursery will be much smaller. The temporary tree nurseries can also temporarily hold the existing trees to be transplanted if direct transplantation from their original locations to the final recipient location is impracticable. The locations of the temporary tree nurseries should be carefully selected so that the trees can also act as screen planting to block the views of the Project area from the VSRs during the construction phase, if practicable.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM
Table 12.13 (CP08)	Table 9.1 (CP08)	**Advance Planting** Advance planting should be undertaken at the earliest possible stage of the construction phase of the project. Plant species, preferably native ones, should be carefully selected to blend in with the existing preserved vegetation. Landscape planting in movable planters should also be considered as a temporary greening measure for the Project area.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM
Landscape and Visual Impact (Operation)									
Table 12.14 (OP04)	Table 9.2 (OP04)	**Green Roofs and Vertical Greening** Green Roofs and Vertical Greening should be provided where feasible and appropriate to screen and soften the hard edges of	Project building rooftops / During design stage / Throughout operation	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		building structures.	phase						
Table 12.14 (OP05)	Table 9.2 (OP05)	**Reprovision of Flamingo Pond** A pond is recommended to replace the demolished Flamingo Pond as compensation for the loss of semi-natural ponds, where wildlife, such as birds, can utilise.	Project area / During design stage / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM
Table 12.14 (OP07)	Table 9.2 (OP07)	**Woodland Compensation** 1.53ha of affected woodland is recommended to be reinstated / compensated by 1.62ha of whip tree planting adjacent to the existing unaffected woodland and tall shrubland. Native species should be proposed as far as practicable to re-create a native landscape, restore the ecological habitats and blend in with the existing native vegetation.	Project area / During design stage / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM
Cat. 2 Submission required post EIA stage									
Sewerage and Sewage Treatment Implications									
7.7	5.2	**Detailed Sewerage Design Report** In order to prevent septicity problems during operation phase, a detailed sewerage design report should be submitted to DSD for approval prior to installation of the rising mains.	Rising mains site / During design stage	Design Engineer	✓				Sewerage Manual Part 1
Ecological Impact (Construction)									
10.7	8.3	**Vegetation Survey for Plant Species of Conservation Interest** For precautionary purposes and to further ensure no flora species of conservation interest to be affected, a detailed vegetation survey need to conduct to the exact locations, number and condition of individuals of *Platycodon grandiflorus*.	Project construction site / For once / Before site clearance	Qualified botanist/ecologist of the ET appointed by OPC	✓				EIAO-TM; Hong Kong Ordinance Cap. 96
10.7	8.3	**Woodland Compensation Plan** A Woodland Compensation Plan shall be prepared and submitted to AFCD for approval no later than one month prior to commencement of site clearance. The plan shall include but not limited to the following: ▪ Timing of planting works ▪ Planting location ▪ Species, size and number of trees ▪ Monitoring methodology	Location of Woodland Compensation Area indicated in Figure 8.2/ Before construction stage / No later than one month prior to commencement of site clearance	Qualified botanist/ecologist of the ET appointed by OPC	✓				EIAO-TM

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		▪ Action Plan							
Landscape and Visual Impact (Construction)									
Table 12.13 (CP05)	Table 9.1 (CP05)	**Transplantation of Existing Trees** Trees which are in direct conflict with the development proposals and suitable for transplantation should be transplanted as far as practicable. A tree transplantation proposal should be submitted together with the tree removal application. Trees proposed to be transplanted should preferably be transplanted from their original locations directly to their final recipient locations in one go. If this is infeasible, the trees should be held in a temporary tree nursery, preferably within the Project area, where the trees will be properly maintained.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM; LAO PN No. 07/2007
Landscape and Visual Impact (Operation)									
Table 12.14 (OP02)	Table 9.2 (OP02)	**Compensatory Tree Planting** Existing trees to be felled should be compensated as far as practicable. Native species should be proposed as far as practicable to re-create a native landscape, restore the ecological habitats and blend in with the existing native vegetation. A compensatory tree planting proposal should be submitted together with the tree removal application for approval by relevant authorities in accordance with LAO Practice Note No. 7/2007. It is recommended that approximately 608 heavy standard trees and approximately 18,202 whip trees could be planted on-site. The availability of off-site compensatory tree planting area is still subject to further investigation and agreement with relevant authorities.	Project area / During design stage / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM; LAO PN No. 07/2007
Cat. 3 Good site practice/housekeeping measures under EM&A mechanism									
Air Quality Impact (Construction)									
3.9.1	2.2	**Dust Control Measures** To achieve compliance with the FSP, RSP and TSP criteria during the construction phase, good practices for dust control should be implemented to reduce dust impacts. The dust control measures are detailed as follows: ▪ Use of regular water spraying (once every 2.5 hours or 4 times per day) to reduce dust emissions from heavy construction activities (including ground excavation, earth moving, etc.) at all active works area exposed site surfaces and unpaved	Project construction site / Duration of the construction phase / Prior to commencement of operation	Contractor appointed by OPC		✓			EIA Recommendation and Air Pollution Control (Construction Dust) Regulation

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		roads, particularly during dry weather. ▪ Covering 80% of stockpiling area by impervious sheets and spraying all dusty material with water immediately prior to any loading transfer operations to keep the dusty materials wet during material handling at the stockpile areas Relevant dust control practices as stipulated in the Air Pollution Control (Construction Dust) Regulation should be adopted: Good Site Management ▪ Good site management is important to help reduce potential air quality impact down to an acceptable level. As a general guide, the Contractor should maintain high standards of housekeeping to prevent emissions 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. Disturbed Parts of the Roads ▪ Main temporary access points should be paved with concrete, bituminous hardcore materials or metal plates and be kept clear of dusty materials; or ▪ Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet. Exposed Earth ▪ Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies. Loading, Unloading or Transfer of Dusty Materials ▪ All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as							

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		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 onto the debris so that it remains wet when it is dumped. Transport of Dusty Materials ▪ Vehicles 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 10 km/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 2.4 m 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							
Noise Impact (Construction)									

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
5.7	3.2	**Good Site Practice** Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. ▪ 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.	Project construction site / Duration of the construction phase / Prior to commencement of operation	Contractor appointed by OPC		✓			EIAO and Noise Control Ordinance
Noise Impact (Operation)									
5.7	3.3.2	**Fixed Plant Noise** With the adoption of the proposed maximum allowable SWLs, all representative NSRs is expected to comply with the relevant noise criteria for the daytime and evening time periods. No adverse fixed plant noise impact is anticipated. It is also recommended that the following noise reduction measures should be considered as far as practicable during design stage: ▪ choose quiet plant such as those which have been effectively silenced; ▪ include noise levels specification when ordering new plant (including chiller and E&M equipment); ▪ locate fixed plant / louvre away from any NSRs as far as practicable; ▪ locate fixed plant in walled plant rooms or in specially designed enclosures; ▪ locate noisy machine in a basement or a completely separate building;	Within Project area / Prior to operation phase / Duration of the operation phase / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓	✓	✓		EIAO and Noise Control Ordinance

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		▪ install direct noise mitigation measures including silencers, acoustic louvres and acoustic enclosure where necessary; and ▪ develop and implement a regularly scheduled plant maintenance programme so that equipment is properly operated and serviced in order to maintain a controlled level of noise. Prior to the operation of the Project, noise commissioning tests for all major fixed noise sources should be conducted.							
5.7	3.3.2	**Open Air Entertainment Noise** With the adoption of the proposed maximum allowable SWLs, all representative NSRs is expected to comply with the relevant noise criteria for the daytime and evening periods, the following measures should be considered as far as practicable during stage: ▪ use small clusters of small power loudspeakers rather than a few large power loudspeakers; and ▪ loudspeakers should be pointed away from nearby NSRs.	Within Project area / Duration of the operation phase / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓	✓			EIAO and Noise Control Ordinance
Water Quality Impact (Construction)									
6.7	4.2	**Construction Site Runoff** The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and erosion. The following measures are recommended to protect water quality of the inland areas: ▪ 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 Contractors 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	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			EIAO-TM; ProPECC Note PN 1/94; WPCO; TM-DSS

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		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 Contractors 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 minimise the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from site formation 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; ▪ 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								

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised 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; and, ▪ Bentonite slurries used on site 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. The Contractor would be required to obtain a license from EPD under the WPCO for discharge to the public drainage system or the marine environment. Construction site discharge should be collected by the temporary drainage system installed by the Contractor and treated or desilted on-site to fulfil the WPCO discharge license requirements before discharge.							
6.7	4.2	**General Construction Activities** Best Management Practices (BMPs) should be implemented at the construction site, including proper handling, sorting and storage of construction solid waste, debris and refuse generated on-site prior to disposal. Stockpiles of cement and other construction materials should be kept covered when not being used. The Contractor should also follow the guidelines set in the "Pesticides Used for Outdoor Mosquito Control", published by AFCD in 2010, for mosquito control on site.	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			EIAO-TM; ProPECC Note PN 1/94
6.7	4.2	**Expansion of Existing Storm U-Channel** Guidelines and measures summarised in ProPECC PN 1/94 for trenching activities should be implemented.	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			ProPECC Note PN 1/94
6.7	4.2	**Interception of Natural Streams** Guidelines and measures summarised in ProPECC PN 1/94 for excavation and stockpiling activities should be implemented.	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			ProPECC Note PN 1/94
6.7	4.2	**Site Formation Works** The construction programme should be properly planned to minimise excavation works during the wet season (April to September), temporarily exposed slope/soil surfaces should be	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			ProPECC Note PN 1/94

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		covered by a tarpaulin or other means, as far as practicable. Interception channels should be provided (e.g. along the crest/edge of the excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. Measures will be taken to minimise water ingress into the excavation. Diverting any water from the excavated areas to on-site wastewater treatment facilities for treatment prior to discharge should also be performed. Other measures that need to be implemented before, during and after rainstorms are summarised in ProPECC PN 1/94.							
6.7	4.2	**Construction of Sewage Sump Pit and Rising Mains** Measures for excavation works summarised for site formation works should also be implemented during construction of the sewage sump pit. During the laying of rising mains, guidelines and measures summarised in ProPECC PN 1/94 for trenching activities should be performed. Concrete water generated from the construction of the concrete support should be collected and treated with the wastewater treatment facilities prior to discharge.	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			ProPECC Note PN 1/94
6.7	4.2	**Accidental Spillage** The Contractor should register as a chemical waste producer if chemical wastes are produced from construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes. This will prevent contamination of top soil and water pollution due to construction site runoff. Maintenance of vehicles and equipment, involving activities with potential for leakage and spillage, should only be undertaken within areas appropriately equipped to control these discharges. 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.	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			ProPECC Note PN 1/94; Waste Disposal Ordinance (Cap 354); Waste Disposal (Chemical Waste) (General) Regulation

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: ▪ Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. ▪ Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. ▪ Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.							
6.7	4.2	**Sewage Effluent from the Construction Workforce** The Contractor should provide temporary sanitary facilities, such as portable chemical toilets within the construction site to handle sewage from the workforce. The Contractor has the responsibility to ensure that chemical toilets are used and properly maintained, and that licensed Contractors are employed to collect and dispose of the waste off-site at approved locations.	Project construction site / Duration of the construction phase	Contractor appointed by OPC		✓			ProPECC Note PN 1/94
Water Quality Impact (Operation)									
6.7	4.2	**Runoff from Road Surfaces** Road drainage system design has already included silt traps in the gully inlets to remove silt and grit before the runoff enters the public storm water drainage system. Silt traps should be regularly checked and maintained to ensure efficient operation.	Within Project area / During operation phase	OPC/Operator appointed by OPC			✓		EIAO-TM; WPCO
6.7	4.2	**Runoff from On-site Planting Area** Watering of plants on site should always be performed before application of pesticides, herbicides and fertilizers. Regular training should also be provided to frontline staff on the appropriate treatment and disposal of pesticides, herbicides and fertilizers.	Within Project area / During operation phase	OPC/Operator appointed by OPC			✓		EIAO-TM; WPCO; TM-DSS
Waste Management Implications (Construction)									
8.5.1.1	6.2	**Good Site Practice**	Project construction site / Throughout construction	Contractor		✓			Waste Disposal Ordinance; Waste

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		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 ▪ Stockpiles of C&D materials should be kept covered by impervious sheets to avoid wind-blown dust ▪ All dusty materials including C&D materials should be sprayed with water immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling at the stockpile areas ▪ 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	stage / Until completion of all construction activities	appointed by OPC					Disposal (Chemical Wastes) (General) Regulation; and ETWB Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site
8.5.1.2	6.2	**Waste Reduction Measures** Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: ▪ Sort inert C&D materials 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	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		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							
8.5.1.3	6.2	**Inert and Non-inert C&D materials** In order to minimise impacts resulting from collection and transportation of inert C&D materials for off-site disposal, the inert C&D materials should be reused on-site as fill material as far as practicable. In addition, inert C&D materials generated from excavation works could be reused as fill materials in local projects that require public fill for reclamation. The surplus inert C&D materials will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong. 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 DEVB 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 ETWB Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			Waste Disposal Ordinance ; DEVB Technical Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition Materials; and ETWB Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site
8.5.1.4	6.2	**Chemical Waste** If chemical wastes are produced at the construction site, the	Project construction site / Throughout construction	Contractor appointed by OPC		✓			Code of Practice on the Packaging

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		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, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Potential environmental impacts arising from the handling activities (including storage, collection, transportation and disposal of chemical waste) are expected to be minimal with the implementation of appropriate mitigation measures as recommended.	stage / Until completion of all construction activities						Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation
8.5.1.5	6.2	**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.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			Waste Disposal Ordinance and Public Health and Municipal Services Ordinance - Public Cleansing and Prevention of Nuisances Regulation
8.5.1.6	6.2	**Floating Refuse** Provide general refuse collection points on site can minimise the refuse contaminate the marine environment. The construction contractors will be required to regularly check and clean any refuse trapped or accumulated along the artificial seawall. Such refuse will then be stored and disposed of together with the general refuse.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			Waste Disposal Ordinance
Waste Management Implications (Operation)									
8.5.2.1	6.2	**General Refuse** General refuse should be collected on daily basis and delivered	Project area / On a regular basis /	Contractor appointed by OPC			✓		Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		to the refuse collection point accordingly. A reputable waste collector should be employed to remove general refuse regularly to avoid odour nuisance or pest/vermin problem. Sufficient recycling containers are recommended to be provided at suitable locations of the Project to encourage recycling of such waste as aluminium cans, plastics and waste paper.	Throughout operation stage						
8.5.2.2	6.2	**Chemical Waste** If chemical wastes are expected to be produced during the operation phase, the Project Proponent should register with the EPD as a chemical waste producer and 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, oxidising, irritant, toxic, harmful, corrosive, etc. Licensed collector should be deployed 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.	Project area / On a regular basis / Throughout operation stage	Contractor appointed by OPC			✓		Code of Practice on the Packaging Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation
8.5.2.3	6.2	**Floating Refuse** Regular inspection should be carried out along the artificial seawall of the Project boundary for any entrapment or accumulation of floating refuse. Where an appreciable amount of floating refuse is found on the artificial seawall during the inspection, the locations of such refuse will be recorded and arrangements with the project proponent will immediately be made to collect and clear the refuse from the seawall.	Project area / On a regular basis / Throughout operation stage	Contractor appointed by OPC			✓		Waste Disposal Ordinance
Land Contamination (Construction)									
9.6	7.2	In any case where contaminated soil is identified after the commencement of works, a Contamination Assessment Plan (CAP) is required to be prepared for EPD's endorsement prior to	Project construction site / Before construction stage	Contractor appointed by OPC	✓				Guidance Note for Contaminated Land Assessment and Remediation

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		the site investigation. The Contamination Assessment Report (CAR) and/ or Remediation Action Plan (RAP) should be prepared for EPD's approval after the site investigation. If land contamination is confirmed, remediation works should be carried out according to the approved RAP. A Remediation Report (RR) should also be prepared for EPD's endorsement to demonstrate that the clean-up of the contaminated land is completed. No construction work or development of site should be carried out before the approval of the RR.							Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management Practice Guide for Investigation and Remediation of Contaminated Land
9.6	7.2	If contaminated soil is identified, the following mitigation measures are for the excavation and transportation of contaminated materials (if any): ▪ To minimise the incidents of construction workers coming in contact with any contaminated materials, bulk earth-moving excavation equipment should be employed; ▪ Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when working directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site; ▪ Stockpiling of contaminated excavated materials on site should be avoided as far as possible; ▪ The use of any contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out; ▪ Vehicles containing any excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater; ▪ Truck bodies and tailgates should be sealed to prevent any discharge; ▪ Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			Waste Disposal Ordinance (Cap 354) Waste Disposal (Chemical Waste) (General) Regulation (Cap 354)

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		tipping; ▪ Speed control for trucks carrying contaminated materials should be exercised. ▪ Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and ▪ Maintain records of waste generation and disposal quantities and disposal arrangements.							
Landscape and Visual Impact (Construction)									
Table 12.13 (CP01)	Table 9.1 (CP01)	**Minimisation of Construction Period** The construction programme should be carefully designed to minimise the length of the construction period.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM
Table 12.13 (CP02)	Table 9.1 (CP02)	**Minimisation of Works Areas** The footprint of the proposed hard structures as well as the extent of temporary works areas should be minimised as far as practicable.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM
Table 12.13 (CP03)	Table 9.1 (CP03)	**Construction Site Controls** Construction site controls should be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction phase activities, such as the storage of materials, the location and appearance of site accommodation, etc. are minimised.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM
Table 12.13 (CP04)	Table 9.1 (CP04)	**Preservation of Existing Vegetation** The development proposal should avoid disturbance to existing vegetation as far as practicable. A formal tree removal application should be submitted for approval by relevant authorities in accordance with LAO PN No. 07/2007 "Tree Preservation and Tree Removal Application for Building Development in Private Projects" during the detailed design phase of the Project. Where possible, all trees which are not in direct conflict with the development proposals should be retained *in situ*.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM; LAO PN No. 07/2007
Table	Table	**No Intrusion Zones**	Project construction site /	Contractor	✓	✓			EIAO-TM

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
12.13 (CP06)	9.1 (CP06)	Where practicable, "no intrusion zones" should be designated within the Project area for protection of existing vegetation. Durable boundary fences should be erected to clearly demarcate these "no intrusion zones". No construction activities, storage of materials and vehicular access will be allowed within the "no intrusion zones" to prevent potential damage to canopies and root zones of vegetation.	Throughout construction stage / Until completion of all construction activities	appointed by OPC					
Table 12.13 (CP09)	Table 9.1 (CP09)	**Construction Site Hoardings** Two types of hoardings should be considered. One is used for areas in close contact with visitors and for areas where visual intrusion is a key concern. It should be graphical and thematic, and visually 'impermeable' to block the views of construction activities from the VSRs. The other is used for areas to be viewed at a distance. It should be subtle and camouflaged so that it blends in with the surrounding landscape.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC	✓	✓			EIAO-TM
Table 12.13 (CP10)	Table 9.1 (CP10)	**Dust and Erosion Control for Exposed Soil** Exposed soil shall be covered or "camouflaged" and watered frequently. Areas that are expected to be left with bare soil for a long period of time should be hydroseeded and / or covered with suitable protective fabrics.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			EIAO-TM
Table 12.13 (CP11)	Table 9.1 (CP11)	**Appearance of Construction Plant / Machinery** To minimise the visual intrusion of construction activities to visitors and other VSRs, a suitable colour scheme of construction machines and plants should be adopted where possible.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			EIAO-TM
Table 12.13 (CP12)	Table 9.1 (CP12)	**Construction Lighting Control** All security floodlights for construction sites should be equipped with adjustable shield, frosted diffusers and reflective covers, and be carefully controlled to minimise light pollution and night-time glare to the VSRs.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			EIAO-TM
Table 12.13 (CP13)	Table 9.1 (CP13)	**Appearance of Construction Workers** To protect Ocean Park's image, construction workers should be required to enter the park areas with their helmets and safety vests properly stored or carried in non-transparent bags. They should also dress properly and cleanly.	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor appointed by OPC		✓			EIAO-TM
Landscape and Visual Impact (Operation)									

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
Table 12.14 (OP01)	Table 9.2 (OP01)	**Sensitive Design and Disposition** All proposed hard structures should be sensitively designed in a manner that responds to the existing and planned landscape context, and minimises potential adverse landscape and visual impacts. The structural design should seek to reduce the apparent visual mass through the use of natural materials such as wooden frame and semi-transparent panels. Subdued tones should be considered for the colour palette with non-reflective finishes to reduce glare effect. Site specific measures, such as the disposition of the key structures closer to the northern slopes, the design of building forms as extension along the existing slope topography, the use of concave roof form and the location of ride platforms on or near the slopes to minimise structural support, should also be considered for better integration with the surroundings and minimisation of potential visual impacts.	Project buildings / During design stage / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM
Table 12.14 (OP03)	Table 9.2 (OP03)	**Enhancement Planting** Other than compensatory tree planting, additional trees, shrubs, groundcovers and lawn should also be considered to maximise greening within the redevelopment area.	Project area / During design stage / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM
Table 12.14 (OP06)	Table 9.2 (OP06)	**Responsive Lighting Design** Overall lighting design would carefully consider a reasonable level of functional and thematic lighting with due consideration of possible light pollution and night-time glare to the surroundings. Consideration shall be made by the lighting designers to the following measures: ▪ Lighting shall be designed with due consideration of mounting height and direction of light fixtures so as not to point directly towards any sensitive receiver. ▪ Lighting shall be arranged with due consideration of reflectance so as to avoid glare effect. ▪ Lighting shall be regularly monitored during operation. ▪ Lights located adjacent or in proximity to neighbours shall be carefully designed to prevent possible light intrusion. ▪ Lighting operation schedule shall specify only lights necessary for security to be left on after business hours. ▪ Paving materials should be selected as necessary to reduce	Project area / During design stage / Throughout operation phase	Design Architect / Contractor appointed by OPC	✓		✓		EIAO-TM

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage[1] Des	Con	Op	Dec	Relevant Legislation & Guidelines
		potential glare from surface reflectance. ▪ Particular attention should be paid to the use of lighting having a high intensity or harsher tone (e.g. metal halide lamps). ▪ Lights shall generally be models having precise cut-off range (such as full cut-off optics where available and practicable) and if necessary be fitted with adjustable anti-glare shields.							

Remarks:
1. Des – Design Stage, Con – Construction Stage, Op – Operation, Dec - Decommissioning