

## MATERIALAB CONSULTANTS LIMITED

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# MaterialLab

Report No.: 0165/15/ED/0173

### MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT (Rev. 2)

October 2015

**Client:** China Harbour Engineering Co., Ltd.

**Project:** Contract No. HY/2013/03  
Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities -  
Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities

**Report No.:** 0165/15/ED/0173

Prepared by: Sandra Pang

Reviewed by: Bong Yu

Certified by:

  
\_\_\_\_\_  
Arthur Cheng  
Environmental Team Leader

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Date 12 November 2015  
Our Ref. MCL/ED/0615/2015/C

Ramboll Environ Hong Kong Limited  
(formerly ENVIRON Hong Kong Limited)  
Room 2403, 24/F, Jubilee Centre,  
18 Fenwick Street, Wan Chai,  
Hong Kong

BY HAND

Attn.: Mr. Raymond Dai, IEC

Dear Sir,

**EP Condition 5.4 – Monthly Report for  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Vehicle Clearance Plazas and Ancillary Buildings and Facilities (Contract No. HY/2013/03)**

Pursuant to Condition 5.4 of the Environmental Permit (EP-353/2009/I) for the captioned contract, we are pleased to submit the certified Monthly EM&A Report for October 2015 (Rev.2) for your verification.

Should you require further information, please do not hesitate to contact our Ms Sandra Pang at 3565 4485 or the undersigned at 3565 4115.

Yours faithfully,  
for and on behalf of  
MATERIALAB CONSULTANTS LIMITED



Arthur Cheng  
Environmental Team Leader

AC/sp

Encl.

c.c. AECOM – Mr. P.K. Lee, Mr. W.S. Ng, Ms. Miranda Wong  
CHEC – Mr. Marko Chan

12 November 2015

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.  
The PRE's Office  
5 Ying Hei Road, Tung Chung, Lantau  
Hong Kong

Attention: Mr. Michael Tovey

Dear Sir,

**Re: Agreement No. CE 48/2011 (EP)  
Environmental Project Office for the  
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities,  
and Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2013/03 – HZMB HKBCF – Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities  
Monthly Environmental Monitoring & Audit Report for October 2015**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for October 2015 (Rev. 2) certified by the ET Leader (ET's ref.: "MCL/ED/0615/2015/C" dated 12 November 2015) and its further revision provided to us via e-mail on 12 November 2015.

We are pleased to inform you that we have no adverse comment on the captioned report. We write to verify the captioned submission in accordance with Condition 5.4 of the Environmental Permit No. EP-353/2009/I.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,  
For and on behalf of  
Ramboll Environ Hong Kong Limited



Raymond Dai  
Independent Environmental Checker

c.c.	HyD	Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	MCL	Mr. Arthur Cheng	(By Fax: 2450 8032)
	CHEC	Mr. Johnason Ko	(By Fax: 2887 3014)

Internal: DY, YH, LP, CL, ENPO Site

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**MaterialLab**

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### EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities)" (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to China Harbour Engineering Co. Limited (hereafter referred to as "the Contractor") and MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by the Contractor.

The Contract is part of the "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities" (HZMB HKBCF) Project which is a "Designated Project" under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/I, was issued on 17 July 2015. These documents are available through the EIA Ordinance Register.

Commencement of the Contract took place on 10 April 2015 while the construction works and the EM&A programme of this Contract commenced on 29 August 2015.

MaterialLab Consultants Limited (MCL) has been appointed by the Contractor to implement the Environmental Monitoring & Audit (EM&A) programme for the Contract in accordance with the Updated EM&A Manual for HKBCF (Version 1.0) and will be providing environmental team services for the Contract.

This is the 2<sup>nd</sup> Monthly EM&A Report for the Contract which summaries findings of the EM&A programme during the reporting period from 1 October 2015 to 31 October 2015 (the "reporting period"). The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2010/02 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works" and Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7A and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2010/02 and HY/2011/03. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.

The dates of site inspection during the reporting period are listed below:

Environmental Site Inspection: 2, 8, 15, 23 and 29 October 2015.

### Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7A by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

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There was no marine works conducted during the reporting period and therefore, no water quality impact monitoring result is reported.

There was no marine transportation and operation during the reporting period and therefore, no ecology monitoring result is reported.

### Complaint Log

There was one complaint received in relation to the environmental impact during the reporting period.

Log No.	Environmental Complaint Ref. No.	Date of Complaint Receipt	Description
001	ENPO-C0093	23 October 2015	Air & Noise

After investigation, it was concluded that the complaint was not related to Contract No. HY/2013/03.

There were no notifications of summons or prosecutions received during this reporting period.

### Reporting Changes

There was no reporting change during the reporting period.

### Future Key Issues

The future key issues to be undertaken in the upcoming month are:

- Site Investigation at Portion A1 & J;
- Piling work at A1 & STP, Building at Portion A1 and CUE Construction at Portion B.

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## **1 INTRODUCTION**

### **1.1 Background**

MaterialLab Consultants Limited was commissioned by China Harbour Engineering Co. Limited (also referred to as “the Contractor”) to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for Contract No. HY/2013/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities” (“the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

The Contract is part of Hong Kong–Zhuhai–Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is “Designated Projects”, under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and for which an EIA Report (Register No. AEIAR-145-2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP- 353/2009/I, was issued on 17 July 2015. These documents are available through the EIA Ordinance. The general layout of the Project area is shown in **Appendix A**.

This is the second EM&A report to document the findings of site inspection activities and EM&A programme carried out by the Contractor from 1 October 2015 to 31 October 2015 (reporting period) under Contract No. HY/2013/03 and is submitted to fulfil Condition 5.4 of the EP.

### **1.2 Project Description**

The works to be executed under this Contract include the following major items:

- a. Cargo clearance facilities including kiosks for clearance of good vehicles, customs inspection platforms, X-ray building, etc.;
- b. Passenger related facilities including processing kiosks and examination facilities for private cars and coaches, annexure for examination of accompanying passengers of private cars, etc.;
- c. Accommodation/offices for the facilities (like fire station, police station, buildings for Immigration Department [ImmD], Hong Kong Customs and Excise Department [C&ED], Agriculture, Fisheries and Conservation Department [AFCD], Food and Environmental Hygiene Department [FEHD], Department of Health [DofH] etc.) of the Government departments providing services in connection with the HKBCF;
- d. Provision of transport and miscellaneous facilities inside the HKBCF including public transport interchange (PTI), transport drop-off and pick-up areas, vehicle holding areas, passenger queuing areas, road networks, footbridges, fencing, sewerage and drainage systems, sewage treatment plant and treated effluent disposal facilities, water supply system, building services works, electronic system, and traffic control and information system including traffic control and surveillance system (TCSS), etc.;
- e. Provision of roads connecting the BCF to the Hong Kong Link Road (HKLR), the Tuen Mun – Chek Lap Kok Link (TM-CLKL) and the Hong Kong International Airport (HKIA), except the part of road works in HKIA entrusted to the HKLR project; and
- f. Reprovisioning of the affected HKIA’s facilities, except those affected by the Automated People Mover (APM) system such as the existing east rescue berth.

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### 1.3 Project Organisation

The Project Organisation for Environmental Works is shown in **Appendix B**. The contact person and telephone numbers of key personnel for the captioned project are shown in Table 1.1:

Table 1.1 Contact Persons and Telephone Numbers of Key Personnel

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. Michael Tovey	3985 7470	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	34652899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (China Harbour Engineering Co. Ltd)	Site Agent	Mr. Paul Pui	9125 0700	2512 0427
	Environmental Officer	Mr. Marko Chan	9427 2879	2512 0427
Environmental Team (MaterialLab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	5236 7111	--

The Contract HY/2013/03 has commenced on 10 April 2015. The commencement of construction works and the EM&A programme have commenced on 29 August 2015.

### 1.4 Construction Programme

The construction programme is provided in **Appendix C**.

### 1.5 Construction Works Undertaken during the Reporting Period

The construction works of this Contract commenced on 29 August 2015. During this reporting period, the following major site activities were commenced:

- Site Investigation at Portion A1, A2 & G;
- Piling, Building & Drainage at Portion A1: and
- CUE Construction at Portion B.

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## 2 AIR QUALITY MONITORING

### 2.1 Monitoring Locations

The air quality monitoring works for the Contract are covered by Contract No. HY/2010/02 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Reclamation Works" and Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7A as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract No. HY/2010/02 and HY/2011/03. **Figure 1** shows the locations of air monitoring stations.

Table 2.1 Air Quality Monitoring Location

Air Monitoring Station	Location
AMS6	Dragonair/CNAC (Group) Building (A80)
AMS7A	Chu Kong Air-Sea Union Transportation Co. Ltd.

### 2.2 Monitoring Requirements

The monitoring requirements, equipment, parameters, frequency and duration, methodology, schedule, and meteorological information are described in the monthly EM&A Reports prepared for Contract No. HY/2010/02 and HY/2011/03.

The Action and Limit levels for 1-hr TSP and 24-hr TSP are summarized in Table 2.2.

Table 2.2 Action and Limit Levels for Air Quality

Monitoring Station	Action Level (µg/m³)	Limit Level (µg/m³)
1 hour TSP		
AMS6	360	500
AMS7A	370	
24 hours TSP		
AMS6	173	260
AMS7A	183	

The event and action plan is provided in **Appendix D**.

If exceedance(s) at these stations is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

### 2.3 Monitoring Results

The monitoring results for AMS6 and AMS7A are reported in the monthly EM&A Reports prepared for Contract No. HY/2011/03 and HY/2010/02 respectively.

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7A by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

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### 3 NOISE MONITORING

#### 3.1 Monitoring Locations

The noise monitoring works for the Contract are covered by Contract No. HY/2010/02 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works". The ET of the Contract or another ET of the HZMB project is required to conduct noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2010/02. **Figure 2** shows the locations of noise monitoring stations.

Table 3.1 Construction Noise Monitoring Location

ID No.	Description
NMS2	Seaview Crescent
NMS3B	Site Boundary of Site Office Area at WA2

#### 3.2 Monitoring Requirements

The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2010/02.

The Action and Limit Levels for construction noise are defined in Table 3.2.

Table 3.2 Action and Limit Level for Construction Noise

Monitoring Station	Action Level	Limit Level
<b>For the Time Period 0700-1900 hrs. on Normal Weekdays</b>		
NMS2	When one documented complaint is received	75.0 dB (A) Leq (30 min.)
NMS3B		70.0 dB (A) Leq (30 min.)*

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

\* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination period

#### 3.3 Monitoring Results

The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2010/02. No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2010/02 during the reporting period.

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### 4 WATER QUALITY MONITORING

- 4.1 There was no marine works conducted during the reporting period and therefore, no relevant monitoring result is reported. However, ET of the Contract shall closely monitor on the status of marine works, which shall conduct monitoring when marine works commence in the future.
- 4.2 The ET of the Contract is required to conduct impact water quality monitoring as part of EM&A programme if water quality monitoring is no longer covered by another ET of the HZMB project. The ETL shall review and obtain IEC, ENPO and EPD agreement on the contract specific water quality monitoring works at least a month before the commencement of any marine works.

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### 5 ECOLOGY MONITORING

- 5.1 There was no marine works conducted, no marine transportation and operation impacted to the ecology during the reporting period and therefore, no relevant monitoring result is reported. However, ET of the Contract shall closely monitor on the status of marine works, which shall conduct monitoring when marine works commence in the future.
- 5.2 The ET of the Contract is required to conduct ecology monitoring as part of EM&A programme if ecology monitoring is no longer covered by another ET of the HZMB project. The ETL shall review and obtain IEC, ENPO, AFCD and EPD agreement on the contract specific marine ecology monitoring works at least a month before the commencement of any marine works, marine transportation or operation.

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## **6 ENVIRONMENTAL SITE INSPECTION AND AUDIT**

### **6.1 Site Inspection**

Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.

The joint site audits were conducted on 2, 8, 15, 23 and 29 October 2015 by the representatives of Engineer, Contractor, ET and IEC (IEC for 23 October 2015).

Particular observations during the site inspection and corrective actions undertaken by the Contractor are described below:

#### 17 September 2015

1. CHEC was reminded to provide drip tray for chemical containers at Portion A1. Subsequently, the Contractor provided drip tray for chemical containers at Portion A1. The observation was closed on 2 October 2015.

#### 25 September 2015

1. CHEC was reminded to label all chemical containers at Portion A1 and to provide drip tray for generator on site at Portion A1. Subsequently, the Contractor labelled all chemical containers at Portion A1 and provided drip tray for generator on site at Portion A1. The observation was closed on 2 October 2015.

#### 2 October 2015

1. CHEC was reminded to maintain house keeping practice at Portion A1. Subsequently, the Contractor removed the unwanted construction materials at Portion A1. The observation was closed on 8 October 2015.
2. CHEC was reminded to water the site at least 8 times per day at Portion A1. Subsequently, the Contractor provided recorded records of water spraying for haul road and exposed areas 8 times per day for inspection. Haul road was observed to be wet during follow-up site inspection, and no dusty site activities were observed at Portion A1. The observation was closed on 8 October 2015.

#### 8 October 2015

1. No particular finding.

#### 15 October 2015

1. No particular finding.

#### 23 October 2015

1. No particular finding.

#### 29 October 2015

1. CHEC was reminded that the load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle at CUE – Common Utility Enclosure. Subsequently, the load of dusty materials on a vehicle leaving a construction site was covered entirely by impervious sheeting. The observation was closed on 29 October 2015.

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## **6.2 Advice on the Solid and Liquid Waste Management Status**

The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

The monthly summary of waste flow table is detailed in **Appendix E**.

There was no Inert C & D Materials and 0.024 (in'000m<sup>3</sup>) of Non-inert C & D Wastes and no excavated marine sediment generated in this reporting period. Excavated marine sediment (if any) will be treated using cement solidification/stabilisation (Cement S/S) techniques and will be reused onsite for either backfilling or landscaping (e.g. berm material).

If off-site disposal is required, the excavated marine mud from the land-based works shall be disposed of at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee or other locations as agreed by the Director. The Contractor shall ensure no spilling and overflowing of materials during loading / unloading / transportation is allowed.

The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.

## **6.3 Environmental Licenses and Permits**

The valid environmental licenses and permits during the reporting period are summarized in **Appendix F**.

## **6.4 Implementation Status of Environmental Mitigation Measures**

In response to the site audit findings, the Contractor carried out corrective actions.

A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix G**. All necessary mitigation measures at this stage of works were implemented properly.

## **6.5 Summary of Exceedance of the Environmental Quality Performance Limit**

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7A by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

There was no marine works conducted during the reporting period and therefore, no relevant monitoring result is reported.

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There was no marine transportation and operation during the reporting period and therefore, no ecology monitoring result is reported.

## 6.6 Summary of Complaints, Notification of Summons and Successful Prosecution

There was one complaint received in relation to the environmental impact during the reporting period. The summary of environmental complaints is presented in Table 6.1. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.

Table 6.1: Summary of Environmental Complaints for the Reporting Month

Log No.	Environmental Complaint Ref. No.	Date of Complaint Receipt	Description
001	ENPO-C0093	23 October 2015	Air & Noise

The complaint was received by EPD from a hotel guest living in the Hong Kong SkyCity Marriott Hotel on 23 October 2015 and was referred by EPD to the ENPO. Then the ENPO forwarded the complaint by email to the R.E. (AECOM Asia Co. Ltd.), the Contractor (China Harbour Engineering Co. Ltd.) and the ET (MaterialLab Consultants Ltd.) of Contract No. HY/2013/03 on 23 October 2015.

### 6.6.1 Details of Complaint

One complaint was forwarded by IEC on 23 October 2015, with the information provided by Mr. Alfred Lo from the EPD:

A hotel guest living in the Hong Kong SkyCity Marriott Hotel (1 Sky City Road East, Hong Kong International Airport, Lantau, Hong Kong) complained about the construction noise, dark smoke and construction dust from the construction site of HZMB near SKY CITY ROAD EAST at night time from Monday to Saturday 2200 to 0000 and Sundays and public holiday from 1 October 2015 to 23 October 2015.

### 6.6.2 Investigation of Complaint

Date Complaint Investigated by Environmental Team: 26 October 2015

#### Summary of Investigation

Interview was conducted on 26 October 2015 with Mr. Marko Chan, Environmental Officer of the CHEC and site management. There was no construction work at the said location during complained hours i.e. Mondays to Saturdays 2200-0000, Sundays and Public Holidays from 1 to 23 October 2015. This is consistent with the records in site log book.

The CNP for Contract No. HY/2013/03 including GW-RS0566-15 at Box Culvert D, GW-RS0999-15 at CUE - Common Utility Enclosure; and GW-RS1065-15 at Portion A1 were reviewed and checked.

Contractor's water spraying record for October 2015 indicated watering of the site was carried out from morning hours to afternoon hours.

Furthermore, telephone interview was conducted on 28 October 2015 with Hong Kong SkyCity Marriott Hotel staff (Guest Services Officer (Airport)) who confirmed that they have not received any complaints for the construction site activities of HZMB project in October 2015.

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### Investigation Results

The ET of Contract No. HY/2013/03 concluded that the captioned complaint is not related to the construction site activities of our contract. Nevertheless, the contractor had been reminded to comply with the requirements stipulated in the Environmental Mitigation Implementation Schedule (EMIS) of the EM&A Manual, in particular:

- Air Quality:  
A3 - The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.
- Construction Noise (air borne):  
N1: Use of good site practices to limit noise emissions: machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; and  
N5: sequencing operation of construction plants where practicable.

#### **6.6.3 Follow up status (complaints)**

During weekly site audit on 2, 8, 15 and 23 October 2015, ET confirmed the Contractor had provided workable and effective noise mitigation measures, comprising well-maintained plants without dark smoke emission for the time period between 0700 and 1900 hours on normal weekdays. Mitigation measures implemented during the site works include: 1. Machines and generators that may be in intermittent use were shut down between work periods; 2. Silencers or mufflers on construction equipment were properly fitted and maintained without significant noise generation; 3. Generators were sited as far away from NSRs as possible and practicable; and 4. Material stockpiles, site office and other structures were effectively utilized, where practicable, to screen noise from on-site construction activities. There was no Action and Limit Level exceedance of 24-hr TSP level recorded at station AMS6 and AMS7A by the Environmental Team of Contract No. HY/2011/03 and HY/2010/02 respectively from 1 to 23 October 2015. The Air Quality Monitoring data for October 2015 have been reviewed.

#### **6.6.4 Recommendation to the Contractor**

The Contractor was reminded to:

1. Review control of construction site noise levels, such as the use of temporary noise barriers and avoid noisy construction works during night time;
2. Recommend to use movable noise barrier or full enclosure for noisy operation as far as practicable;
3. Sequencing operation of noisy equipment; and
4. Plant and equipment operated on-site should be well-maintained without dark smoke emission.

#### **6.6.5 Follow up Status (Overall)**

The captioned complaint is not valid and therefore, no additional follow up is needed. However, ET proposed recommendation to contractor, and according to site audit conducted recently, ET confirmed all mitigation measures stipulated in the EMIS had been implemented during site audit on 23 October 2015.

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Report No.: 0165/15/ED/0173

- Air Quality:  
A3 - The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.
- Construction Noise (air borne):  
N1: Use of good site practices to limit noise emissions: machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; and  
N5: Sequencing operation of construction plants where practicable.

There was no notification for summons or prosecutions received in relation to the environmental impact during this reporting period.

Statistics on environmental complaints, notifications of summons and successful prosecutions are provided in **Appendix H**.

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## **7 FUTURE KEY ISSUES**

### **7.1 Construction Programme for the Coming Months**

As informed by the Contractor, the following are the major construction activities anticipated in November 2015:

- Site Investigation at Portion A1 & J;
- Piling work at A1 & STP, Building at Portion A1 and CUE Construction at Portion B.

### **7.2 Environmental Site Inspection Schedule for the Coming Month**

The tentative schedule for weekly site inspections for November 2015 is provided in **Appendix I**.

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## **8 CONCLUSION**

Commencement of the Contract took place on 10 April 2015. The commencement date construction works and the EM&A programme of the Contract commenced on 29 August 2015.

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7A by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

There was no marine works conducted during the reporting period and therefore, no water quality impact monitoring result is reported.

There was no marine transportation and operation during the reporting period and therefore, no ecology monitoring result is reported.

Environmental site inspections were carried out on 2, 8, 15, 23 and 29 October 2015. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

There was one complaint received in relation to the construction noise and dark smoke in the nighttimes and public holidays during the reporting period. After investigation, it was found that the complaint was not related to Contract No. HY/2013/03.

There were no notifications of summons or prosecutions received during the reporting period.

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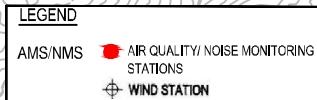
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Report No.: 0165/15/ED/0173

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### **Figure 1**

#### **Air Quality Monitoring Stations**



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---

**MaterialLab**

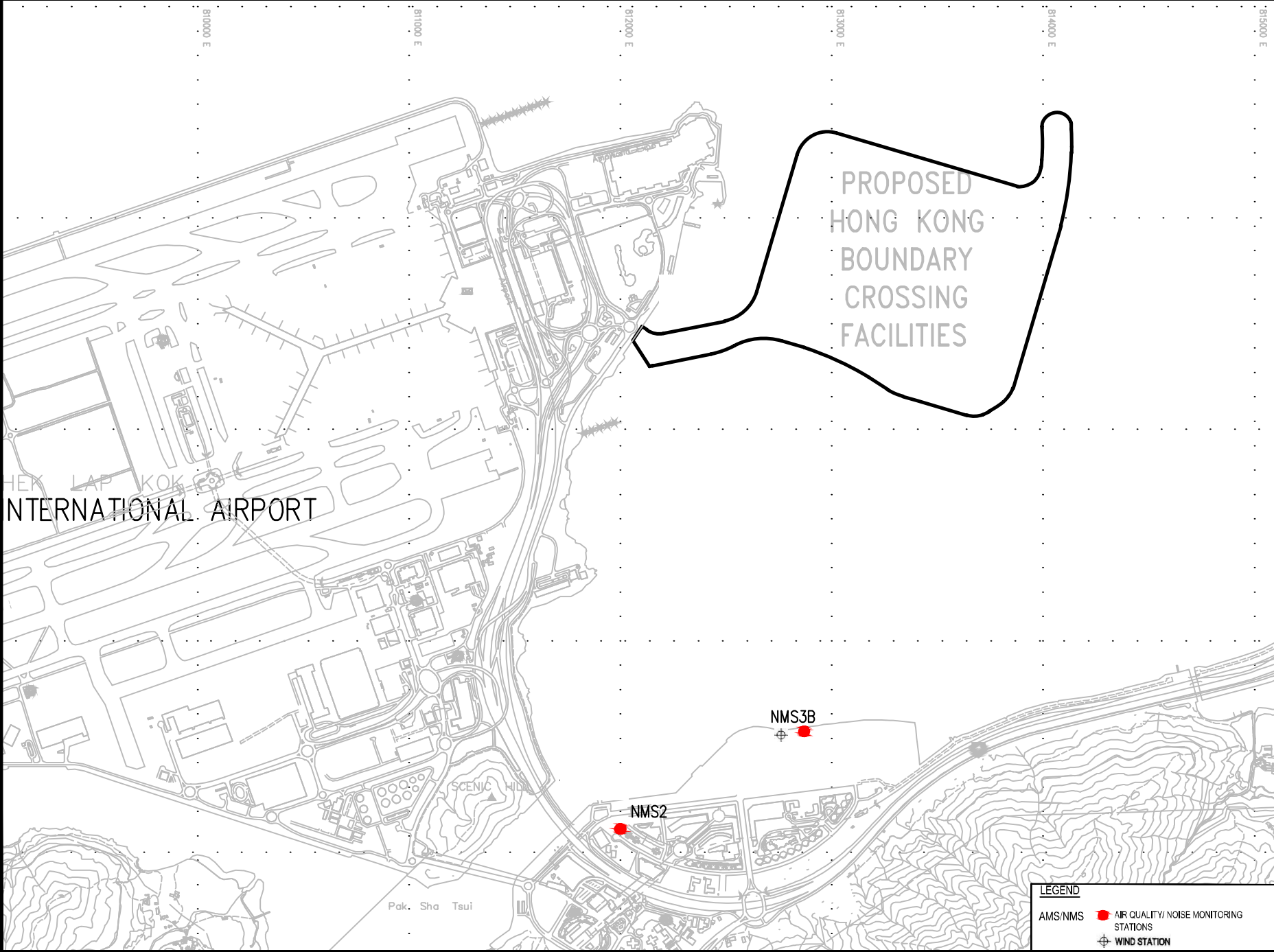
---

Report No.: 0165/15/ED/0173

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### **Figure 2**

#### **Noise Monitoring Stations**



**LEGEND**

AMS/NMS	■ AIR QUALITY/ NOISE MONITORING STATIONS
	⊕ WIND STATION

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---

**MaterialLab**

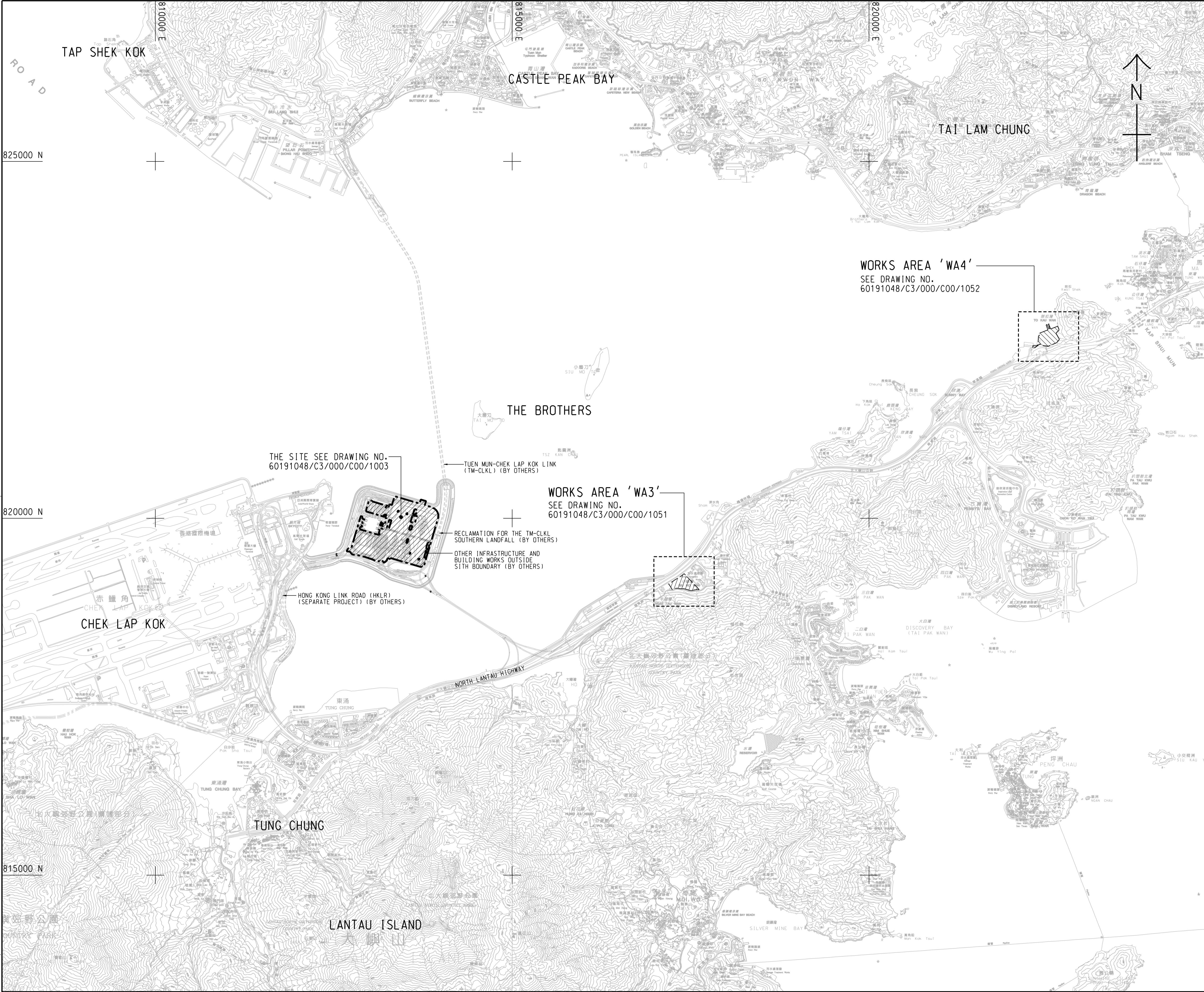
---

Report No.: 0165/15/ED/0173

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### **Appendix A**

#### **Location of Works Areas**



NOTES:

1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
2. DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C3/000/C00/1051 TO 1053.

LEGEND:

- SITE BOUNDARY
- ▨ WORKS AREA

- TENDER DRAWING		BWCW SCI	MAR. 14
REV.	DESCRIPTION	DATE	DATE
01	ISSUED FOR TENDER	01/03/14	01/03/14

**HIGHWAYS DEPARTMENT**  
路政署  
香港大橋工程管理局  
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office  
HONG KONG-ZHUHAI-MACAO BRIDGE  
HONG KONG BOUNDARY CROSSING FACILITIES  
VEHICLE CLEARANCE PLAZAS AND  
ANCILLARY BUILDINGS AND FACILITIES

SITE LOCATION PLAN

**AECOM**  
Rogers Stirk Harbour + Partners  
BURO HAPPOLD ATKINS ADI

**Aedas**

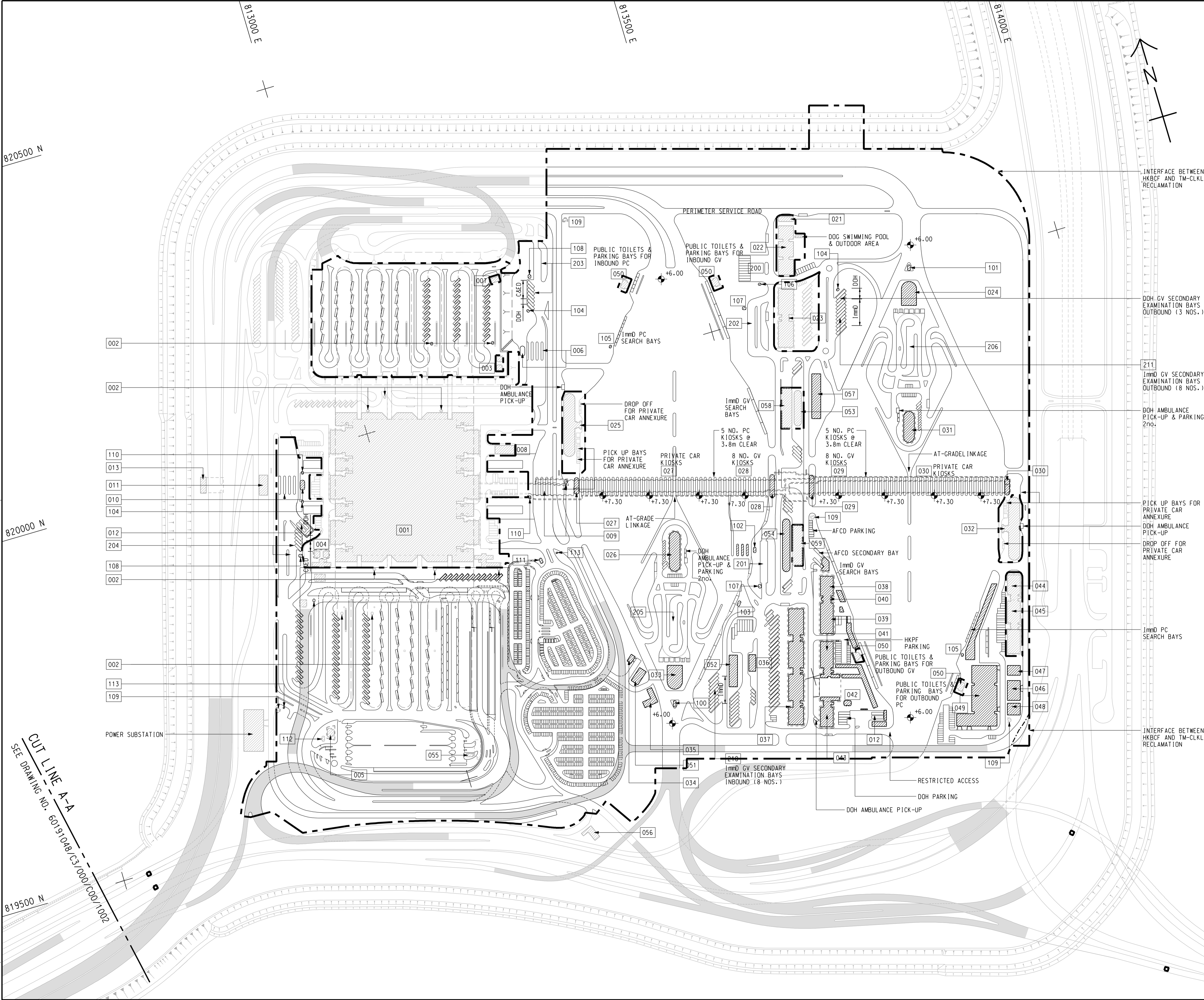
DRG.NO. 60191048/C3/000/C00/1000  
圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2013/03	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	

SCALE 比例	DIMENSIONS ARE IN 尺寸單位
A1 1 : 25000	METRES

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NOTE :

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH  
DRAWING NO. 60191048/C3/000/C00/1003.

LEGEND:

- SITE BOUNDARY
- VIADUCT
- BUILDING/FACILITIES

- TENDER DRAWING		BWCW SCI	MAR. 14
REV.	DESCRIPTION	DATE	
01	ISSUED FOR TENDER	2014/03/14	




路政署  
HIGHWAYS DEPARTMENT

港珠澳大橋香港工程管理局  
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office


HONG KONG-ZHUHAI-MACAO BRIDGE  
HONG KONG BOUNDARY CROSSING FACILITIES  
VEHICLE CLEARANCE PLAZAS AND  
ANCILLARY BUILDINGS AND FACILITIES

Figure 1- 1  
Current Layout Plan

SHEET 1 OF 2




Rogers Stirk Harbour + Partners  
BURO HAPPOLD ATKINS ADI



DRG.NO. 60191048/C3/000/C00/1001  
圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. DIR. APPROVED 批准人
BWCW	HY/2013/03	TKH
DRAWN BY 繪圖	STATUS 階段	
WSY		
SCALE 比例	A1 1 : 2500	
DIMENSIONS ARE IN 尺寸單位	METRES	



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CUT LINE A-A  
SEE DRAWING NO. 60191048/C3/000/C00/1002



# SETTING OUT POINT

POINT	EASTING	NORTHING
401	822488.151	822632.315
402	822640.593	822689.415
403	822515.608	822559.848
404	822610.940	822599.642
405	822629.428	822607.359
406	822526.988	822529.813
407	822618.348	822567.950
408	822542.232	822489.581
409	822584.983	822507.426
410	822606.866	822516.561
411	822560.278	822441.956
412	822602.949	822460.010
413	822621.914	822467.959
414	822624.130	822470.998
415	822651.725	822508.856
416	822644.758	822521.192

822600 N

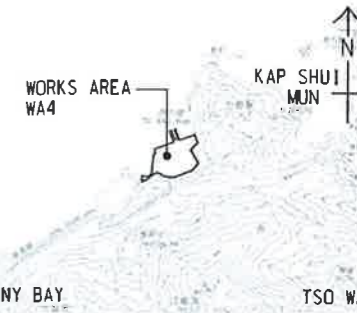
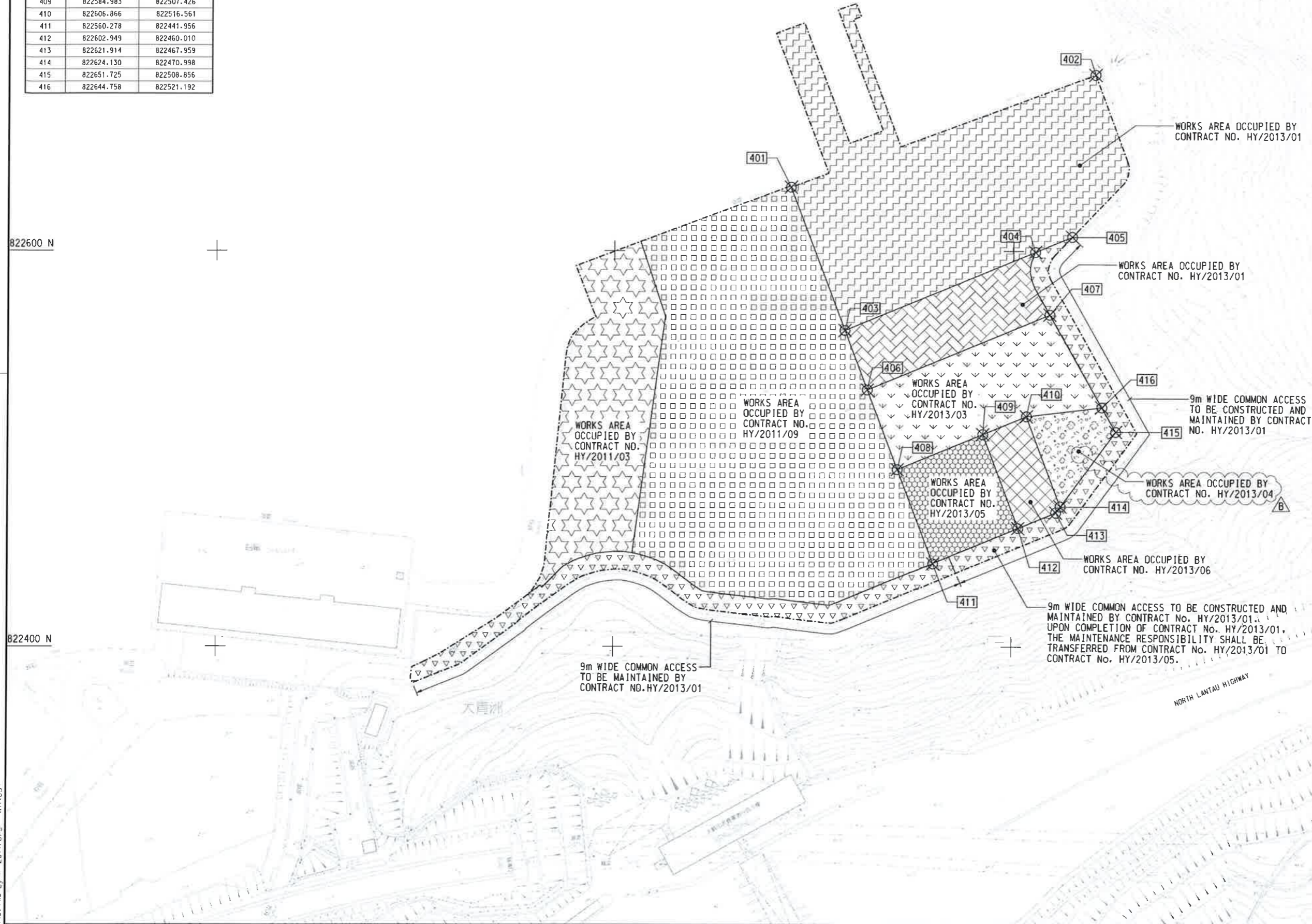
822400 N

Plot File by 2014/5/5 WANGSY

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822400 E

822600 E



LOCATION PLAN  
SCALE 1 : 25000

## NOTES:

- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

## LEGEND:

WORKS AREA BOUNDARY	
PORTION 4.1	
PORTION 4.2	
PORTION 4.3	
PORTION 4.4	
PORTION 4.5	
PORTION 4.6	
PORTION 4.7	
PORTION 4.8	
PORTION 4.9	

**CONTROLLED DOCUMENT**

**FOR CONSTRUCTION**

C	WORKING DRAWING	BWCW SCI MAY.15
B	TENDER ADDENDUM NO. 2	BWCW SCI MAY.14
A	TENDER ADDENDUM NO. 1	BWCW SCI APR.14
-	TENDER DRAWING	BWCW SCI MAR.14
REV. NO.	DESCRIPTION	DATE

**HONG KONG - ZHUHAI - MACAO BRIDGE**  
HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE  
HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE  
HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE  
HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE

WORKS AREA WA4

Rogers Stirk Harbour + Partners  
BURO HAPPOLD ATKINS ADI

DRGNO. 60191048/C3/000/C00/1052C  
圖紙編號

DESIGNED BY BWCW	CONTRACT NO. HY/2013/03	APPROVED BY TKH
DRAWN BY WSY	STATUS WORKING DRAWING	
SCALE A1 1 : 1000	DIMENSIONS ARE IN METRES	
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### **Appendix B**

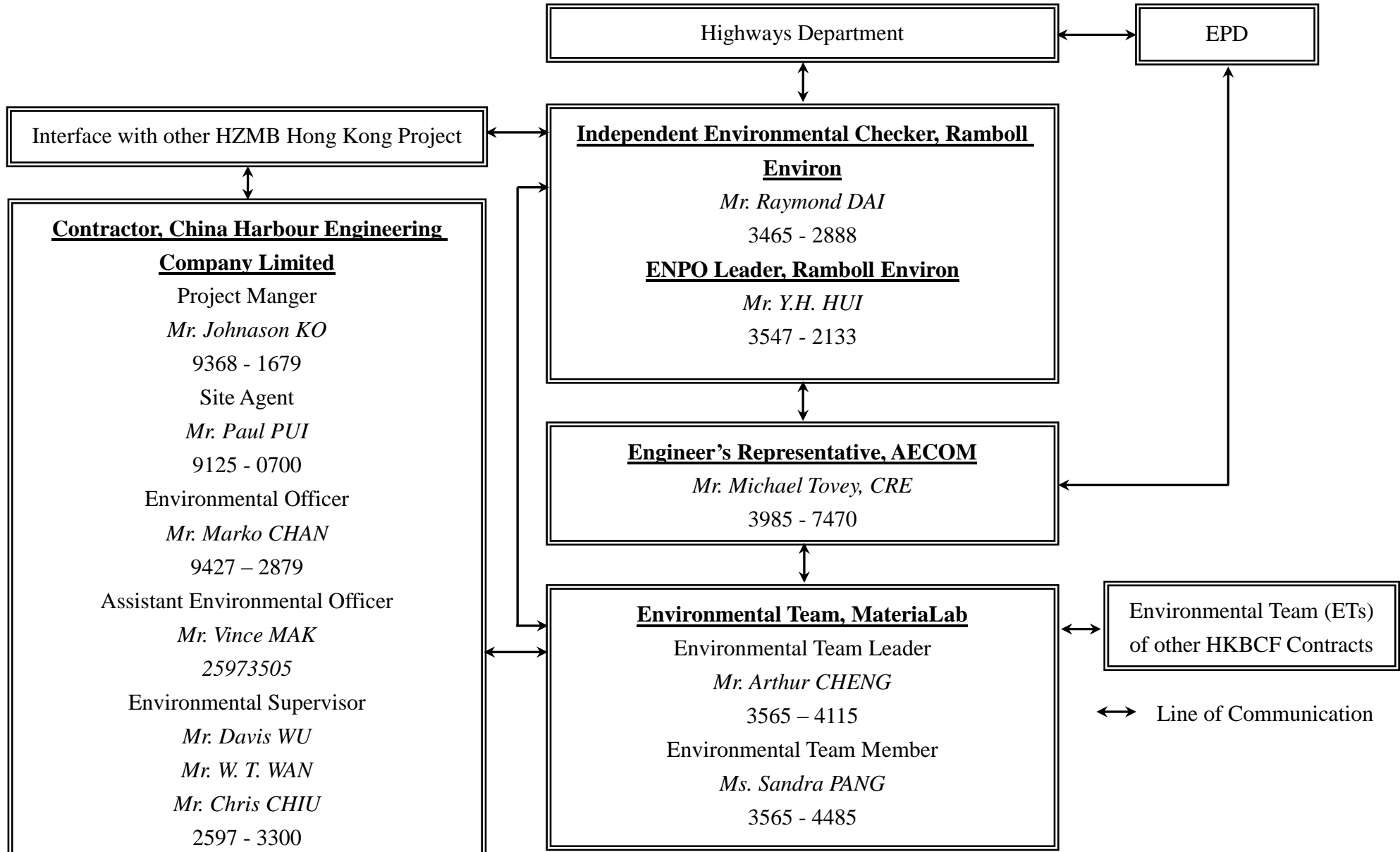
#### **Project Organisation for Environmental Works**

# CHINA HARBOUR ENGINEERING COMPANY LIMITED



Contract No. HY/2013/03 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing  
Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities

## Projects Organization for Environmental Works



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### **Appendix C**

#### **Construction Programme**

HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities								31-Oct-15				
Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2015			2016	
								Oct	Nov	Dec	Jan	Feb
HKBCF - VCP & Ancillary Buildings and Facilities, Rev. 3 UD												
CONTRACT DATES												
Site Access & Possession												
Possession of Portion of Site												
A0040	Possession of Portion C (<=100 days)	0	0	0%		31-Oct-15*	-104	◆ Possession of Portion C (<=100 days)				
A0050	Possession of Portion D (<=220 days)	0	0	0%		15-Nov-15*	0	◆ Possession of Portion D (<=220 days)				
A0070	Possession of Portion F (<=220 days)	0	0	0%		15-Nov-15*	0	◆ Possession of Portion F (<=220 days)				
A0080	Possession of Portion G (<=225 days)	0	0	0%		20-Nov-15*	0	◆ Possession of Portion G (<=225 days)				
A0090	Possession of Portion H1 (<=273 days)	0	0	0%		07-Jan-16*	0	◆ Possession of Portion H1 (<=273 days)				
A0100	Possession of Portion H2 (<=273 days)	0	0	0%		07-Jan-16*	0	◆ Possession of Portion H2 (<=273 days)				
Section/Stage Subject to Excision												
A0710	Contract Date for Section IA (273 days, latest date when the Engineer may order)	0	0	0%	07-Jan-16*		0	◆ Contract Date for Section IA (273 days, latest date when the Engineer may order)				
A0720	Contract Date for Section IB (273 days, latest date when the Engineer may order)	0	0	0%	07-Jan-16*		0	◆ Contract Date for Section IB (273 days, latest date when the Engineer may order)				
A0740	Contract Date for Section IIB (100 days, latest date when the Engineer may order)	0	0	0%	31-Oct-15*		-105	◆ Contract Date for Section IIB (100 days, latest date when the Engineer may order)				
A0760	Contract Date for Section III (273 days, latest date when the Engineer may order)	0	0	0%	07-Jan-16*		0	◆ Contract Date for Section III (273 days, latest date when the Engineer may order)				
A0810	Contract Date for Section IX (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Section IX (270 days, latest date when the Engineer may order)				
A0820	Contract Date for Section X (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Section X (270 days, latest date when the Engineer may order)				
A0830	Contract Date for Stage 20 (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Stage 20 (270 days, latest date when the Engineer may order)				
A0840	Contract Date for Stage 21 (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Stage 21 (270 days, latest date when the Engineer may order)				
A0850	Contract Date for Stage 22 (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Stage 22 (270 days, latest date when the Engineer may order)				
A0860	Contract Date for Stage 23 (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Stage 23 (270 days, latest date when the Engineer may order)				
A0870	Contract Date for Stage 24 (270 days, latest date when the Engineer may order)	0	0	0%	04-Jan-16*		0	◆ Contract Date for Stage 24 (270 days, latest date when the Engineer may order)				
PORTION A1												
Portion A1 Structures												
Bridge A9												
Bored Pile												
S91010	Predrill SI, 10 nos.	61	61	0%	09-Nov-15	21-Jan-16	-73	■				
S91015	Bored pile for P904, A905, 4 nos.	58	58	0%	13-Jan-16	23-Mar-16	-73	■				
Box Culvert D												
Bored Pile												
SD0040	Bored Piling for Box Culvert D 45 nr.	128	127	1%	05-Oct-15 A	27-Aug-16	-73	■				
047 - Fresh Water Pumping Station, Portion A1 & A2												
A04700	Predrill SI, 4 nos.	12	12	0%	24-Nov-15	07-Dec-15	-55	■				
049 - Sewage Treatment Plant, Portion A1 & A2												
A04910	Predrill SI, 36 nos.	36	1	97.22%	22-Sep-15 A	07-Nov-15	-74	■				
A04920	Predrill SI, 3 nos.	6	6	0%	09-Nov-15	14-Nov-15	-74	■				
A04930	Approval of Rockhead & Foundation	14	14	0%	16-Nov-15	01-Dec-15	-74	■				
A04940	Bored Piling (39 Nr.)	127	127	0%	02-Dec-15	10-May-16	-74	■				
<div><div></div> Actual Work</div> <div><div></div> Remaining Work</div> <div><div></div> Critical</div> <div><div>◆</div> Milestone</div>		THREE MONTH ROLLING PROGRAMME (IWP REV.3) VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES Page 1 of 6						Date	Revision		Checked	Approved
								31-Aug-15	Initial Works Programme Rev. 2, 3MRP		ZJ	
								30-Sep-15	Initial Works Programme Rev. 3, 3MRP		ZJ	
								31-Oct-15	Initial Works Programme Rev. 3, 3MRP		ZJ	

HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities								31-Oct-15				
Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2015			2016	
								Oct	Nov	Dec	Jan	Feb
A04950	Sheet Piling as ELS1 for Equalization Tanks	12	12	0%	30-Jan-16	16-Feb-16	-74					
Portion A1 Buildings												
012 - DOH Disinsection Area and Store Room 1, at Portion A1												
A01210	Excavation & Blinding	10	10	0%	30-Nov-15	10-Dec-15	-76					
A01220	Raft Foundation	20	20	0%	11-Dec-15	06-Jan-16	-76					
A01240	Supersturcture	35	35	0%	07-Jan-16	19-Feb-16	-76					
036 - Weigh Station												
A03620	Raft Foundation	50	0	100%	22-Sep-15 A	05-Oct-15 A						
A03630	Super Structure	90	36	60%	06-Oct-15 A	27-Jun-16	29					
037 C&ED Tower Cum Inbound Cargo Examination Building (Portion A1 & B)												
A03710	Excavation	14	7	50%	07-Oct-15 A	07-Nov-15	-92					
A03720	Substructure	50	40	20%	13-Oct-15 A	24-Dec-15	-92					
A03730	Super Structure	110	110	0%	28-Dec-15	13-May-16	-92					
041 Fire Station Cum Ambulance Deport												
A04100	Excavation + Blinding	14	14	0%	31-Oct-15	16-Nov-15	-22					
A04110	Substructure	84	84	0%	28-Dec-15	12-Apr-16	-55					
042 Drill Tower												
A04210	Driven Piles 16 Nr.	15	15	0%	08-Dec-15	24-Dec-15	-55					
A04220	Piling Test	10	10	0%	28-Dec-15	08-Jan-16	-14					
A04230	Excavation	14	14	0%	09-Jan-16	25-Jan-16	-14					
A04240	Substructure	35	35	0%	26-Jan-16	09-Mar-16	-14					
052 - Transforms (Zone 4)												
A05220	Supersturcture	64	29	54%	21-Sep-15 A	04-Dec-15	-45					
A05230	Fitting out works in Tx Room to CLP (KD4)	55	55	0%	04-Dec-15	13-Feb-16	-45					
A05240	BS Installation (KD9)	66	66	0%	04-Dec-15	26-Feb-16	23					
A05250	Finishing (KD10)	87	87	0%	04-Dec-15	22-Mar-16	2					
105 IMMD Guard Booth, Portion A1												
B10510	Excavation + Blinding	5	5	0%	11-Dec-15	16-Dec-15	-25					
Facade Envelop Structure Installation												
B10580	Shop Drawing Submission and Approval	30	30	0%	04-Jan-16	06-Feb-16	17					
External Works for Portion A1												
Drainage Works												
B00010	Initial Survey	6	6	0%	17-Aug-15 A	06-Nov-15	-109					
SG0030	Sewerage (1063m & 30MHs)	300	300	0%	19-Dec-15	23-Dec-16	-45					
PORTION A2												
Portion A2 Structures												
048 - Reclaimed Water Pumping Station, Portion A2												
A04810	Predrill SI, 4 nos.	13	13	0%	09-Nov-15	23-Nov-15	-74					
A04820	Piling 4nr.	52	52	0%	08-Dec-15	12-Feb-16	-74					
External Works for Portion A2												
Drainage Works												
B00020	Initial Survey	6	6	0%	31-Oct-15	06-Nov-15	-106					
PORTION B												
Portion B Structures												
<div><div></div> Actual Work</div> <div><div></div> Remaining Work</div> <div><div></div> Critical</div> <div><div></div> Milestone</div>		THREE MONTH ROLLING PROGRAMME (IWP REV.3) VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES Page 2 of 6						Date	Revision		Checked	Approved
								31-Aug-15	Initial Works Programme Rev. 2, 3MRP		ZJ	
								30-Sep-15	Initial Works Programme Rev. 3, 3MRP		ZJ	
								31-Oct-15	Initial Works Programme Rev. 3, 3MRP		ZJ	

HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities								31-Oct-15				
Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2015			2016	
								Oct	Nov	Dec	Jan	Feb
<b>027 - Staff Subway</b>												
C02710	ELS + Blind (Seg. 8-19) (12 Bay)	47	47	0%	27-Oct-15 A	08-Apr-16	-82					
<b>028 - Staff Subway</b>												
C02810	ELS + Blind (Seg. 28-36 (12 Bay)	42	42	0%	14-Nov-15	05-Jan-16	-57					
C02820	Seg. 20-27 Construction - Base Slab	28	28	0%	31-Dec-15	02-Feb-16	-57					
C02830	Seg. 20-27 Construction - Wall + Top Slab	37	37	0%	25-Jan-16	10-Mar-16	-57					
<b>Portion B Buildings</b>												
<b>027/028 Inbound Kiosks &amp; 029 Outbound Kiosks</b>												
A02700	Submission & Approval for Steel Works	50	50	0%	31-Oct-15	30-Dec-15	-38					
A02710	Pre-fabrication for the Steel Kiosks	100	100	0%	31-Dec-15	05-May-16	-38					
<b>027/028 Inbound Kiosks &amp; 029 Outbound Kiosks, Section IX, Subject to Excision</b>												
B02730	Submission & Approval for Steel Works	75	75	0%	04-Jan-16	07-Apr-16	5					
<b>026 Inbound IMMD and DOH Secondary Screening Building</b>												
A02610	Excavation + Blinding	10	10	0%	26-Nov-15	07-Dec-15	-79					
<b>054 Inbound Fixed X-ray Building</b>												
A05420	Excavation + Blinding	10	10	0%	31-Oct-15	11-Nov-15	-85					
A05430	Substructure	50	50	0%	12-Nov-15	12-Jan-16	-85					
A05440	Super Structure for Tx Room	60	60	0%	13-Jan-16	29-Mar-16	-85					
<b>038 AFCD Office</b>												
A03810	Excavation + Blinding	7	7	0%	26-Nov-15	03-Dec-15	-18					
<b>039 Police Main Building</b>												
A03910	Excavation + Blinding	12	12	0%	31-Oct-15	13-Nov-15	-85					
A03920	Substructure	70	70	0%	14-Nov-15	06-Feb-16	-85					
<b>040 Incident Control Tower</b>												
A04010	Excavation + Blinding	10	10	0%	14-Nov-15	25-Nov-15	-25					
<b>Glass Wall</b>												
C04010	Shop Drawing Submission and Approval	30	30	0%	31-Oct-15	04-Dec-15	35					
C04020	Fabrication of Glass Wall	60	60	0%	05-Dec-15	19-Feb-16	35					
<b>102 HKPF UVSS Monitor Room</b>												
A10200	Excavation + Blinding	7	7	0%	26-Nov-15	03-Dec-15	75					
<b>Metal Canopy and Roof Installation</b>												
B10210	Shop Drawing Submission and Approval	30	30	0%	22-Dec-15	28-Jan-16	55					
B10212	Fabrication of MC/R	60	60	0%	29-Jan-16	15-Apr-16	55					
<b>103 Police Inspection Post</b>												
A10310	Excavation + Blinding	5	5	0%	20-Nov-15	25-Nov-15	-79					
<b>HPL Composite Panel Cladding System</b>												
B10310	Shop Drawing Submission and Approval	30	30	0%	31-Oct-15	04-Dec-15	167					
B10320	Fabrication of HPL Cladding	60	60	0%	05-Dec-15	19-Feb-16	167					
<b>057 Transformers (Zone 2)</b>												
A05710	Excavation + Blinding	10	10	0%	31-Oct-15	11-Nov-15	-85					
A05720	Raft Foundation	52	52	0%	12-Nov-15	14-Jan-16	-85					
A05730	Supersturcture	65	65	0%	15-Jan-16	07-Apr-16	-85					
<b>107 - C&amp;ED Mobile X-ray Operation Office (Cargo), Portion B</b>												
C10710	Excavation + Blinding	7	7	0%	12-Nov-15	19-Nov-15	-85					
C10720	Raft Foundation	32	32	0%	20-Nov-15	29-Dec-15	-85					
C10730	Superstructure (Roof Slabs)	62	62	0%	30-Dec-15	15-Mar-16	-85					
<b>113 - Field Kiosk for Access Control, Portion B</b>												
B11310	Excavation + Blinding	7	7	0%	08-Dec-15	15-Dec-15	-79					
B11320	Raft Foundation	32	32	0%	16-Dec-15	25-Jan-16	-79					
Actual Work		<b>THREE MONTH ROLLING PROGRAMME (IWP REV.3)</b> <b>VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES</b> Page 3 of 6						Date	Revision		Checked	Approved
Remaining Work								31-Aug-15	Initial Works Programme Rev. 2, 3MRP		ZJ	
Critical								30-Sep-15	Initial Works Programme Rev. 3, 3MRP		ZJ	
Milestone								31-Oct-15	Initial Works Programme Rev. 3, 3MRP		ZJ	

HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities								31-Oct-15				
Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2015			2016	
								Oct	Nov	Dec	Jan	Feb
B11330	Superstructure (Roof Beams & Slabs)	60	60	0%	26-Jan-16	12-Apr-16	-79					
External Works for Portion B												
Drainage Works												
B00030	Initial Survey	12	12	0%	31-Oct-15	13-Nov-15	-85					
SG1540	Drainage Works (7812m & 168MHs)	360	360	0%	14-Nov-15	02-Feb-17	-80					
SG3580	Sewerage (1175m & 32MHs)	360	360	0%	14-Nov-15	02-Feb-17	-80					
Waterpipe Laying												
SW1550	Fresh Water Main Laying (1972m)	360	360	0%	13-Jan-16	30-Mar-17	-80					
SW1560	Flushing Water Main Laying (1851m)	360	360	0%	13-Jan-16	30-Mar-17	-80					
Duct Laying for Utilities/Telecom Cabling, TCSS & Lighting												
SU5300	Duct Laying for Utilities/Telecom Cabling	360	360	0%	13-Jan-16	30-Mar-17	-80					
Sign Gantry ADS 306A & ADS 306B												
SS0070	Sign Gantry ADS 306B SI Drilling, 2 Nr.	6	6	0%	16-Dec-15	22-Dec-15	-46					
SS0110	Sign Gantry ADS306A SI Drilling, 2 Nr.	7	7	0%	08-Dec-15	15-Dec-15	-46					
SS5230	Submission and approval for Sign Gantry	180	180	0%	31-Oct-15	11-Jun-16	-58					
PORTION C												
Portion C Buildings												
010 - Inbound Coach Kiosk & Staff Subway Entrance												
A01010	Substructure and Staircase Construction	60	60	0%	14-Nov-15	26-Jan-16	-85					
A01020	Kiosk Superstructure	100	100	0%	27-Jan-16	01-Jun-16	-59					
009 - Shuttle Bus Kiosk & Staff Subway Entrance												
A00910	ELS + Blinding (Seg. 1-7) (7 bay)	42	42	0%	14-Nov-15	05-Jan-16	-82					
A00920	Constructing Base Slab of Seg. 1-7	28	28	0%	31-Dec-15	02-Feb-16	-82					
A00930	Constructing Wall + Top Slab of Seg. 1-7	37	37	0%	25-Jan-16	10-Mar-16	-82					
012 - DOH Disinsection Area and Store Room 1, at Portion C												
B01210	Excavation & Blinding	10	10	0%	12-Nov-15	23-Nov-15	-76					
104 - DOH Secondary Screening Station, at Portion C												
A10420	Excavation & Blinding	5	5	0%	24-Nov-15	28-Nov-15	-76					
108 C&ED Mobile X-ray Machine Operation Office, Portion C												
A10805	Excavation & Blinding	5	5	0%	06-Nov-15	11-Nov-15	-76					
HPL Composite Panel Cladding System												
A10800	Shop Drawing Submission and Approval	30	30	0%	10-Dec-15	16-Jan-16	-47					
A10815	Fabrication of HPL Cladding	60	60	0%	18-Jan-16	02-Apr-16	-47					
110 IMMD Guard Booth (Type 2)												
A11020	Excavation & Blinding	5	5	0%	30-Nov-15	04-Dec-15	160					
111 Field Kiosk for Carpark Operator												
A11120	Excavation & Blinding	5	5	0%	16-Dec-15	21-Dec-15	92					
113 - Field Kiosk for Access Control, Portion C												
C11310	Excavation & Blinding	5	5	0%	31-Oct-15	05-Nov-15	-85					
C11320	Raft Foundation	30	30	0%	06-Nov-15	10-Dec-15	-85					
C11330	Superstructure (Roof Beams & Slabs)	60	60	0%	11-Dec-15	25-Feb-16	-85					
External Works for Portion C												
Drainage Works												
B00040	Initial Survey	12	12	0%	31-Oct-15	13-Nov-15	-82					
SG2400	Drainage Works (1695m & 32MHs)	150	150	0%	27-Jan-16	01-Aug-16	-85					
SG3610	Sewerage (186m & 4MHs)	150	150	0%	27-Jan-16	01-Aug-16	-64					
PORTION D												
Portion D Building												
113 - Field Kiosk for Access Control, Portion D												
<div><div></div> Actual Work</div> <div><div></div> Remaining Work</div> <div><div></div> Critical</div> <div><div></div> Milestone</div>		THREE MONTH ROLLING PROGRAMME (IWP REV.3) VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES Page 4 of 6						Date	Revision		Checked	Approved
								31-Aug-15	Initial Works Programme Rev. 2, 3MRP		ZJ	
								30-Sep-15	Initial Works Programme Rev. 3, 3MRP		ZJ	
								31-Oct-15	Initial Works Programme Rev. 3, 3MRP		ZJ	

HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities								31-Oct-15				
Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2015			2016	
								Oct	Nov	Dec	Jan	Feb
C11350	Excavation & Blinding	5	5	0%	05-Dec-15	10-Dec-15	180					
External Works for Portion D												
Drainage Works												
B00050	Initial Survey	6	6	0%	16-Nov-15	21-Nov-15	85					
SG3640	Drainage Works (555m & 13MHs)	100	100	0%	23-Nov-15	24-Mar-16	85					
SG3760	Sewerage (121m & 6MHs)	100	100	0%	23-Nov-15	24-Mar-16	85					
Waterpipe Laying												
SW3650	Fresh Water Main Laying (108m)	100	100	0%	23-Jan-16	28-May-16	85					
Duct Laying for Utilities/Telecom Cabling, TCSS & Lighting												
SU5340	Duct Laying for Utilities/Telecom Cabling	100	100	0%	23-Jan-16	28-May-16	109					
SU5350	Duct Laying for TCSS & Lighting	100	100	0%	23-Jan-16	28-May-16	109					
PORTION E												
External Works for Portion E												
Drainage Works												
B00060	Initial Survey	6	6	0%	31-Oct-15	06-Nov-15	111					
PORTION F												
External Works for Portion F												
Drainage Works												
B00070	Initial Survey	6	6	0%	16-Nov-15	21-Nov-15	277					
PORTION G, H1 & H2												
Portion G Structures												
Box Culvert C												
Steel H Pile												
SC0210	Predrill SI for Box Culvert C, 11 Nr.	66	0	100%	01-Sep-15 A	31-Oct-15 A						
SC0220	Predrill SI for Box Culvert C, 12 Nr.	36	0	100%	02-Oct-15 A	31-Oct-15 A						
SC0230	Predrill SI for Box Culvert C 19 Nr.	30	30	0%	23-Dec-15	29-Jan-16	66					
Bridge A1												
Bored Pile												
S10110	Predrill SI, 10 nos.	30	30	0%	05-Dec-15	12-Jan-16	85					
Bridge A4												
Bored Pile												
S42310	Predrill SI, (4 nos.)	10	0	100%	02-Oct-15 A	26-Oct-15 A						
S42320	Bore pile 4 Nr.	33	33	0%	23-Dec-15	02-Feb-16	-2					
Bridge A5												
Bored Pile												
S52610	Predrill SI, 15 nos.	18	0	100%	22-Sep-15 A	31-Oct-15 A						
S52620	Predrill SI for others 4 nos.	6	6	0%	05-Dec-15	11-Dec-15	29					
S52630	Bore piling for 19 Nr.	60	60	0%	05-Dec-15	19-Feb-16	18					
S52640	Pile Testing for P504, P505	7	7	0%	16-Jan-16	23-Jan-16	18					
Pile Cap												
S52710	Cap for P504, P505	30	30	0%	25-Jan-16	02-Mar-16	18					
Bridge A6												
Bored Pile												
S63510	Bore pile for P606, A607/A711, 6 Nr.	46	46	0%	23-Dec-15	20-Feb-16	-46					
Bridge A7a, A7b, A7c												

Actual Work

Remaining Work

Critical

Milestone

THREE MONTH ROLLING PROGRAMME (IWP REV.3)

VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES

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Date	Revision	Checked	Approved
31-Aug-15	Initial Works Programme Rev. 2, 3MRP	ZJ	
30-Sep-15	Initial Works Programme Rev. 3, 3MRP	ZJ	
31-Oct-15	Initial Works Programme Rev. 3, 3MRP	ZJ	

HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities								31-Oct-15				
Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2015			2016	
								Oct	Nov	Dec	Jan	Feb
<b>Bored Pile</b>												
S74150	Predrill SI for P701, P702 - P705, 10 Nr.	30	30	0%	12-Dec-15	19-Jan-16	29					
<b>Bridge A8</b>												
<b>Bored Pile</b>												
S86110	Predrill SI for P803, P804 4 nos.	25	6	75%	30-Jul-15 A	29-Jan-16	35					
S86120	Predrill SI for P802 2 nos.	13	13	0%	05-Dec-15	19-Dec-15	66					
<b>Portion G Buildings</b>												
<b>033 Inbound Private Car Exam Building</b>												
A03300	Excavation + Blinding	10	10	0%	03-Dec-15	14-Dec-15	102					
<b>Glass Canopy Installation</b>												
B03300	Shop Drawing Submission and Approval	30	30	0%	11-Jan-16	17-Feb-16	119					
<b>Aluminium Metal Canopy</b>												
B03310	Shop Drawing Submission and Approval	30	30	0%	11-Jan-16	17-Feb-16	155					
<b>035 - Sewage Pumping Station, Portion G</b>												
A03525	Approval of Rockhead & Founding	14	14	0%	05-Dec-15	21-Dec-15	19					
<b>051 Transformers (Zone 5)</b>												
A05100	Excavation + Blinding	5	5	0%	21-Nov-15	26-Nov-15	0					
A05110	Substructure	15	15	0%	27-Nov-15	14-Dec-15	0					
A05140	Super Structure	35	35	0%	15-Dec-15	27-Jan-16	0					
A05150	Finishing	60	60	0%	28-Jan-16	14-Apr-16	121					
A05160	BS + E&M for Tx Room to CLP (Stage 3A)	59	59	0%	28-Jan-16	13-Apr-16	0					
<b>100 Inbound Traffic Control Kiosk</b>												
A10000	Excavation + Blinding	5	5	0%	27-Nov-15	02-Dec-15	45					
A10010	Raft Foundation	15	15	0%	28-Jan-16	17-Feb-16	0					
<b>HPL Composite Panel Cladding System</b>												
B10010	Shop Drawing Submission and Approval	30	30	0%	21-Nov-15	28-Dec-15	69					
B10015	Fabrication of F/C System	60	60	0%	29-Dec-15	11-Mar-16	69					
<b>External Works for Portion G, H1 &amp; H2</b>												
<b>Drainage Works</b>												
B00080	Initial Survey	12	12	0%	21-Nov-15	04-Dec-15	0					
<b>Sign Gantry DS40, DS41 &amp; DS75</b>												
SS0010	Sign Gantry DS40 SI Drilling, 3 Nr.	13	13	0%	16-Jan-16	30-Jan-16	64					
SS0030	Sign Gantry DS41 SI Drilling, 1 Nr.	13	13	0%	16-Jan-16	30-Jan-16	64					
SS0050	Sign Gantry DS75 SI Drilling, 2 Nr.	7	7	0%	08-Jan-16	15-Jan-16	64					
SS0170	Submission and approval for Sign Gantry	90	90	0%	21-Nov-15	11-Mar-16	14					
<b>PORTION J</b>												
<b>Portion J Structure</b>												
<b>030 Outbound Private Car &amp; GV Kiosks</b>												
A03010	Submission & Approval for Steel Works	60	60	0%	16-Dec-15	01-Mar-16	4					
<b>030 Outbound Kiosks, Section IX, Subject to Excision</b>												
C03010	Submission & Approval for Steel Works	100	100	0%	04-Jan-16	07-May-16	0					
<b>External Works for Portion J</b>												
<b>Sign Gantry DS104</b>												
SS0130	Sign Gantry DS104 SI Drilling, 2 Nr.	12	12	0%	15-Jan-16	28-Jan-16	186					

<div></div> Actual Work	<div>THREE MONTH ROLLING PROGRAMME (IWP REV.3)</div> <div>VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES</div> <div>Page 6 of 6</div>	Date	Revision	Checked	Approved
<div></div> Remaining Work		31-Aug-15	Initial Works Programme Rev. 2, 3MRP	ZJ	
<div></div> Critical		30-Sep-15	Initial Works Programme Rev. 3, 3MRP	ZJ	
<div></div> Milestone		31-Oct-15	Initial Works Programme Rev. 3, 3MRP	ZJ	

## **MATERIALAB CONSULTANTS LIMITED**

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The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The "Material" part is in a lighter weight, and the "Lab" part is in a bolder weight. The logo is set against a background of two thick horizontal black bars, one above and one below the text.

Report No.: 0165/15/ED/0173

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### **Appendix D**

#### **Event / Action Plan**

## Appendix D –

### Event / Action Plan for Air Quality and Noise Monitoring

#### Event / Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
<b>Action Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures;  2. Inform IEC and ER;  3. Repeat measurement to confirm finding;  4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET;  2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice;  2. Amend working methods if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
<b>Limit Level</b>				
1.  Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures;  2. Inform ER, Contractor and EPD;  3. Repeat measurement to confirm finding;  4. Increase monitoring frequency to daily;  5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET;  2. Check Contractor's working method;  3. Discuss with ET and Contractor on possible remedial measures;  4. Advise the ER on the effectiveness of the proposed remedial measures;  5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing;  2. Notify Contractor;  3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance;  2. Submit proposals for remedial actions to IEC within 3 working days of notification;  3. Implement the agreed proposals;  4. Amend proposal if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 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; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedances abated.

# Event / Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>3. Report the results of investigation to the IEC,ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>

Event	Action			
	ET	IEC	ER	Contractor
Limit Level	1. Inform IEC, ER, EPD and Contractor; 2. Identify source; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 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; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

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**MaterialLab**

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Report No.: 0165/15/ED/0173

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### **Appendix E**

#### **Waste Flow Table**



### Monthly Summary of Waste Flow Table for 2015 (year)

Name of Person completing the Record: Marko Chan

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(see Note 1) (in '000m <sup>3</sup> )						(see Note 2) (in '000 Kg)		
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m <sup>3</sup> )
Jan										
Feb										
Mar										
Apr	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0
Jun	0.003	0	0	0	0.003	0	0	0	0	0.063
Jul	0.402	0	0	0	0.402	0	0	0	0	0.029
Aug	0.100	0	0	0	0.100	0	0	0	0	0.044
Sept	0	0	0	0	0	0	0	0	0	0.034
Oct	0	0	0	0	0	0	0	0	0	0.024
Nov										
Dec										
Total	0.505	0	0	0	0.505	0	0	0	0	0.194

Notes:

(1) Broken concrete for recycling into aggregates.

(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

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### **Appendix F**

#### **Environmental Licenses and Permits**

## Appendix F - Environmental Permit / Licences Summary for Contract No. HY/2013/03

(update: 02/11/2015)

Item	Permit/Licence Registration	Permit No.	Work Area	Application Date	Issue Date	Valid Date		Status	Remark
						From	To		
1	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/I	HKBCF	30-Jun-15	17-Jul-15	17-Jul-15	Nil	Valid	
2	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387703	Main Site Area	02-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
3	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387735	Works Area WA3	02-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
4	Billing A/C for Construction Waste Disposal Pursuant to Section 6 & 9 of the Waste Disposal (Charges for Disposal of Construction waste) Regulation	A/C No. 7022228	Main Site Area, WA3 & 4	14-Apr-15	06-May-15	06-May-15	Nil	Valid	
5	Registration as Chemical Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-951-C1186-28	Main Site Area	24-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
6	Registration as Chemical Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-974-C3597-03	Works Area WA4	24-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
7	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022180-2015	Works Area WA3	28-Apr-15	04-Aug-15	03-Aug-15	31-Aug-20	Valid	
8	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022391-2015	Main Site Area	05-May-15	04-Sept-15	04-Sept-15	30-Sept-20	Valid	
9	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0477-15	Works Area WA3	20-Apr-15	04-May-15	18-May-15	17-Nov-15	Valid	
10	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0566-15	Box Culvert D	08-May-15	22-May-15	08-Jun-15	07-Nov-15	Valid	
11	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-15	Drill Tower	06-Jul-15	20-Jul-15	01-Aug-15	30-Nov-15	Valid	
12	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0999-15	CUE	28-Aug-15	11-Sept-15	14-Sept-15	10-Dec-15	Valid	
13	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1065-15	Portion A1	15-Sept-15	29-Sept-15	30-Sept-15	31-Dec-15	Valid	

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### **Appendix G**

#### **Implementation Schedule for Environmental Mitigation Measures (EMIS)**

## Appendix G – Implementation Schedule of Environmental Mitigation Measures (EMIS)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
<b>Air Quality</b>				
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	V
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials,</li> <li>Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;.</li> <li>Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface</li> </ul>	All construction sites	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies		
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4	A4	4) Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	All construction sites	V
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected Representative dust monitoring station	V
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant; <ul style="list-style-type: none"> <li>• Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>• All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>• Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>• The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>• All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>• All conveyor transfer points should be totally enclosed;</li> <li>• All access and route roads within the premises should be paved and wetted; and</li> <li>• Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body</li> </ul>	Selected Representative dust monitoring station	V
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: <ul style="list-style-type: none"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points</li> </ul>	All construction sites	N/A
<b>Construction Noise (Air borne)</b>				
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>• mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>• material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	All construction sites	V
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	All construction sites	V
S6.4.12	N3	3) Install movable noise barriers (typically density@14kg/m acoustic mat or full enclosure close to noisy plants including	For plant items	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		compressor, generators, saw.	listed in Appendix 6D of the EIA report at all construction sites	
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction site	V
S6.4.14	N5	5) Sequencing operation of construction plants where practicable	All construction sites where practicable	V
S5.1	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	V
<b>Sediment</b>				
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	All construction sites	N/A
<b>Waste Management (Construction Waste)</b>				
S8.3.8	WM1	<u>Construction and Demolition Material</u> The following mitigation measures should be implemented in handling the waste: <ul style="list-style-type: none"> <li>• Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>• Carry out on-site sorting;</li> <li>• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>• Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>• Implement an enhanced Waste Management Plan similar to E7WBTC (Works) No. 19/2005 - "Environmental Management on Construction Sites" to encourage on-site sorting of C&amp;D materials and to minimize their generation during the course of construction.</li> <li>• In addition, disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation</li> </ul>	All construction sites	V
S8.3.9-S8.3.11	WM2	<u>C&amp;D Waste</u> <ul style="list-style-type: none"> <li>• Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</li> <li>• The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		should be considered for such segregation and storage.		
S8.3.12- S8.3.15	WM3	<u>Chemical Waste</u> <ul style="list-style-type: none"> <li>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated</li> <li>Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>	All construction sites	V
S8.3.16	WM4	<u>Sewage</u> <ul style="list-style-type: none"> <li>Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.</li> </ul>	All construction sites	V
S8.3.17	WM5	<u>General Refuse</u> <ul style="list-style-type: none"> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</li> <li>Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</li> <li>Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>	All construction sites	V
<b>Water Quality ( Construction Phase)</b>				
S9.11.1.7	W2	<u>Land Works</u> <p>General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> <li>wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li>storm drainage shall be directed to storm drains via</li> </ul>	Land-based works area	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;</p> <ul style="list-style-type: none"> <li>• silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>• temporary access roads should be surfaced with crushed stone or gravel;</li> <li>• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>• open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>• manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers;</li> <li>• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> </ul>		
S9.11.1.7	W2	<ul style="list-style-type: none"> <li>• all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>• the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>• vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>• the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>• waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>• all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and</li> <li>• surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>	Land-based works area	V
<b>Ecology (Construction Phase)</b>				
S10.7	E4	<ul style="list-style-type: none"> <li>• Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater</li> </ul>	Land-based works areas	N/A
S10.7	E5	<ul style="list-style-type: none"> <li>• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time</li> </ul>	Land-based works areas	V
S10.7	E8	<ul style="list-style-type: none"> <li>• Control vessel speed</li> </ul>	Marine Traffic	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<ul style="list-style-type: none"> <li>• Skipper training</li> <li>• Predefined and regular routes for working vessels; avoid Brother Islands.</li> </ul>		
<b>Fisheries</b>				
S11.7	F4	<ul style="list-style-type: none"> <li>• Maritime Oil Spill Response Plan (MOSRP);</li> <li>• Contingency plan.</li> </ul>	HKBCF	V
<b>Landscape &amp; Visual (Detailed Design Phase)</b>				
S14.3.3.1	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> <li>• Roadside planting and planting along the edge of the HKBCF Island is proposed;</li> <li>• Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;</li> <li>• Protection measures for the trees to be retained during construction activities;</li> <li>• Optimizing the sizes and spacing of the bridge columns;</li> <li>• Fine-tuning the location of the bridge columns to avoid visually-sensitive locations;</li> <li>• Providing planting area around peripheral of HKBCF for tree planting screening effect;</li> <li>• Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;</li> <li>• For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and</li> <li>• Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF.</li> </ul>	HKBCF	V
<b>Landscape &amp; Visual (Construction Phase)</b>				
S14.3.3.3	LV2	<p>Mitigate both Landscape and Visual Impacts</p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p> <p>G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic.</p> <p>G3. Not applicable as this is for HKLR.</p> <p>G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect;</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall.</p> <p>G9. Reserve of loose natural granite rocks for re-use, Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.</p>	HKBCF	N/A
S14.3.3.3	LV3	<p><u>Mitigate Visual Impacts</u></p> <p>V1. Minimize time for construction activities during construction period.</p> <p>V2. Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKBCF construction.</p>	HKBCF	N/A
<b>EM&amp;A</b>				
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	All construction	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
			sites	
S15.5 – S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	All construction sites	V

Legend: V = implemented; x = not implemented; N/A = not applicable

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**MaterialLab**

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### **Appendix H**

#### **Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions**

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# MaterialLab

Report No.: 0165/15/ED/0173

### Appendix H –

#### Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	1	0	0
From commencement date of construction to end of reporting month	1	0	0

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### **Appendix I**

#### **Environmental Site Inspection Schedule**

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**MaterialLab**

Report No.: 0165/15/ED/0173

**Contract No. HY/2013/03**  
**HZMB HKBCF – Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**Weekly Environmental Site Inspection Schedule**

**Environmental Site Inspection Schedule for October 2015**

Oct-2015						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Public Holiday	2 Environmental Site Inspection	3
4	5	6	7	8 Environmental Site Inspection	9	10
11	12	13	14	15 Environmental Site Inspection	16	17
18	19	20	21 Public Holiday	22	23 Environmental Site Inspection	24
25	26	27	28	29 Environmental Site Inspection	30	31

**Tentative Environmental Site Inspection Schedule for November 2015**

Nov-2015						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5 Environmental Site Inspection	6	7
8	9	10	11	12	13 Environmental Site Inspection	14
15	16	17	18	19 Environmental Site Inspection	20	21
22	23 Environmental Site Inspection	24	25	26	27	28
29	30					