



Our ref JFP/TK/bw/T355861/02/02/L036  
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E Terence.Kong@mottmac.com.hk  
Your ref -

Ramboll Environ Hong Kong Limited  
Room 2403, 24/F, Jubilee Centre  
18 Fenwick Street  
Wanchai, Hong Kong

10 November 2015  
By Email

**Attn: Mr. Raymond Dai – Independent Environmental Checker**

Dear Sir,

**Contract No. HY/2013/04 Hong Kong-Zhuhai-Macao Bridge (HZMB)  
Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage II (Southern Portion)  
Monthly EM&A Report for October 2015**

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

Yours faithfully  
For MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in blue ink, appearing to read "Terence Kong".

Terence Kong  
Environmental Team Leader

Encl.

cc. AECOM – Mr. Alfred Cheng (By Email)  
China State Construction Engineering (Hong Kong) Ltd. – Mr. Gary Ng (By Email)



11 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. Alfred Cheng

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/2013/04 – HZMB HKBCF – Infrastructure Works Stage II  
(Southern Portion)  
Monthly Environmental Monitoring & Audit Report for October 2015**

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for October 2015 certified by the ET Leader (ET's ref.: "JFP/TK/bw/T355861/02/02/L036" dated 10 November 2015) and provided to us via e-mail on 10 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. Horace Hong	(By Fax: 3188 6614)
	MMHK	Mr. Terence Kong	(By Fax: 2827 1823)
	CSCE	Mr. Eddie Tang	(By Fax: 2459 4336)

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

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Contract No. HY/2013/04 HZMB HKBCF –  
Infrastructure Works Stage II (Southern Portion)

Monthly EM&A Report for October 2015

November 2015

China State Construction Engineering (Hong Kong) Limited

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# Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/04 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage II (Southern Portion)” (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to China State Construction Engineering (Hong Kong) Limited (hereafter referred to as “the Contractor”) and Mott MacDonald Hong Kong Limited (MMHK) 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 13 March 2015 and the construction works commenced on 13 July 2015.

Mott MacDonald Hong Kong Limited 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 4<sup>th</sup> Monthly EM&A Report for the Contract which summaries findings of the EM&A works during the reporting period from 1 to 31 October 2015 (the “reporting period”).

## Environmental Monitoring and Audit Progress

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 Nos. 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: 8, 15, 19 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.



### Complaint Log

There were no complaints received in relation to the environmental impact during the reporting period.

### Notifications of Summons and Successful Prosecutions

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:

- Preliminary bored pile loading test; and
- Pre-drilling works.

# 1 Introduction

## 1.1 Background

On 13 March 2015, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by China State Construction Engineering (Hong Kong) 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/2013/04 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage II (Southern Portion)” (“the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

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 13 March 2015 and the construction works commenced on 13 July 2015. The works areas of the contract are shown in **Appendix A**.

This is the 4<sup>th</sup> Monthly EM&A Report summarising the findings of EM&A activities conducted under the Contract from 1 to 31 October 2015 (the “reporting period”) and is submitted to fulfil Condition 5.4 of the EP.

## 1.2 Project Description

The Proposed works under this Contract comprise the following:

- Construction of vehicular bridge and at-grade roads at the southern portion of Hong Kong Boundary Crossing Facilities;
- Construction of associated street lighting, street furniture, road marking, road signage, box culverts and outfalls, drainage, sewerage, fresh water and flushing water supply, irrigation, landscape, electrical and mechanical (E&M), utilities and services works;
- Provisioning of civil engineering works and power supply for Traffic Control and Surveillance System (TCSS); and
- Other works in accordance with the Contract.

## 1.3 Project Organisation

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1**.

Table 1.1: Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Alfred Cheng	3958 7471	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y H Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
	Environmental Site Supervisor	Ray Yan	5181 8165	3465 2899

Party	Position	Name	Telephone	Fax
Contractor	Site Agent	Eddie Tang	9863 7686	2459 4336
(China State Construction Engineering (Hong Kong) Limited)	Environmental Officer	Gary Ng	9475 6832	2459 4336
Environmental Team (Mott MacDonald Hong Kong Limited)	Environmental Team Leader	Terence Kong	2828 5919	2827 1823
24-hour Complaint Hotline	-	-	5236 7111	-

#### 1.4 Construction Programme

The Construction Works Programme of the Project is provided in **Appendix C**.

#### 1.5 Construction Works undertaken during the Reporting Period

A summary of the construction activities undertaken during this reporting period is shown below:

- 25 nos. predrilling holes completed on HKBCF Island;
- Preliminary bored pile for Pile No. P908 was started on 27 October 2015;
- Inclinometer installation; and
- Setting up Contractor's accommodation, material storage area and stockpile area.

## 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: Construction Dust Monitoring Locations

Identification No.	Location Description
AMS6 <sup>(1)</sup>	Dragonair/CNAC (Group) Building
AMS7A <sup>(1)</sup>	Chu Kong Air-Sea Union Transportation Co. Ltd

Remarks:

- (1) The ET of this Contract should conduct impact air quality monitoring at the AMS listed in the table as part of EM&A programme according to latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.

### 2.2 Monitoring Requirements

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 Action and Limit Levels for 1-hr TSP and 24-hr TSP are provided in **Table 2.2** and **Table 2.3** respectively.

Table 2.2: Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair / SNAC (Group) Building (HKIA)	360	500
AMS7A – Chu Kong Air-Sea Union Transportation Co. Ltd.	370	500

Table 2.3: Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair / SNAC (Group) Building (HKIA)	173	260
AMS7A – Chu Kong Air-Sea Union Transportation Co. Ltd.	183	260

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 Nos. 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.

## 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 Locations

Identification No.	Location Description
NMS2 <sup>(1)</sup>	Seaview Crescent
NMS3B <sup>(1) (2)</sup>	Site Boundary of Site Office Area at Works Area WA2

Remarks:

- (1) The ET of this Contract should conduct impact noise monitoring at the NMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
- (2) The Action and Limit Levels for schools will be applied for this alternative monitoring location.

### 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

Parameter	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received	75 dB(A)*

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.

## 4 Environmental Site Inspection and Audit

### 4.1 Site Inspection

Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control mitigation measures for the project. During the reporting period, site inspections were carried out on 8, 15, 19 and 29 October 2015.

Particular observations during the site inspections and corrective actions undertaken by the Contractor are described below.

#### 24 September 2015

- a. The surface of a newly-acquired portion of the works area was dry. Subsequently, the Contractor provided water spray for the newly acquired portion of the works area. The observation was closed on 8 October 2015.

#### 8 October 2015

- a. No new observations were made.

#### 15 October 2015

- a. No new observations were made.

#### 19 October 2015

- a. Oil spill was observed at a drilling area. Subsequently, the oil stain was cleared and contaminated soil was removed and placed in the chemical waste store. The observation was closed on 29 October 2015.
- b. Idle stockpile of C&D material was observed. Subsequently, the stockpile was cleared. The observation was closed on 29 October 2015.
- c. Water spray for the concrete breaking areas was observed and continuous water spray during each concrete breaking period was recommended. Subsequently, the concrete breaking works were completed and relevant construction plant was not observed. The observation was closed on 29 October 2015.

#### 29 October 2015

- a. No new observations were made.

### 4.2 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.

There was no generation of C&D material during this reporting period. Also, there was no generation of excavated sediment for treatment during this reporting period. Excavated marine sediment will be treated using cement solidification/stabilization (Cement S/S) techniques and will be reused onsite for either backfilling or landscaping (e.g. berm material).

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

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.

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

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

#### **4.4 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**. Most of the necessary mitigation measures were implemented properly.

#### **4.5 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.

#### **4.6 Summary of Complaints, Notification of Summons and Successful Prosecution**

There were no complaints received in relation to the environmental impact during the reporting period. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.

No notification of summons or prosecutions was received during the reporting period.

Statistics on notifications of summons and successful prosecutions are summarized in **Appendix H**.



## 5 Future Key Issues

### 5.1 Construction Programme for the Coming Months

As informed by the Contractor, the major construction activities for November 2015 are summarized in **Table 5.1**.

Table 5.1: Construction Activities for November 2015

Site Area	Description of Activities
HKBCF	<ul style="list-style-type: none"><li>• Preliminary bored pile loading test; and</li><li>• Predrilling works.</li></ul>

### 5.2 Environmental Site Inspection Schedule for the Coming Month

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

## 6 Conclusions

### 6.1 Conclusions

Commencement of the Contract took place on 13 March 2015 and the construction works of the Contract commenced on 13 July 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.

Environmental site inspections were carried out on 8, 15, 19 and 29 October 2015. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

There were no complaints received in relation to the environmental impact during the reporting period.

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

# Figures

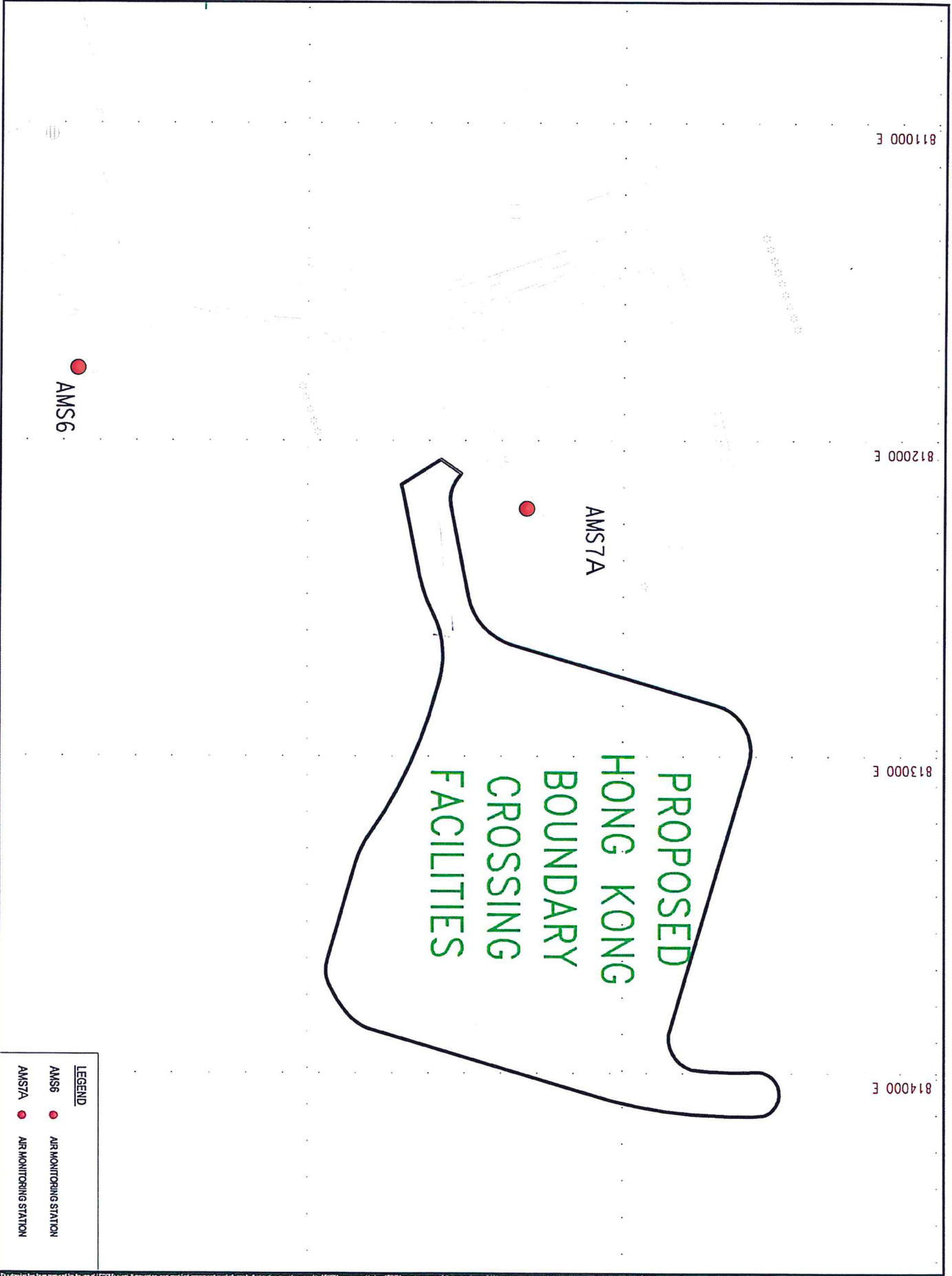
**Figure 1 Location of Air Quality Monitoring Stations**

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Project Management In 3ds

Checked

ISO A3 297mm x 420mm



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AGREEMENT NO. CE 13/2010(EE)  
 HZMB HONG KONG BOUNDARY CROSSING FACILITIES  
 (SUPERSTRUCTURE & INFRASTRUCTURE) -  
 DESIGN AND CONSTRUCTION  
 Project No. : - Date: Aug 2013

AIR QUALITY AND NOISE  
 MONITORING STATIONS

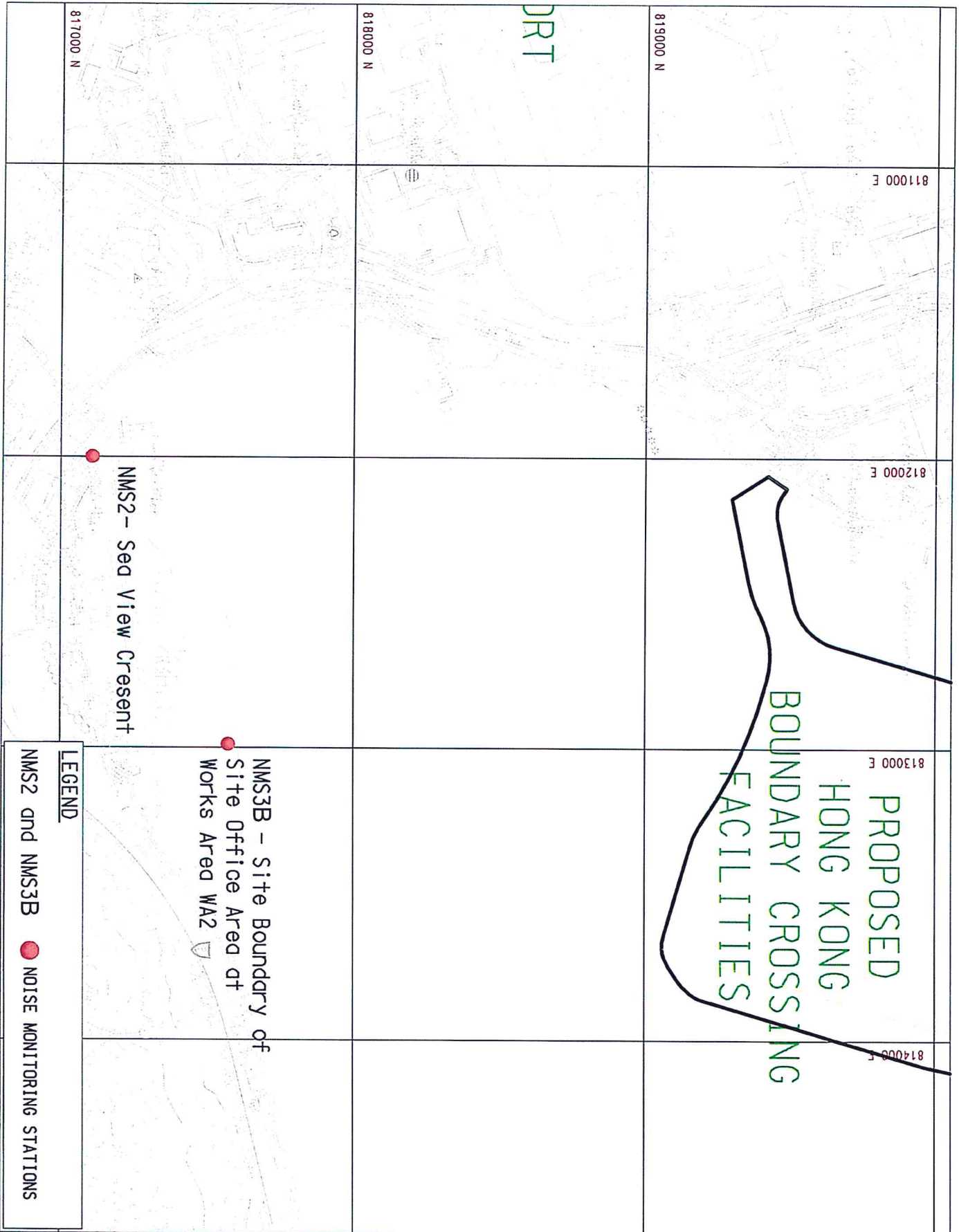
**AECOM**  
 Figure 4-1

**Figure 2 Location of Noise Quality Monitoring Stations**

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## Appendix A. Location of Works Areas



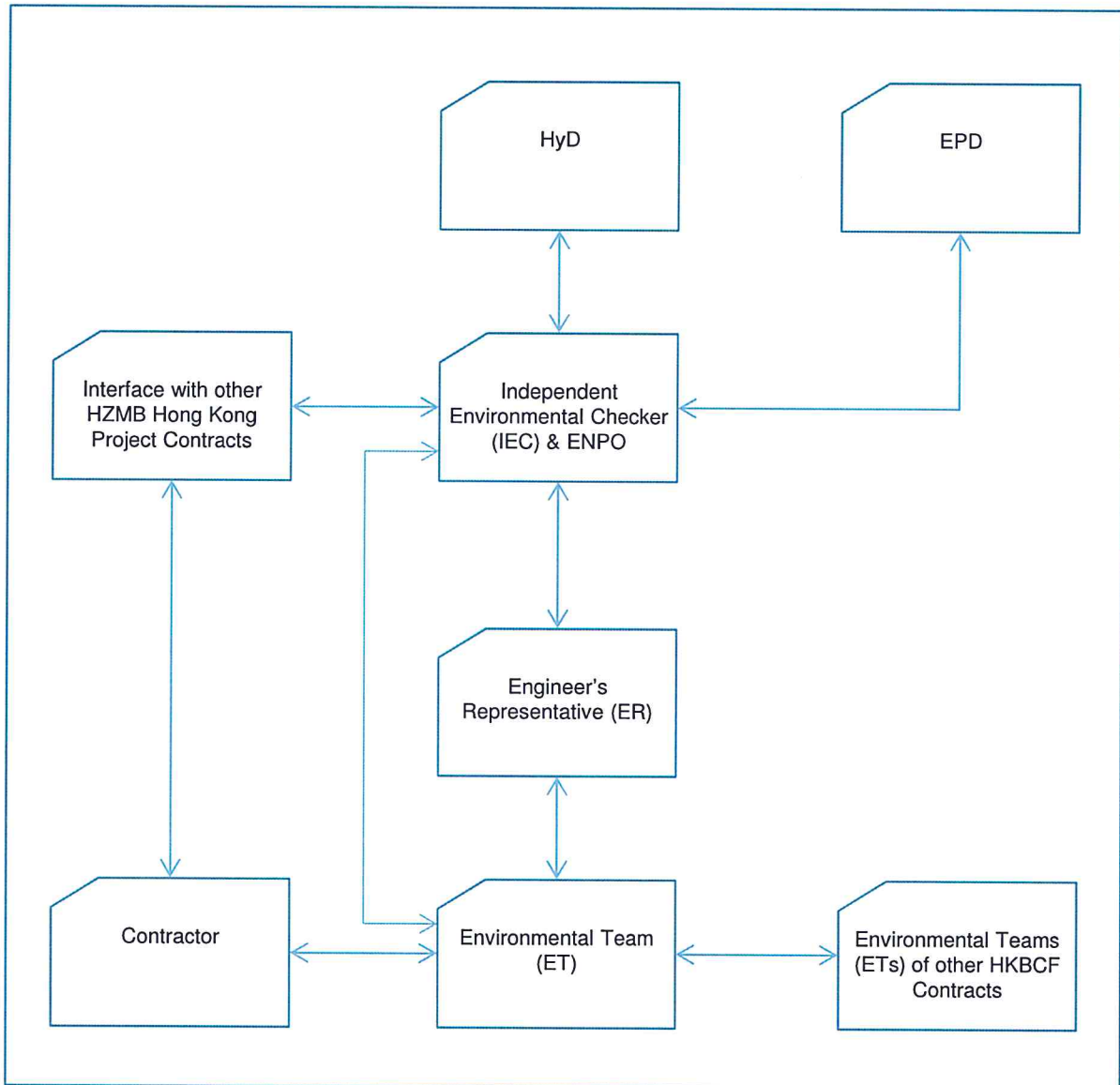






## Appendix B. Project Organization for Environmental Works

## Project Organisation for Environmental Works



↔ Line of Communication

## Appendix C. Construction Programme



















Agency ID	Agency Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar	Remarks
CONSA1.11020	GI Report and Verification / Agreement to Founding Level	8	21-Jul-15	29-Jul-15	33	2015	CAL 2 - 6 day
CONSA1.1120	D10 Bored Piling (8 nos. 2000mm dia x 6m) including 4 for P910	56	11-Aug-15	16-Oct-15	23	2015	CAL 2 - 6 day 8 nos x 14 days / 2 rps
CONSA1.1125	Pile Testing	56	23-Sep-15	28-Nov-15	77	2015	CAL 2 - 6 day
CONSA1.1130	Pile Trimming + Pile Caps	38	30-Nov-15	15-Jan-16	77	2015	CAL 2 - 6 day 4 nos x 8d + 6d Trimming
CONSA1.1140	Per Columns + Pier Head & Bearings (4 nos. P908 & P909 + P910 x2)	48	16-Jan-16	15-Mar-16	77	2015	CAL 2 - 6 day 4 nos x 12 days
CONSA1.1160	Bridge D10 - Erect Precast Segments + Sitching + Stressing (3 spans)	24	22-Jun-16	20-Jul-16	0	2015	CAL 2 - 6 day 44 Segments, 3 spans x 8 days
CONSA1.1170	D10 Bridge Anchovy - Parapet/TCSB, Railing, MI, Drainage & Bridge Lighting Signages	33	12-Jul-16	18-Aug-16	0	2015	CAL 2 - 6 day 132m / 2 Steel Moulds @ 5 days cycle / 10m bay
CONSA1.1175	D10 Bridge Anchovy - Parapet + Railing, MI, Drainage, Bridge Lighting, Signages	33	03-Nov-16	10-Dec-16	19	2015	CAL 2 - 6 day 132m / 2 Steel Moulds @ 5 days cycle / 10m bay
CONSA1.1180	D10 Final Asphalt Paving + Road Markings	12	13-Feb-17	25-Feb-17	0	2017	CAL 2 - 6 day
CONSA1.1190	Bridge D10 complete	0	25-Feb-17	25-Feb-17	61	2017	CAL 2 - 6 day
<b>Bridge D9c</b>							
CONSA1.1192	Site Possession / Access to Portion A1 & A2	0	13-May-15		26	2015	CAL 2 - 6 day
CONSA1.1194	Survey / Setting Out	6	13-May-15	19-May-15	26	2015	CAL 2 - 6 day
CONSA1.1200.0	Prefilling (8 nos)	20	20-May-15	12-Jun-15	26	2015	CAL 2 - 6 day 8 nos x 5 days / 2 rps
CONSA1.1200.20	GI Report and Verification / Agreement to Founding Level	8	13-Jun-15	23-Jun-15	26	2015	CAL 2 - 6 day
CONSA1.1210	D10 Bored Piling (8 nos. 2000mm dia x 6.2m)	56	14-Jul-15	16-Sep-15	10	2015	CAL 2 - 6 day 8 nos x 14 days / 2 rps
CONSA1.1215	Pile Testing	56	20-Aug-15	27-Oct-15	10	2015	CAL 2 - 6 day
CONSA1.1220	Pile Trimming + Pile Caps (3 nos)	36	13-Oct-15	24-Nov-15	26	2015	CAL 2 - 6 day 3 nos x 8 days + 6 days for Trimming
CONSA1.1230	Per Columns + Pier Head & Bearings	36	11-Nov-15	22-Dec-15	26	2015	CAL 2 - 6 day 3 nos x 12 days
CONSA1.1240	Bridge D9c - Construct Deck (Cast in Situ) (1 span, P910 to P911)	36	23-Dec-15	05-Feb-16	26	2015	CAL 2 - 6 day 1 span (cast in-situ)
CONSA1.1250	Bridge D9c - Erect Precast Segments Pier P911 to Pier P913 + Sitching + Stressing (2 spans)	16	11-Feb-16	01-Apr-16	0	2015	CAL 2 - 6 day 38 segments, 2 spans x 8 days / span
CONSA1.1260	D10 Bridge Anchovy - Parapet/TCSB, Railing, MI, Drainage & Bridge Lighting	32	12-May-16	20-Jun-16	44	2015	CAL 2 - 6 day 126m / 2 Steel Moulds @ 7 days cycle / 10m bay
CONSA1.1270	D10 Bridge Anchovy - Parapet + Railing, MI, Drainage, Bridge Lighting, Signages	32	24-Sep-16	02-Nov-16	19	2015	CAL 2 - 6 day 126m / 2 Steel Moulds @ 7 days cycle / 10m bay
<b>Bridge D9c in Portion A3 (interface with Contract HY/2012/07)</b>							
CONSA3.1010	Site Possession / Access to Portion A3	0	02-Jun-16		11	2016	CAL 2 - 6 day
CONSA3.1020	MoU Survey / Setting Out	12	02-Jun-16	15-Jul-16	11	2016	CAL 2 - 6 day
CONSA3.1030	Bridge D9c (A3) - Erect Precast Segments Pier P912 to Contract Interface + Sitching + Stressing (1 span)	12	29-Jun-16	11-Aug-16	0	2016	CAL 2 - 6 day 14 segments, 1 span x 8 days
CONSA3.1040	D10 Bridge Anchovy - Parapet/TCSB, Railing, MI, Drainage & Bridge Lighting	35	12-Aug-16	23-Sep-16	0	2016	CAL 2 - 6 day 41m 1 Steel Moulds @ 5 days cycle / 10m bay
CONSA3.1045	D10 Bridge Anchovy - Parapet + Railing, MI, Drainage, Bridge Lighting, Signages	35	24-Sep-16	05-Nov-16	0	2016	CAL 2 - 6 day 41m 1 Steel Moulds @ 5 days cycle / 10m bay
CONSA3.1050	Final Asphalt Paving + Road Markings	15	28-Nov-16	14-Dec-16	0	2016	CAL 2 - 6 day
CONSA3.1060	Completion of Works in Stage 1B (K02)	0	14-Dec-16	14-Dec-16	0	2016	CAL 2 - 6 day
<b>Bridge D10</b>							
CONSA1.1284	Site Possession / Access to Portion A1	0	13-May-15		64	2015	CAL 2 - 6 day
CONSA1.1286	Survey / Setting Out	6	13-May-15	19-May-15	64	2015	CAL 2 - 6 day
CONSA1.1290.0	Prefilling (16 nos)	25	09-Jul-15	06-Aug-15	24	2015	CAL 2 - 6 day 14 nos x 5d / 2 rps
CONSA1.1290.20	GI Report and Verification / Agreement to Founding Level	8	07-Aug-15	15-Aug-15	24	2015	CAL 2 - 6 day
CONSA1.1300	D10 Bored Piling (14 nos. 1800x2200mm dia x 57m) (42m for Abutment)	66	14-Sep-15	02-Dec-15	0	2015	CAL 2 - 6 day 14 nos x 14 days / 3 rps
CONSA1.1305	Pile Testing	66	22-Oct-15	09-Jan-16	0	2015	CAL 2 - 6 day
CONSA1.1310	Pile Trimming + Pile Caps	70	24-Nov-15	19-Feb-16	0	2015	CAL 2 - 6 day 8 nos x 8 days + 6 days Trimming
CONSA1.1315	Abutment A1004	36	30-Jan-16	15-Mar-16	0	2015	CAL 2 - 6 day
CONSA1.1320	Per Columns + Pier Head & Bearings	48	30-Jan-16	01-Apr-16	0	2015	CAL 2 - 6 day 8 nos x 12 days / 2 Teams
CONSA1.1340	Bridge D10 - Erect Precast Segments + Sitching + Stressing (8 spans)	64	02-Apr-16	20-Jun-16	0	2015	CAL 2 - 6 day 108 segments, 8 spans x 8 days / span
CONSA1.1350	D10 Bridge Anchovy - Parapet/TCSB, Railing, MI, Drainage, Bridge Lighting, & Sign Signage	50	03-Jun-16	02-Aug-16	14	2015	CAL 2 - 6 day 195m / 2 Steel Moulds @ 5 days cycle / 10m bay
CONSA1.1355	D10 Bridge Anchovy - Parapet + Railing, MI, Drainage, Bridge Lighting, Signages	50	01-Dec-16	03-Feb-17	19	2015	CAL 2 - 6 day 195m / 2 Steel Moulds @ 5 days cycle / 10m bay + median
CONSA1.1360	D10 Final Asphalt Paving + Road Markings	14	27-Feb-17	14-Mar-17	0	2017	CAL 2 - 6 day









Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar																																																																													
						Remarks																																																																													
												2015												2016												2017												2018												2019																							
												O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
<b>Bridge D16S and D16N and Abutment A1601 in Portion A6</b>																																																																																			
CONS.A4.2230	Commence Works for Abutment A1601	0	04-Nov-15		4	CAL2 - 6 day																																																																													
CONS.A4.2240	Survey / Site Setting Out	6	04-Nov-15	10-Nov-15	4	CAL2 - 6 day																																																																													
CONS.A4.2250.10	Predrilling (4 nos)	20	16-Nov-15	06-Dec-15	0	CAL2 - 6 day																																																																													
CONS.A4.2250.20	GI Report and Verification / Agreement to Founding Level	8	09-Dec-15	17-Dec-15	0	CAL2 - 6 day																																																																													
CONS.A4.2260	D16NKS River Piling (4 nos x 1800mm dia)	56	18-Dec-15	27-Feb-16	0	CAL2 - 6 day																																																																													
CONS.A4.2265	Pile Testing	56	02-Feb-16	14-Apr-16	0	CAL2 - 6 day																																																																													
CONS.A4.2270	Pile Trimming + Pile Caps	40	15-Apr-16	02-Jun-16	0	CAL2 - 6 day																																																																													
CONS.A4.2280	Construct Abutment A1601	36	03-Jun-16	16-Jul-16	0	CAL2 - 6 day																																																																													
<b>Bridge D16S and D16N in Portion A4</b>																																																																																			
CONS.A4.2285	Site Possession / Site Access to Portion A4	0	29-Nov-16		0	CAL2 - 6 day																																																																													
CONS.A4.2290	Bridge D16S & D16N - Construct Deck (cast in-situ)	36	29-Nov-16	12-Jan-17	0	CAL2 - 6 day																																																																													
CONS.A4.2300	D16S & D16N Bridge Inlet - Parapet, MU, Drainage, Bridge Lighting, TCSS & Signages	26	18-Jan-17	20-Feb-17	0	CAL2 - 6 day																																																																													
CONS.A4.2310	Final Asphalt Paving, Road Markings and Signages	12	02-May-17	16-May-17	0	CAL2 - 6 day																																																																													
CONS.A4.2320	Inspection and Handover of Bridge D16	6	17-May-17	23-May-17	0	CAL2 - 6 day																																																																													
CONS.A4.2330	Completion of Bridge D16N and D16S	0	23-May-17		0	CAL2 - 6 day																																																																													
<b>Road Works, Drainage and U/G Utilities</b>																																																																																			
<b>Road Works (East of Box Culvert D)</b>																																																																																			
<b>Road Formation and Drainage System</b>																																																																																			
<b>Road SOL 101 / 109 / 114</b>																																																																																			
<b>Road Formation and Drainage System</b>																																																																																			
CONS.RW.1010	Survey / Road Setting Out	6	13-May-15	19-May-15	0	CAL2 - 6 day																																																																													
CONS.RW.1020	Road Formation to Sub-grade (Cut & Fill)	75	20-May-15	19-Aug-15	7	CAL2 - 6 day																																																																													
CONS.RW.1030	Excavate to Invert level and Install Drainage System (Drain Pipes & Catchpans/Manholes) + Testing & Interfere Connection	150	06-Jun-15	03-Dec-15	12	CAL2 - 6 day																																																																													
<b>Installation of Underground Utilities</b>																																																																																			
CONS.RW.1060	Excavate and Install Fresh W/L Valves & fittings + Testing, Cleaning & Flushing and Interfere Connection	150	21-Jun-15	18-Jun-16	0	CAL2 - 6 day																																																																													
CONS.RW.1070	Excavate and Install Common Telecom Ducting and Telecom Ducting by Contractor	150	28-Jun-15	25-Jun-16	0	CAL2 - 6 day																																																																													
CONS.RW.1080	Excavate and Install ELV LV Ducting and Pile Box for TCSS and Road Lighting	150	04-Aug-15	01-Feb-16	0	CAL2 - 6 day																																																																													
<b>Kerbing and Footings for Railing, Fencing, Signages and Road Lighting</b>																																																																																			
CONS.RW.1090	Excavate and Construct Footings for Road Lightings / Railing / Fencing and Signages	120	08-Oct-15	03-Mar-16	0	CAL2 - 6 day																																																																													
CONS.RW.1100	Road Formation to Sub-base	90	20-Nov-15	10-Mar-16	0	CAL2 - 6 day																																																																													
CONS.RW.1110	Construct Precast Road Kerbings	90	27-Nov-15	17-Mar-16	0	CAL2 - 6 day																																																																													
<b>Road Works to Road Base and Base Course</b>																																																																																			
CONS.RW.2140	Road Formation to Road Base	90	26-Jan-16	19-May-16	0	CAL2 - 6 day																																																																													
CONS.RW.2150	Road Formation to Base Course	75	15-May-16	17-Jun-16	2	CAL2 - 6 day																																																																													
<b>Installation of Railing and Fencing + Road Lighting and Signages</b>																																																																																			
CONS.RW.2220	Install Road Railing and Fencing	75	12-May-16	10-Aug-16	2	CAL2 - 6 day																																																																													
CONS.RW.2830	Install Road Lighting and Signages	75	11-Jun-16	07-Sep-16	7	CAL2 - 6 day																																																																													
<b>Final Paving and Road Markings</b>																																																																																			
CONS.RW.2690	Final Road Paving (Wearing Course)	24	25-Nov-16	22-Dec-16	1	CAL2 - 6 day																																																																													
CONS.RW.2720	Road Markings and Road Signages	22	23-Dec-16	20-Jan-17	13	CAL2 - 6 day																																																																													
<b>Portion A6 - Final Paving and Road Markings</b>																																																																																			
CONS.RW.2930	Road Clearing	6	17-Jun-18	23-Jan-18	0	CAL2 - 6 day																																																																													
CONS.RW.2970	Final Road Paving (Wearing Course)	24	24-Jan-18	23-Feb-18	0	CAL2 - 6 day																																																																													
CONS.RW.2980	Road Markings and Road Signages	16	24-Feb-18	14-Mar-18	0	CAL2 - 6 day																																																																													

Note: Late Final Paving due to Site Logistic related to ...





Activity ID	Activity Name	Orig Qty	Early Start		Early Finish	Total Finish	Calendar												Remarks												
			Day	Month			Year	2015	2016	2017	2018	2019																			
COIS.RW.2430	Excavate to invert level and install Drainage System (Drain Pipes & Catchpit/Manholes) + Testing & Interface Connection	150	19-Oct-15	23-Apr-16	23-Apr-16	0																									CAL 2 - 6 day
<b>Installation of Underground Utilities</b>																															
COIS.RW.2940	Excavate and Install Fresh WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection	150	17-Nov-15	23-May-16	23-May-16	0																									CAL 2 - 6 day
COIS.RW.2950	Excavate and Install Common Telecom Ducting and Telecom Ducting by Others	150	03-Dec-15	08-Jun-16	08-Jun-16	0																									CAL 2 - 6 day
COIS.RW.2960	Excavate and Install ELV / LV Ducting and Pair box for TCSS	150	19-Dec-15	25-Jun-16	25-Jun-16	0																									CAL 2 - 6 day
<b>Kerbing and Footings for Railing, Fencing, Signages and Road Lighting</b>																															
COIS.RW.2510	Excavate and Construct Footings for Road Lightings / Railing / Fencing and Signages	120	27-Feb-16	25-Jul-16	25-Jul-16	0																									CAL 2 - 6 day
COIS.RW.2520	Road Formation to Sub-base	90	21-Apr-16	08-Aug-16	08-Aug-16	0																									CAL 2 - 6 day
COIS.RW.2530	Construct Precast Road Kerbings	90	06-May-16	22-Aug-16	22-Aug-16	0																									CAL 2 - 6 day
<b>Road Works to Road Base and Base Course</b>																															
COIS.RW.2590	Road Formation to Road Base	90	05-Jul-16	21-Oct-16	21-Oct-16	0																									CAL 2 - 6 day
COIS.RW.2600	Road Formation to Base Course	75	02-Sep-16	02-Dec-16	02-Dec-16	0																									CAL 2 - 6 day
<b>Installation of Railing and Fencing + Road Lighting and Signages</b>																															
COIS.RW.2640	Install Road Railing and Fencing	90	13-Sep-16	03-Jan-17	03-Jan-17	0																									CAL 2 - 6 day
COIS.RW.2670	Install Road Lighting and Signages	75	02-Nov-16	03-Feb-17	03-Feb-17	0																									CAL 2 - 6 day
<b>Final Paving and Road Markings</b>																															
COIS.RW.2670	Final Road Paving (Wearing Course)	20	18-May-17	11-Apr-17	11-Apr-17	0																									CAL 2 - 6 day
COIS.RW.2760	Road Markings and Road Signages	14	12-Apr-17	02-May-17	02-May-17	0																									CAL 2 - 6 day
<b>Road SOL 104</b>																															
<b>Road Formation and Drainage System</b>																															
COIS.RW.2440	Survey/ Road Setting Out	6	19-Nov-15	25-Nov-15	25-Nov-15	11																									CAL 2 - 6 day
COIS.RW.2450	Road Formation to Sub-grade (Cut & Fill)	48	26-Nov-15	23-Jan-16	23-Jan-16	11																									CAL 2 - 6 day
COIS.RW.2460	Excavate to invert level and install Drainage System (Drain Pipes & Catchpit/Manholes) + Testing & Interface Connection	120	25-Jan-16	23-Jun-16	23-Jun-16	11																									CAL 2 - 6 day
<b>Installation of Underground Utilities</b>																															
COIS.RW.2470	Excavate and Install Fresh WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection (3 lines)	120	25-Feb-16	22-Jul-16	22-Jul-16	11																									CAL 2 - 6 day
COIS.RW.2480	Excavate and Install Fresh WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection (1 line)	90	12-Apr-16	29-Jul-16	29-Jul-16	11																									CAL 2 - 6 day
COIS.RW.2490	Excavate and Install ELV / LV Ducting and Pair box for TCSS	90	19-Apr-16	05-Aug-16	05-Aug-16	11																									CAL 2 - 6 day
<b>Kerbing and Footings for Railing, Fencing, Signages and Road Lighting</b>																															
COIS.RW.2540	Excavate and Construct Footings for Road Lightings / Railing / Fencing and Signages	90	21-May-16	05-Sep-16	05-Sep-16	24																									CAL 2 - 6 day
COIS.RW.2550	Road Formation to Sub-base	60	05-Jul-16	12-Sep-16	12-Sep-16	48																									CAL 2 - 6 day
COIS.RW.2560	Construct Precast Road Kerbings	60	12-Jul-16	21-Sep-16	21-Sep-16	48																									CAL 2 - 6 day
<b>Road Works to Road Base and Base Course</b>																															
COIS.RW.2610	Road Formation to Road Base	60	23-Aug-16	04-Nov-16	04-Nov-16	24																									CAL 2 - 6 day
COIS.RW.2620	Road Formation to Base Course	48	07-Oct-16	02-Dec-16	02-Dec-16	24																									CAL 2 - 6 day
<b>Installation of Railing and Fencing + Road Lighting and Signages</b>																															
COIS.RW.2650	Install Road Railing and Fencing	48	19-Nov-16	17-Jan-17	17-Jan-17	0																									CAL 2 - 6 day
COIS.RW.2680	Install Road Lighting and Signages	48	17-Dec-16	17-Feb-17	17-Feb-17	0																									CAL 2 - 6 day
<b>Final Paving and Road Markings</b>																															
COIS.RW.2680	Final Road Paving (Wearing Course)	14	12-Apr-17	02-May-17	02-May-17	0																									CAL 2 - 6 day
COIS.RW.2770	Road Markings and Road Signages	10	04-May-17	15-May-17	15-May-17	0																									CAL 2 - 6 day
<b>Road SOL 107 (Depressed Road)</b>																															
<b>Stage 1 - Depressed Road Works (West Side 1st Hair)</b>																															
COIS.CI.1501	Commence Works on Depressed Road (1st hair on the West side)	0	21-Sep-15			0																									CAL 2 - 6 day
COIS.CI.1520	Survey / Setting out	6	21-Sep-15	26-Sep-15	26-Sep-15	0																									CAL 2 - 6 day
COIS.CI.1530	Excavate to formation level	45	29-Sep-15	21-Nov-15	21-Nov-15	0																									CAL 2 - 6 day



### HY/2013/04 - Hong Kong Boundary Crossing Facilities Infrastructure Works Stage II (Southern Portion)

Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar												Remarks																
						2015	2016	2017	2018	2019																								
						O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
CONS.C1.1516	Construct Walk and Sub to Upper Basement	24	04-Aug-16	31-Aug-16	0																													
CONS.C1.1570	Construct Walk and Sub to Ground Level	24	01-Sep-16	30-Sep-16	0																													
CONS.C1.1520	Construct Walk and Roof Sub	24	03-Oct-16	31-Oct-16	0																													
CONS.C1.1520S	ABWF & Building Services Works to Pump House / Switch Room	14	01-Nov-16	16-Nov-16	0																													
CONS.C1.1521	Achievement of Stage 5 (KOS) / Interface with C3	0	16-Nov-16	16-Nov-16	0																													
CONS.C1.1521S	Building Services Installation	75	17-Nov-16	18-Feb-17	7																													
CONS.C1.1520	MEP Installation for Pump House/Switch Room (By C3)	75	17-Nov-16	18-Feb-17	7																													
CONS.C1.1525	ABWF Works + External Works	75	17-Nov-16	18-Feb-17	7																													
CONS.C1.1520	TRC and Statutory Permits/Certification (FS, BD)	60	20-Feb-17	06-May-17	7																													
<b>Sign Gantry</b>																																		
<b>Preliminary Driven H Piles and Load Testing</b>																																		
CONS.C1.0510	Commence Preliminary Driven H Pile for Sign Gantry	0	13-Sep-15	13-Aug-16	0																													
CONS.C1.0520	Mobile Plant & Set-up Support	12	13-Sep-15	24-Sep-15	0																													
CONS.C1.0530.10	Pre-drilling (2 nos)	10	25-Sep-15	08-Oct-15	0																													
CONS.C1.0530.20	GI Report and Verification / Agreement to Founding Level	8	09-Oct-15	17-Oct-15	0																													
CONS.C1.0540	Preliminary Driven H Pile (2 nos)	5	18-Oct-15	22-Oct-15	0																													
CONS.C1.0550	Pile Load Testing and Submit Report	28	23-Oct-15	19-Nov-15	0																													
<b>Sign Gantry Footings at Grade in Portion A1</b>																																		
<b>DS303 (Driven H Pile)</b>																																		
CONS.A1.4360	Commence Foundation / Footing for Sign Gantry	0	20-Nov-15	20-Nov-15	10																													
CONS.A1.4370	Mobile Plant + Survey / Setting Out	6	20-Nov-15	26-Nov-15	10																													
CONS.A1.4380.10	Pre-drilling (12 nos)	30	27-Nov-15	04-Jan-16	10																													
CONS.A1.4380.20	GI Report and Verification / Agreement to Founding Level	30	11-Dec-15	18-Jan-16	10																													
CONS.A1.4390	Piling Works - Driven H Pile (12 nos)	30	07-Jan-16	13-Feb-16	2																													
CONS.A1.4410	Excavation, Pile Trimming + Cast Pile Caps (3 nos)	30	15-Feb-16	19-Mar-16	20																													
CONS.A1.4420	Backfill Foundation	12	21-Mar-16	07-Apr-16	20																													
<b>Sign Gantry Footing at Grade in Portion C1 &amp; Portion D1</b>																																		
<b>DS302 (610mm dia. Pre-bored H Pile)</b>																																		
CONS.D1.3380	Commence Foundation / Footing for Sign Gantry	0	12-Sep-15	12-Sep-15	14																													
CONS.D1.3390	Mobile Plant / Survey / Setting Out	10	12-Sep-15	23-Sep-15	14																													
CONS.D1.4000.10	Pre-drilling for Pre-bored H Pile (8 nos)	20	24-Sep-15	19-Oct-15	14																													
CONS.D1.4000.20	GI Report and Verification / Agreement to Founding Level	8	20-Oct-15	29-Oct-15	36																													
CONS.D1.4110	Pre-bored Socket H-Pile (8 nos)	48	30-Oct-15	24-Dec-15	36																													
CONS.D1.4120	Pile Testing	48	02-Dec-15	29-Jan-16	36																													
CONS.D1.4130	Excavation, Pile Trimming + Pile Caps (2 nos)	24	30-Jan-16	01-Mar-16	36																													
CONS.D1.3440	Backfill Foundation	12	02-Mar-16	15-Mar-16	36																													
<b>GT408 (Driven H Pile)</b>																																		
CONS.C1.1010	Commence Foundation / Footing for Sign Gantry	0	06-Nov-15	06-Nov-15	0																													
CONS.C1.1020	Survey / Setting Out	2	06-Nov-15	07-Nov-15	0																													
CONS.C1.1030.10	Pre-drilling (8 nos)	20	09-Nov-15	01-Dec-15	0																													
CONS.C1.1030.20	GI Report and Verification / Agreement to Founding Level	8	02-Dec-15	10-Dec-15	0																													
CONS.C1.1040	Piling Works - Driven H Pile (8 nos)	20	11-Dec-15	06-Jan-16	0																													
CONS.C1.1060	Excavation, Pile Trimming + Cast Pile Caps (2 nos)	20	07-Jan-16	29-Jan-16	66																													
CONS.C1.1070	Backfill Foundation	6	30-Jan-16	05-Feb-16	66																													
<b>DS44 (Driven H Pile)</b>																																		

HY/2013/04 - Hong Kong Boundary Crossing Facilities Infrastructure Works Stage II (Southern Portion)

Activity Name	Activity ID	Calendar												Calendar Remarks															
		2015	2016			2017			2018			2019																	
Org Dur	Early Start	Early Finish	Total Float	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Commence Foundation / Footing for Sign Gantry	CONSC.I.4080	0	07-Jun-16	08-Jun-16	0	CAL 2 - 6 day																							
Survey / Setting Out	CONSC.I.4090	2	07-Jun-16	08-Jun-16	0	CAL 2 - 6 day																							
Prefilling (8 nos)	CONSC.I.4100.10	20	09-Jun-16	01-Feb-16	0	CAL 2 - 6 day 8 nos x 5 days / 7 rps																							
GI Report and Verification / Agreement to Founding Level	CONSC.I.4100.20	8	02-Feb-16	13-Feb-16	2	CAL 2 - 6 day																							
Piling Works - Driven H Pile (8 nos)	CONSC.I.4110	20	15-Feb-16	08-Mar-16	2	CAL 2 - 6 day 8 nos x 2.5 days																							
Excavation, Pile Trimming + Cast Pile Caps (2 nos)	CONSC.I.4130	20	09-Mar-16	05-Apr-16	16	CAL 2 - 6 day																							
Budoff Foundation	CONSC.I.4140	6	06-Apr-16	12-Apr-16	16	CAL 2 - 6 day																							
<b>DSZ61 (Driven H Pile)</b>																													
Commence Foundation / Footing for Sign Gantry	CONSC.I.4150	0	02-Feb-16	03-Feb-16	0	CAL 2 - 6 day																							
Survey / Setting Out	CONSC.I.4160	2	02-Feb-16	03-Feb-16	0	CAL 2 - 6 day																							
Prefilling (8 nos)	CONSC.I.4170.10	20	04-Feb-16	01-Mar-16	0	CAL 2 - 6 day 8 nos x 5 days / 7 rps																							
GI Report and Verification / Agreement to Founding Level	CONSC.I.4170.20	8	02-Mar-16	10-Mar-16	0	CAL 2 - 6 day																							
Piling Works - Driven H Pile (8 nos)	CONSC.I.4180	20	11-Mar-16	07-Apr-16	0	CAL 2 - 6 day 8 nos x 2.5 days																							
Excavation, Pile Trimming + Cast Pile Caps (2 nos)	CONSC.I.4200	20	08-Apr-16	30-Apr-16	0	CAL 2 - 6 day																							
Budoff Foundation	CONSC.I.4210	6	03-May-16	09-May-16	0	CAL 2 - 6 day																							
<b>ADS303 (Driven H Pile)</b>																													
Commence Foundation / Footing for Sign Gantry	CONSC.I.4220	0	02-Mar-16	03-Mar-16	0	CAL 2 - 6 day																							
Survey / Setting Out	CONSC.I.4230	2	02-Mar-16	03-Mar-16	0	CAL 2 - 6 day																							
Prefilling (12 nos)	CONSC.I.4240.10	20	04-Mar-16	30-Mar-16	0	CAL 2 - 6 day 12 nos x 5 days / 3 rps																							
GI Report and Verification / Agreement to Founding Level	CONSC.I.4240.20	8	31-Mar-16	09-Apr-16	0	CAL 2 - 6 day																							
Piling Works - Driven H Pile (12 nos)	CONSC.I.4250	30	11-Apr-16	17-May-16	0	CAL 2 - 6 day 12 nos x 2.5 days / Driven H Pile																							
Excavation, Pile Trimming + Cast Pile Caps (3 nos)	CONSC.I.4270	30	18-May-16	22-Jun-16	8	CAL 2 - 6 day																							
Budoff Foundation	CONSC.I.4280	8	23-Jun-16	02-Jul-16	8	CAL 2 - 6 day																							
<b>FADS303 (Driven H Pile)</b>																													
Commence Foundation / Footing for Sign Gantry	CONSC.I.4290	0	31-Mar-16	01-Apr-16	8	CAL 2 - 6 day																							
Survey / Setting Out	CONSC.I.4300	2	31-Mar-16	01-Apr-16	8	CAL 2 - 6 day																							
Prefilling (8 nos)	CONSC.I.4310.10	20	02-Apr-16	26-Apr-16	8	CAL 2 - 6 day 8 nos x 5 days / 2 rps																							
GI Report and Verification / Agreement to Founding Level	CONSC.I.4310.20	8	27-Apr-16	06-May-16	8	CAL 2 - 6 day																							
Piling Works - Driven H Pile (8 nos)	CONSC.I.4320	16	18-May-16	04-Jun-16	0	CAL 2 - 6 day 8 nos x 2.5 days																							
Excavation, Pile Trimming + Cast Pile Caps (2 nos)	CONSC.I.4340	20	06-Jun-16	29-Jun-16	0	CAL 2 - 6 day																							
Budoff Foundation	CONSC.I.4350	12	30-Jun-16	14-Jul-16	0	CAL 2 - 6 day																							
<b>Erection of Sign Gantry and High Mast for TCSW Works</b>																													
Erection of Sign Gantry & High Mast Structure and Associated Conductors for TCSW Works	CONSC.I.4360	90	03-May-16	18-Aug-16	0	CAL 2 - 6 day K01 and K03																							
<b>Retaining Walls</b>																													
<b>Retaining Walls in Portion A1 &amp; Portion A6</b>																													
<b>RW11 (42m / 3 bays)</b>																													
Commence RW11 Retaining Wall (42m / 3 bays)	CONSA1.3320	0	22-Jul-15	28-Jul-15	7	CAL 2 - 6 day																							
Survey / Setting Out	CONSA1.3330	6	22-Jul-15	28-Jul-15	7	CAL 2 - 6 day																							
Excavate to formation level (open cut / slope)	CONSA1.3340	18	29-Jul-15	18-Aug-15	7	CAL 2 - 6 day																							
Cast Base & Wall Stem 3 bays (robbed finish to 1m below F.G.L)	CONSA1.3350	36	19-Aug-15	30-Sep-15	7	CAL 2 - 6 day 3 bays x 12 days																							
Backfill to final ground level	CONSA1.3360	24	16-Sep-15	15-Oct-15	7	CAL 2 - 6 day																							
<b>RW14A (29m / 2 bays)</b>																													
Commence RW14a Retaining Wall (29m / 2 bays)	CONSA1.3380	0	02-Oct-15	07-Oct-15	11	CAL 2 - 6 day																							
Survey / Setting Out	CONSA1.3390	5	02-Oct-15	07-Oct-15	11	CAL 2 - 6 day																							
Excavate to formation level (open cut / slope)	CONSA1.3400	12	05-Oct-15	17-Oct-15	11	CAL 2 - 6 day																							













## Appendix D. Event and Action Plan

## Event/Action Plan for Air Quality

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

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

## 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>
Limit Level	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, EPD and Contractor;</li> <li>2. Identify source;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the 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 properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>



## Appendix E. Waste Flow Table

**Monthly Summary Waste Flow Table for 2015 (Year)**

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated (in '000m <sup>3</sup> )	Hard Rock and Large Broken Concrete (in '000m <sup>3</sup> )	Reused in the Contract (in '000m <sup>3</sup> )	Reused in other Projects (in '000m <sup>3</sup> )	Disposed as Public Fill (in '000m <sup>3</sup> )	Imported Fill (in '000m <sup>3</sup> )	Metals (in '000kg)	Paper/ cardboard packaging (in '000kg)	Plastics (Note 1) (in '000kg)	Chemical Waste (in '000kg)	Others, e.g. general refuse (in '000m <sup>3</sup> )	
Jan												
Feb												
Mar												
Apr												
May												
Jun												
Sub-total	0	0	0	0	0	0	0	0	0	0	0	
Jul	0	0	0	0	0	0	0	0	0	0	0	
Aug	0	0	0	0	0	0	0	0	0	0	0	
Sep	0	0	0	0	0	0	0	0	0	0	0	
Oct	0	0	0	0	0	0	0	0	0	0	0	
Nov												
Dec												
Total	0	0	0	0	0	0	0	0	0	0	0	

Note: (1) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

# Appendix F. Environmental Licenses and Permits

## Environmental Licenses and Permits

Item No.	Type of Permit / Licence	Reference No.	Application Date	Date of Issue	Date of Expiry	Remark
1	Environmental Permit under EIAO	EP-353/2009/I	30 Jun 2015	17 Jul 2015	N/A	Issued
2	Construction Dust Notification (HKBCF Southern Portion)	387156	26 Mar 2015	1 Apr 2015	N/A	Notified
3	Construction Waste Disposal Account	7022038	16 Mar 2015	1 Apr 2015	N/A	Account approved
4	Registration as a Chemical Waste Producer (HKBCF Southern Portion)	Waste Producer Number (WPN): 5213-951-C3952-01	27 Mar 2015	27 Apr 2015	N/A	Registration completed
5	Discharge Licence under WPCO (Works Area WA3)	WT00022316-2015	1 Jun 2015	14 Aug 2015	31 Aug 2020	Issued
6	Construction Noise Permit	GW-RS0874-15	24 Jul 2015	7 Aug 2015	1 Feb 2016	Issued

# 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 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 and the 3 sides</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> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<ul style="list-style-type: none"> <li>Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li> </ul>		
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	N/A
S5.5.7.1	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:</p> <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	N/A
S5.5.2.7	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <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	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <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</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		and practicable; <ul style="list-style-type: none"> <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>		
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	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m <sup>2</sup> ), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
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 sites	V
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	N/A
<b>Sediment</b>				
S7.3	S1	1) The requirements as recommended in ETWB TC(W) 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	All construction sites	V
<b>Waste Management (Construction Noise)</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>Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</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 ETWB TC(W) 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</li> </ul>	All construction sites	N/A



EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>and wastage.</p> <ul style="list-style-type: none"> <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 should be considered for such segregation and storage.</li> </ul>		
S8.2.12-S8.3.15	WM3	<p><u>Chemical Waste</u></p> <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 labelled 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 a 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	<p><u>Sewage</u></p> <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	<p><u>General Refuse</u></p> <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. In addition, waste separation facilities for paper, aluminium cans, plastic bottles etc., should be provided.</li> <li>Training should be provided to workers about the concepts of site</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.		
<b>Water Quality (Construction Phase)</b>				
S9.11.1.7	W2	<p data-bbox="456 421 560 448"><u>Land Works</u></p> <p data-bbox="456 456 1023 533">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 data-bbox="456 542 1023 1980" style="list-style-type: none"> <li data-bbox="456 542 1023 595">• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li data-bbox="456 604 1023 712">• sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the W PCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li data-bbox="456 721 1023 878">• storm drainage shall be directed to storm drains via 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;</li> <li data-bbox="456 887 1023 963">• 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 data-bbox="456 972 1023 1025">• temporary access roads should be surfaced with crushed stone or gravel;</li> <li data-bbox="456 1034 1023 1088">• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li data-bbox="456 1097 1023 1151">• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li data-bbox="456 1160 1023 1236">• open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li data-bbox="456 1245 1023 1352">• 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 data-bbox="456 1361 1023 1438">• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> <li data-bbox="456 1447 1023 1554">• 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 data-bbox="456 1563 1023 1617">• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li data-bbox="456 1626 1023 1702">• 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 data-bbox="456 1711 1023 1787">• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li data-bbox="456 1796 1023 1930">• 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 W PCO or collected for off site disposal;</li> <li data-bbox="456 1939 1023 1980">• the Contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up</li> </ul>	Land-based works areas	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>immediately;</p> <ul style="list-style-type: none"> <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>		
<b>Ecology (Construction Phase)</b>				
S10.7	E4	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	Land-based works areas	V
S10.7	E5	Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Land-based works areas	V
S10.7	E8	<ul style="list-style-type: none"> <li>• Control vessel speed</li> <li>• Skipper training</li> <li>• Predefined and regular routes for working vessels; avoid Brother Islands.</li> </ul>	Marine Traffic	N/A
<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; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations;</li> <li>• Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed;</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><u>Mitigate both Landscape and Visual Impacts</u></p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p>	HKBCF	N/A

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

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

# Appendix H. Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

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

# Appendix I. Environmental Site Inspection Schedule

**Environmental Site Inspection Schedule for October 2015**

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

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

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





Responses to Comments on Monthly EM&A Report (October 2015)

No.	Item Reference	Comments Received	Responses
	ENPO (Ray Yan) by email dated 9 November 2015		
	Comment(s)		
1.	Section 5.1	Please review if the reporting period is correct.	Noted and revised.

