RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_4280L.16

15 June 2016

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. Darrel Kingan

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/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and Facilities
Monthly Environmental Monitoring & Audit Report for May 2016

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for May 2016 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC010/SO/RC" dated 14 June 2016) and provided to us via e-mail on 15 June 2016.

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

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)
	Atkins	Ms. Sharifah Or	(By Fax: 2890 6343)
	LCWJV	Mr. Iain Hubert	(By Fax: 3621 0180)

Internal: DY, YH, ENPO Site

Q:\Projects\HYDHZMBEEM00\02_Proj_Mgt\02_Corr\HYDHZMBEEM00_0_4280L.16.doc

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www.atkinsglobal.com

Your ref.
Our ref. 5140819/18.30/OC010/SO/RC

Date: 14 June 2016

By Post and e-mail (Donald.Ip@lcwjv.com)

Leighton – Chun Wo Joint Venture
39/F Sun Hung Kai Centre
30 Harbour Road
Hong Kong

Attn: Mr. Donald Ip

Dear Mr. Ip,

Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities –
Remaining Ancillary Buildings and Facilities
Certification of Monthly EM&A Report No. 3

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 3 for May 2016 (Revision 1) conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

Yours faithfully,
for and on behalf of
Atkins China Limited

Sharifah OR
Environmental Team Leader

cc.
1. AECOM – Mr. Darrel Kingan (By Fax.: 3468 2076)
2. ENPO/IEC – Mr. Raymond Dai & Mr. Y.H. Hui (By Fax.: 3465 2899)

路政署
HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

Contract No. HY/2014/05

Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Monthly EM&A Report No. 3
(Covering the Period from 1 May 2016 to 31 May 2016)

14 Jun 2016

Revision 1

Main Contractor

LEIGHTON 禮頓
俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Environmental Team

ATKINS

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Executive Summary

This monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) – Remaining 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 Leighton – Chun Wo Joint Venture (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

The Contract is part of Hong Kong – Zhuhai – Macao Bridge HKBCF which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. The construction works of the Contract commenced on 29 February 2016.

Atkins China 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 to the Contract.

This is the third monthly EM&A Report for the Contract which summarizes findings of the EM&A works during the reporting period from 1 to 31 May 2016.

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 AMS7 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: 4, 11, 18 and 25 May 2016

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 AMS7 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 NMS2 and 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 Change

There was no reporting change during the reporting period.

Future Key Issues

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

- Earth Works for Inbound Private Car Annexure (Building 025), Outbound X-Ray Scan Building (Building 053) and Inbound X-Ray Scan Tunnel (Building 058);
- Binding of Buildings 025, 053 and 058;
- Construction of Reinforced Concrete Structure of Inbound X-Ray Scan Building (Building 059); and
- Temporary Drainage System of WA3 Storage Area.

1 Introduction

1.1 Basic Project Information

1.1.1 This monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region. The Contract was awarded to Leighton – Chun Wo Joint Venture (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

1.1.2 The Contract is part of Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499). An Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. The construction works of the Contract commenced on 29 February 2016. The works areas of the Contract are shown in **Appendix A**.

1.1.3 The proposed works under this Contract comprise the following:

(i) Construction of the following ancillary buildings and facilities including architectural and builder works, structural steel canopy, reinforced concrete frames, foundations, curtain wall facade, building services and electrical and mechanical works:

- Public Toilets at Vehicle Clearance Plaza (VCP);
- Customs and Excise Department (C&ED) Dangerous Good Store;
- Customs Detective Dog Base Building;
- C&ED Outbound Cargo Examination Building and Examination Platform;
- Inbound Private Car Annexure;
- Outbound Private Car Annexure;
- E&M maintenance Building;
- Highways Depot & Administration Building;
- Outbound X-ray Building;
- Outbound X-ray Scan Tunnel; and
- Inbound X-ray Scan Tunnel.

(ii) Construction of civil provisions, cable containment and power supply for the following systems:

- Extra Low Voltage (ELV) installed by Contract No. HY/2013/03;
- Automatic Vehicle Clearance Support System (AVCSS) installed by Contract No. HY/2013/06; and
- Gantry Type X-ray Vehicle Inspection System installed by Contract No. HY/2014/04.

(iii) Supply and installation of Mobile X-ray Vehicle Inspection System and other standalone equipment;

(iv) Construction of minor civil engineering works at the periphery of buildings;

(v) Construction of minor Landscape hardworks and softworks; and

(vi) Other works which are shown on Drawings or specified in the Specification or which may be ordered in accordance with the Contract.

1.1.4 This is the third Monthly EM&A Report for the Contract which summarizes the audit findings of the EM&A programme during the reporting period from 1 to 31 May 2016.

1.2 Project Organisation

1.2.1 The project organization structure and lines of communication with respect to the on-site environmental management structure is 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	Darrel Kingan	3958 7339	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
Contractor (Leighton – Chun Wo Joint Venture)	Site Agent	Albert Chan	3973 0514	3621 0180
	Environmental Officer	Donald Ip	6461 8635	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Sharifah Or	2972 1802	2890 6343
24 hours complaint hotline	---	---	3958 7300	---

1.3 Construction Programme

1.3.1 A copy of the Contractor's construction programme is provided in **Appendix C**.

1.4 Construction Works Undertaken During the Reporting Period

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

- Earth Works for Building 053;
- Construction of Reinforced Concrete Structure of Building 059;
- Site Office Set-up on WA3;
- Plate Load Tests of Buildings 053 and 058;
- Binding of Building 053; and
- Rebar fixing of G/F slab of Building 053.

2 Air Quality Monitoring

2.1 Monitoring Locations

2.1.1 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.

2.1.2 The ET of the Contract or another ET of the HZMB project is required to conduct air quality monitoring at AMS6 and AMS7 as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03. **Figure 2.1** shows the locations of the air monitoring stations.

Table 2-1 Construction Dust Monitoring Locations

ID	Location Description
AMS 6(1)	Dragonair/CNAC (Group) Building
AMS 7(1)	Hong Kong SkyCity Marriott Hotel

Remark:
(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 the 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

2.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2010/02 and HY/2011/03.

2.2.2 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, µg/m³	Limit Level, µg/m³
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS 7 - Hong Kong SkyCity Marriott Hotel	370	

Table 2-3 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	173	260
AMS 7 - Hong Kong SkyCity Marriott Hotel	183	

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

2.2.4 If exceedance(s) at these station(s) 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

2.3.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2010/02, respectively.

2.3.2 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.

2.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 recorded by the ET of Contract No. HY/2010/02 during the reporting period.

3 Noise Monitoring

3.1 Monitoring Locations

3.1.1 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 impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2010/02. **Figure 3.1** shows the locations of noise monitoring stations.

Table 3-1 Construction Noise Monitoring Locations

ID	Location Description
NMS2(1)	Seaview Crescent
NMS3B(1)(2)	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

3.2.1 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 Nos. HY/2010/02.

3.2.2 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.
* Limit level is 70 dB(A) for schools and 65 dB(A) during school examination period.

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

3.2.4 If exceedance(s) at these station(s) 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.

3.3 Monitoring Results

3.3.1 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

4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. During the reporting period, site inspections were carried out on 4, 11, 18 and 25 May 2016.

4.1.2 Particular observations during the site inspections and corrective actions undertaken by the Contractor are described in **Table 4.1**.

Table 4-1 Summary of Environmental Site Inspections

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
4 May 2016	No particular environmental issue was recorded during the site inspection.	NIL	NIL
11 May 2016	A pump was put at an inlet of chemical drum at Building 059 Area. There was a potential for chemical spillage.	The pump was screwed into the inlet of chemical drum at Building 059 Area.	18 May 2016
18 May 2016	No proper label was provided for a chemical drum at Building 059 Area.	A chemical label was provided for the chemical drum at Building 059 Area.	25 May 2016
25 May 2016	No particular environmental issue was recorded during the site inspection.	NIL	NIL

4.1.3 The Contractor has rectified all observations as identified during environmental site inspections within this reporting month.

4.2 Advice on the Solid and Liquid Waste Management Status

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

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

4.2.3 The Contractor was reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage areas on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

4.3 Environmental Licenses and Permits

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

4.4 Implementation Status of Environmental Mitigation Measures

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

4.4.2 The Contractor conducts watering on all exposed soil within the Contract site and associated works areas 8 times per day when construction activities are being undertaken.

4.4.3 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

4.5.1 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.

4.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

4.5.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and 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

4.6.1 There were no complaints received in relation to the environmental impact during the reporting period. No notification of summons and prosecution was received during the reporting period.

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

5 Future Key Issues

5.1 Construction Programme for the Coming Months

5.1.1 As informed by the Contractor, the major construction activities for June 2016 are summarized in **Table 5.1**.

Table 5.1 Construction Activities for June 2016

Site Area	Description of Activities
Buildings 025, 053 and 058	Earth Works
Buildings 025, 053 and 058	Binding
Building 059	Construction of Reinforced Concrete Structure
WA3 Storage Area	Temporary Drainage System

5.2 Environmental Site Inspection Schedule for the Coming Month

5.2.1 The tentative schedule for weekly site inspections for June 2016 is provided in **Appendix I**.

6 Conclusions

6.1 Conclusions

6.1.1 The construction works of the Contract commenced on 29 February 2016. The third Monthly EM&A Report summarizes findings of the EM&A works during the reporting period from 1 to 31 May 2016.

6.1.2 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.

6.1.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

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

6.1.5 Environmental site inspections were carried out on 4, 11, 18 and 25 May 2016. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

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

6.1.7 No notification of summons and successful prosecution was received during the reporting period.

FIGURES

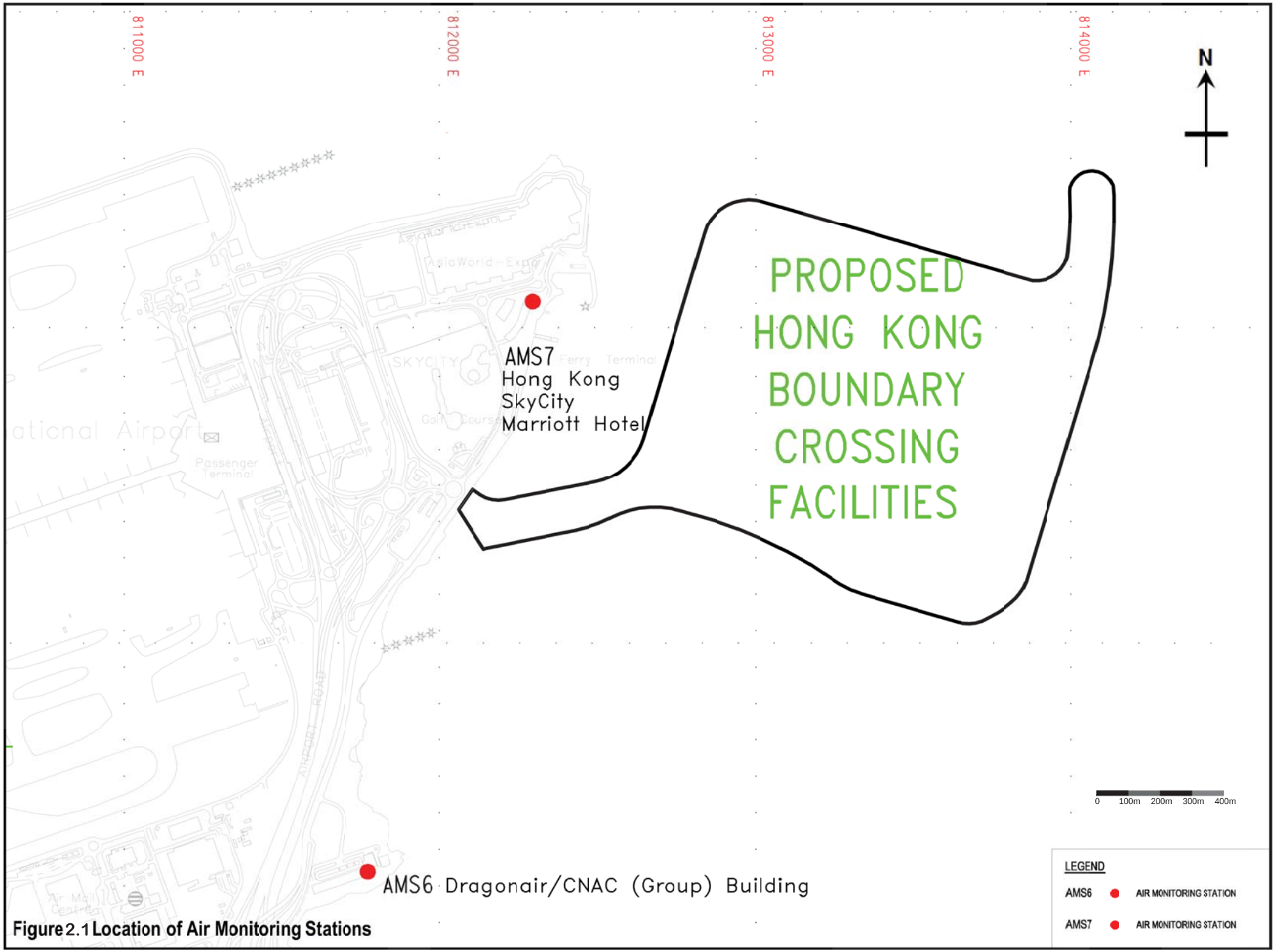


Figure 2.1 Location of Air Monitoring Stations

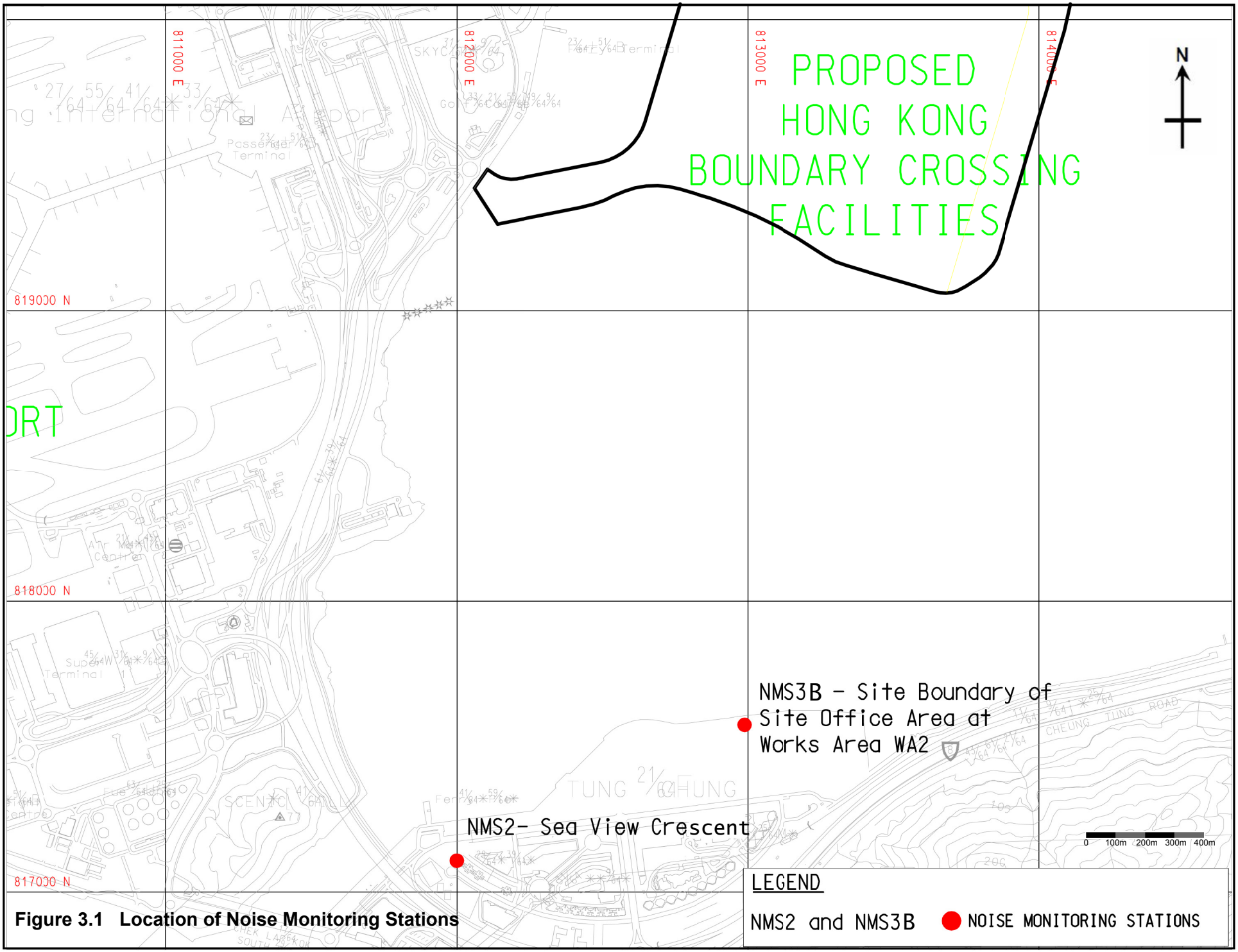
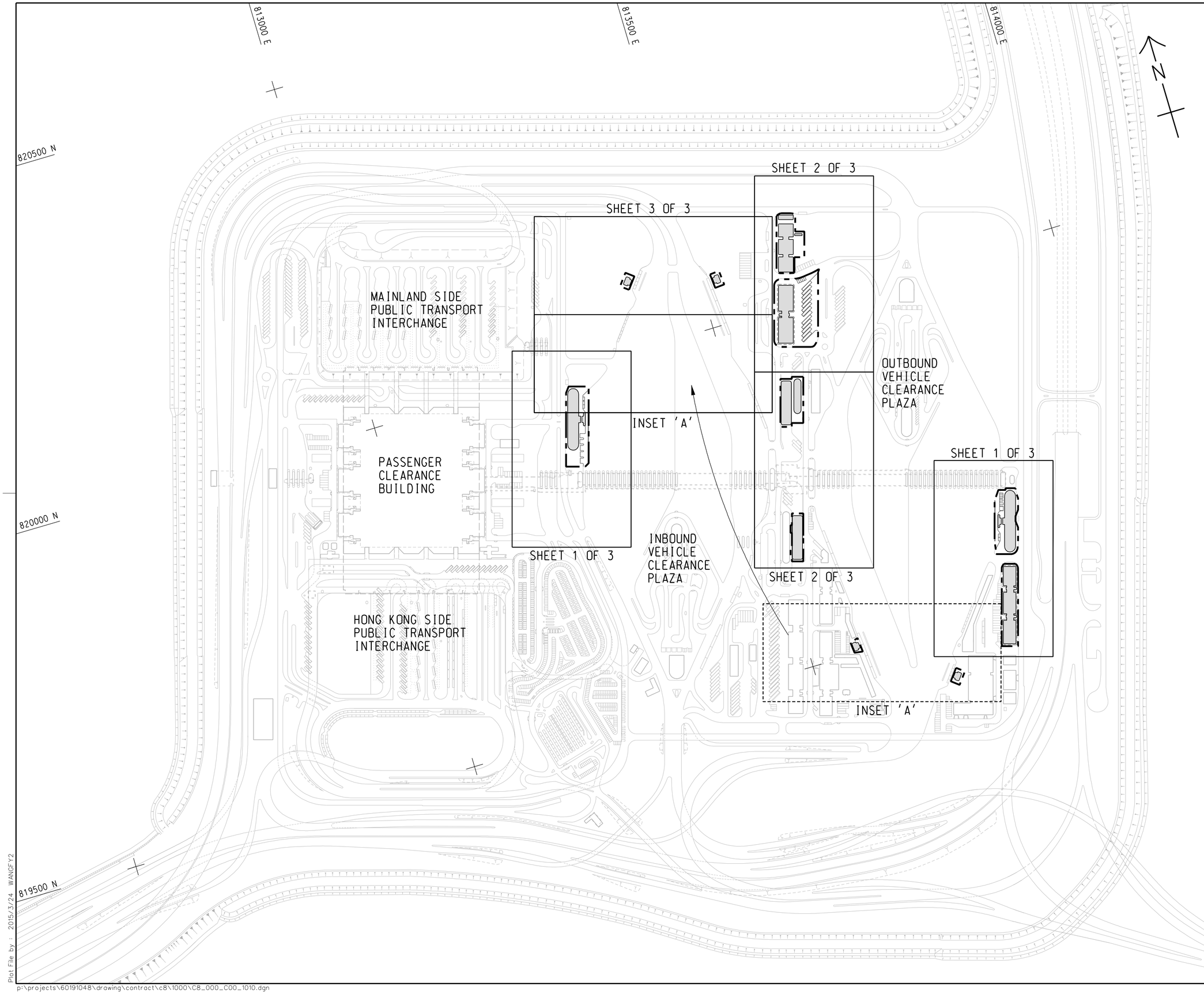


Figure 3.1 Location of Noise Monitoring Stations

APPENDIX A

Location of Works Areas



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-	TENDER DRAWING	BWCW	SCI	MAR.15

路政署
HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

KEY PLAN

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1010

DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2014/05	P. Dir. APPROVED 批准人 TKH	
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SCALE 比例 A1 1 : 2500			
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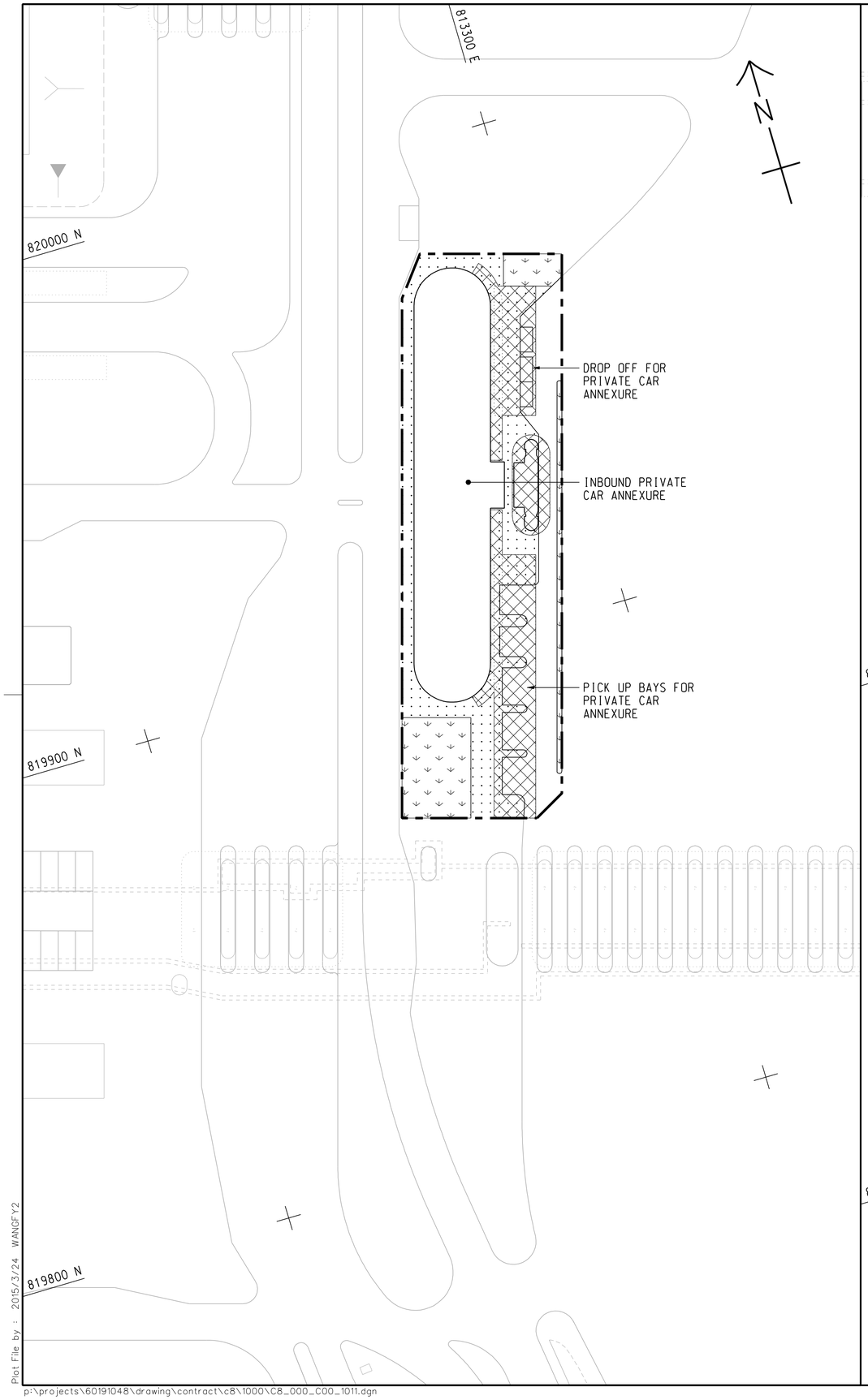

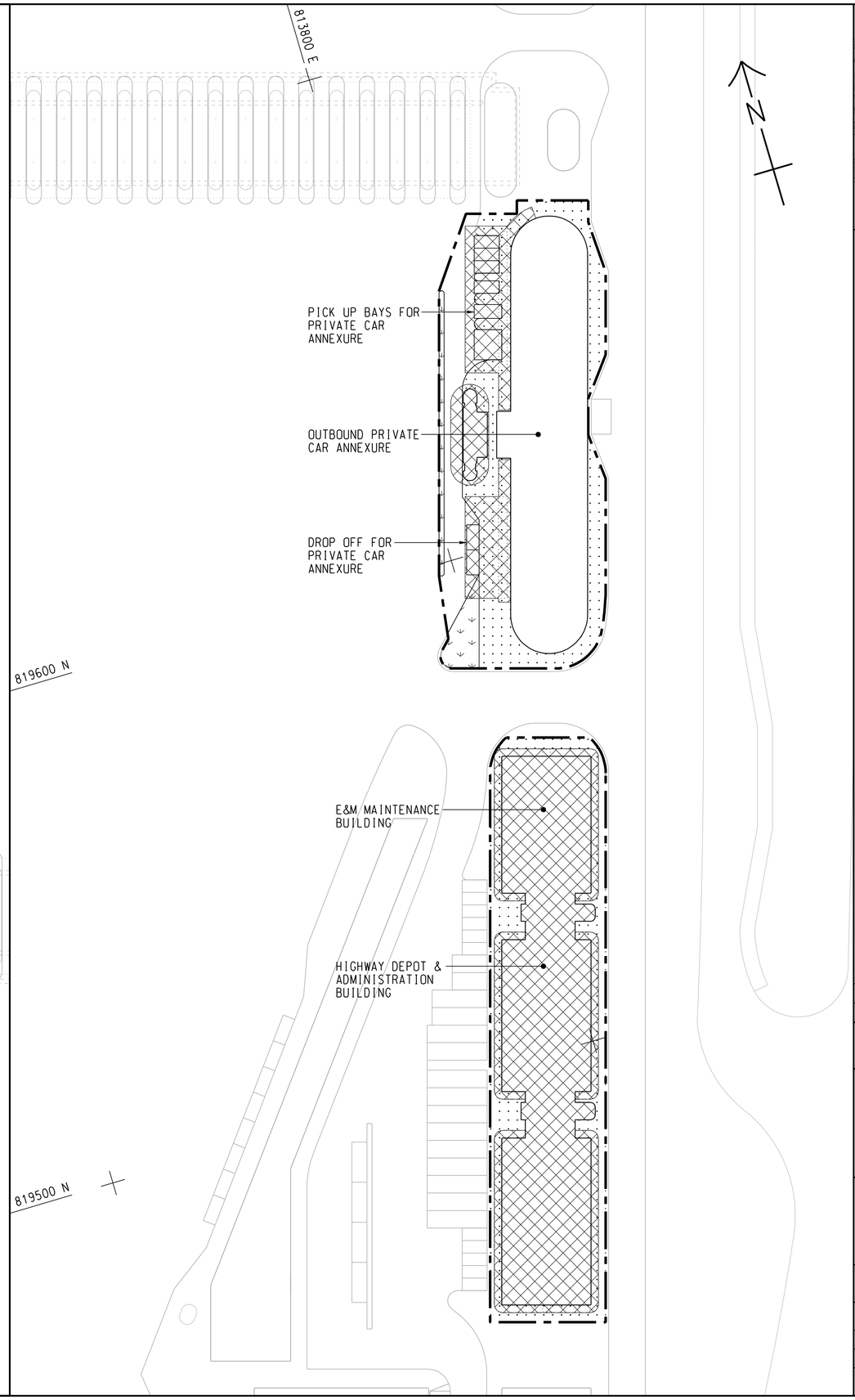

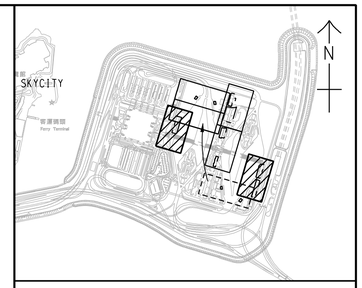

KEY PLAN
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NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1012 AND 1013.

LEGEND:

- SITE BOUNDARY
- FOOTPATH (DETAILS REFER TO LANDSCAPE DETAIL DRAWINGS)
- CANOPY
- PLANTING AREA

REV. 修訂	DESCRIPTION 內容摘要	B.C.	P.C. CHECKED 覆核	DATE 日期
-	TENDER DRAWING	BWCW	SCT	MAR.15

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

SHEET 1 OF 3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1011

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2014/05
P. Dir. APPROVED 批准人	TKH	DRAWN BY 繪圖	WSY
STATUS 階段		SCALE 比例	A1 1 : 500
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813700 E

819900 N

820100 N

C&ED DANGEROUS GOOD STORE

DOG SWIMMING POOL & OUTDOOR AREA

CUSTOMS DETECTIVE DOG BASE BUILDING

820000 N

C&ED OUTBOUND CARGO EXAMINATION BUILDING AND EXAMINATION PLATFORM

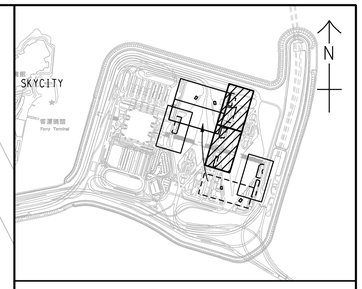
819800 N

819700 N

OUTBOUND X-RAY BUILDING

OUTBOUND X-RAY SCAN BUILDING

INBOUND X-RAY SCAN BUILDING



KEY PLAN

SCALE 1 : 20000

NOTES:

1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60191048/C8/000/C00/1011.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1011 AND 1013.

REV. 修訂	DESCRIPTION 內容摘要	D.E.	P.E. CHECKED 查核	DATE 日期
-	TENDER DRAWING	BWCW	SCI	MAR.15

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

SHEET 2 OF 3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1012

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2014/05
DRAWN BY 繪圖	WSY	P. Dir. APPROVED 批准人	TKH
SCALE 比例	A1 1 : 500	STATUS 狀態	
DIMENSIONS ARE IN 尺寸單位	METRES		

Plot File by : 2015/3/24 WANGFY2

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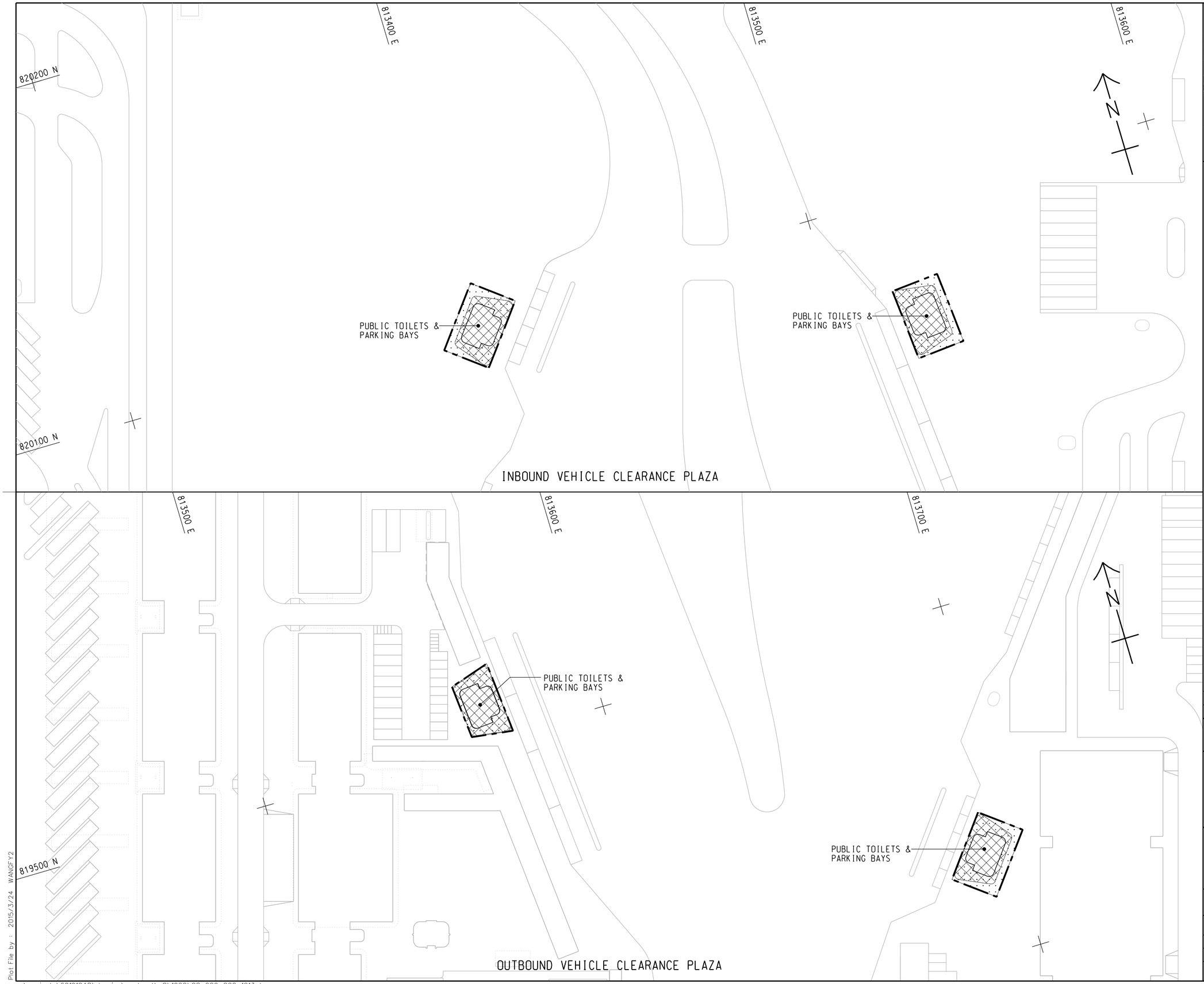

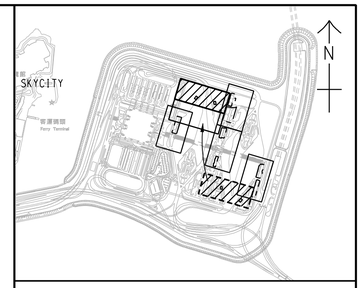

KEY PLAN
SCALE 1 : 20000

NOTES:

1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60191048/C8/000/C00/1011.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1011 AND 1012.

REV. 修訂	DESCRIPTION 內容摘要	D.C.	P.C. CHECKED 複核	DATE 日期
-	TENDER DRAWING	BWCW	SCI	MAR.15

路政署
HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE
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GENERAL LAYOUT PLAN

SHEET 3 OF 3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1013

DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2014/05	P. Dir. APPROVED 批准人 TKH
DRAWN BY 繪圖 WSY	STATUS 階段	
SCALE 比例 A1 1 : 500		
DIMENSIONS ARE IN 尺寸單位 METRES		

Plot File by : 2015/3/24 WANGFY2

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SETTING OUT POINT

POINT	EASTING	NORTHING
301	817467.265	819162.683
302	817314.741	819069.828
303	817327.338	819049.295
304	817440.865	819117.811
305	817340.825	819027.314
306	817387.350	819023.403
307	817387.861	819043.396
308	817466.133	819091.047
309	817469.783	819087.181
310	817513.449	819113.764
311	817347.717	819016.082
312	817450.595	819032.307
313	817445.369	819013.157
314	817531.154	819001.065
315	817533.345	818991.306
316	817620.269	819000.620
317	817495.827	819059.596
318	817522.110	819075.388
319	817566.404	819028.472
320	817568.507	819008.526
321	817569.551	818998.621

817200 E

817400 E

817600 E

819200 N

819000 N

NORTH LANTAU HIGHWAY

CHEUNG TUNG ROAD

小濠灣污水處理廠
Siu Ho Wan Sewage Treatment Works

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/03

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/09

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2013/02

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2013/01

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2013/03

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2014/05

10m WIDE COMMON ACCESS TO BE MAINTAINED BY CONTRACT NO. HY/2010/02

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2010/02

10m WIDE COMMON ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/01. UPON COMMENCEMENT OF CONTRACT NO. HY/2013/03. THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT NO. HY/2013/01 TO CONTRACT NO. HY/2013/03.

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2013/04

10m WIDE ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/01. UPON COMMENCEMENT OF CONTRACT No. HY/2013/03, THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT No. HY/2013/01 TO CONTRACT No. HY/2013/03.

10m WIDE ACCESS TO BE CONSTRUCTED AND MAINTAINED BY CONTRACT No. HY/2013/03.

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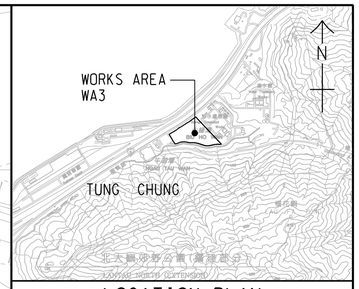

LOCATION PLAN
SCALE 1 : 25000

NOTES:

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

LEGEND:

- WORKS AREA BOUNDARY
- PORTION 3.1
- PORTION 3.2
- PORTION 3.3
- PORTION 3.4
- PORTION 3.5
- PORTION 3.6
- PORTION 3.7
- PORTION 3.8
- PORTION 3.9
- PORTION 3.10
- NON-BUILDING AREA 8200m² (WHOLE)

REV. 修訂	DESCRIPTION 內容摘要	D.C. P.C. CHECKED 查核	DATE 日期
-	TENDER DRAWING	BWCW SCI	MAR.15

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

WORKS AREA WA3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1051

DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2014/05	P. Dir. APPROVED 批准人 TKH
DRAWN BY 繪圖 WSY	STATUS 階段	
SCALE 比例 A1 1 : 1000		
DIMENSIONS ARE IN 尺寸單位 METRES	© COPYRIGHT RESERVED 版權所有	

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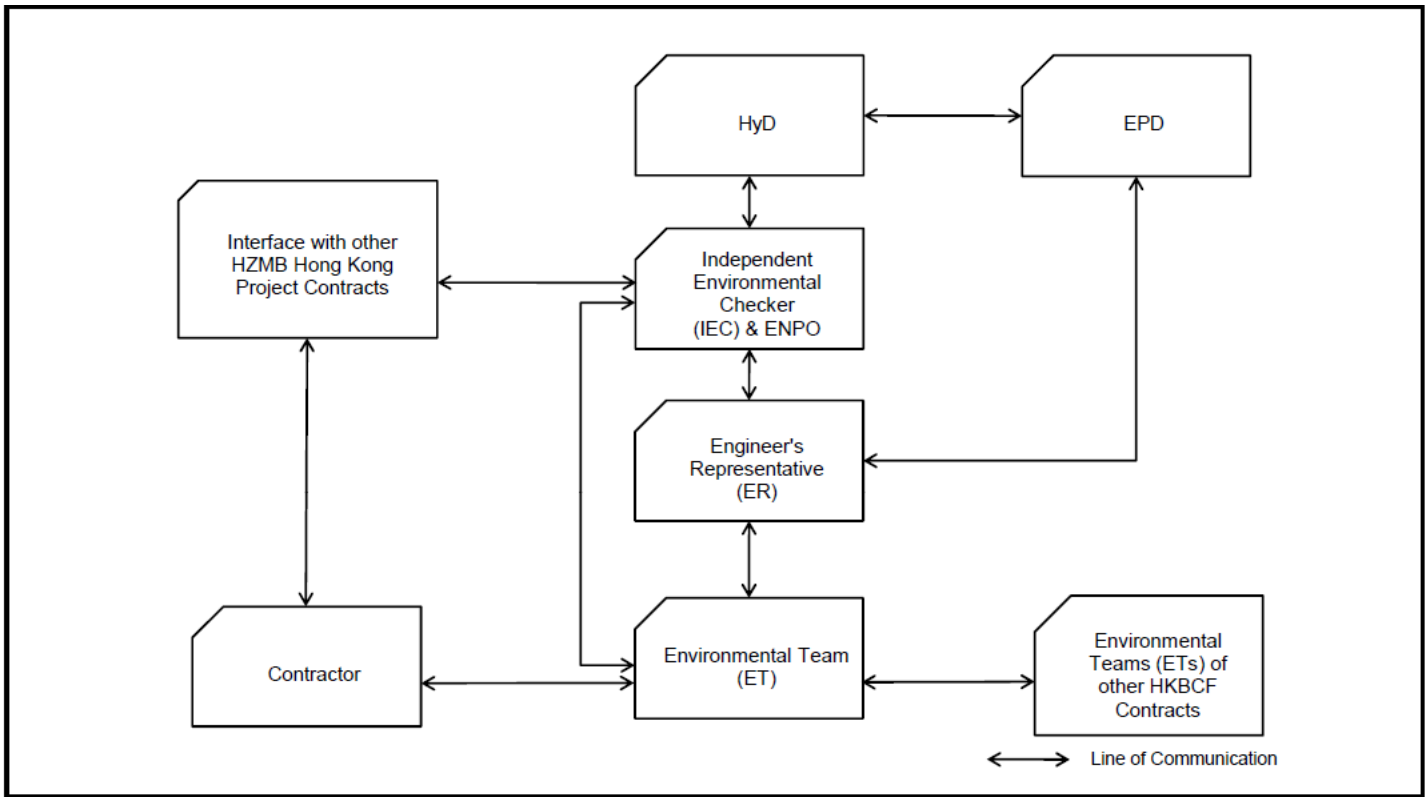
APPENDIX B

Project Organization for Environmental Works

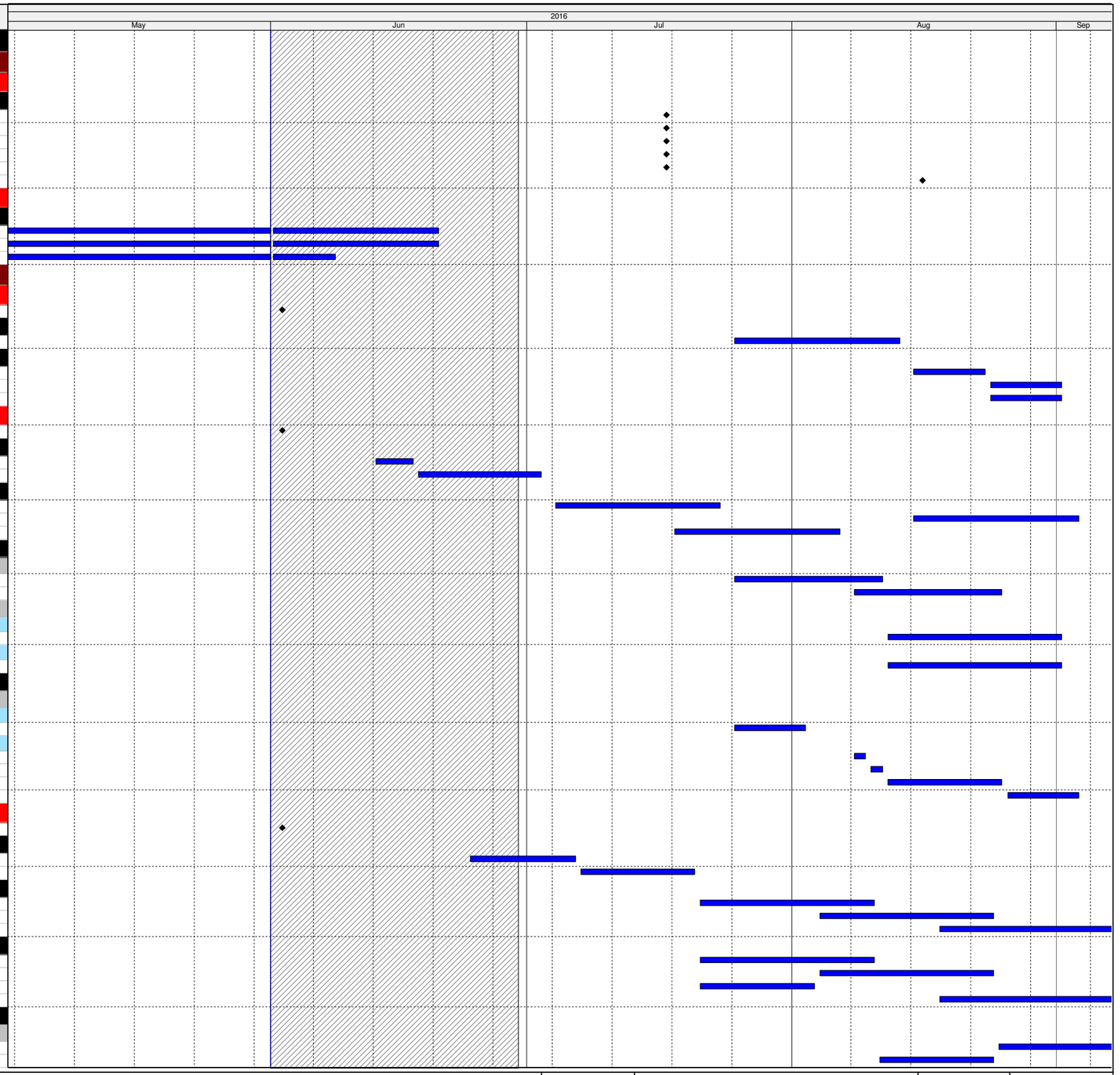
Project Organisation for Environmental Works



APPENDIX C

Construction Programme

Activity ID	Activity Name	Original Duration	Start	Finish
HY/2014/05 HKMZB HKBCF - Remaining Ancillary Buildings and Facilities - 3MRP - I				
GENERAL/PRELIMINARIES				
Salient Key Dates and Milestones				
Commencement				
SECTION IX	Section subject to Excision Section IX - (Day 200) Building 050 (H1)	0	17-Jul-16*	
SECTION VIII	Section subject to Excision Section VIII - (Day 200) Building 044 and 045	0	17-Jul-16*	
SECTION X	Section subject to Excision Section X - (Day 200) Building 050 (H2)	0	17-Jul-16*	
SECTION XI	Section subject to Excision Section XI - (Day 200) Building 050 (A1)	0	17-Jul-16*	
SECTION XII	Section subject to Excision Section XII - (Day 200) Building 050 (A2)	0	17-Jul-16*	
SECTION XIII	Section subject to Excision Section XIII - (Day 230) Landscaping Works	0	16-Aug-16*	
Submissions and Approvals				
Initial Submission and Procurement				
RAB-XX-0360	Appoint Glass canopy specialist contractor	30	18-Jan-16 A	20-Jun-16
RAB-XX-0365	Submission of design and shop drawings of glass canopy at Building 059 for approval before constr	60	31-Jan-16 A	20-Jun-16
RAB-XX-0370	Coordination of Radiation Shielding doors frame and louvers details (before casting of concrete walls	50	18-Jan-16 A	08-Jun-16
CONSTRUCTION				
Building 021 - C&ED Dangerous Goods Store				
RAB-21-0100	Possession of Portion G2 - If Exercised	0	02-Jun-16*	
Raft				
RAB-21-0120	021 - Construct Raft Foundations and Base Slab	18	25-Jul-16	13-Aug-16
Structure				
RAB-21-0140	021 - Construct Supporting Columns to +11mPD GL3-4	8	15-Aug-16	23-Aug-16
RAB-21-2230	021 - Construct External Wall to +11mPD GL3-4	8	24-Aug-16	01-Sep-16
RAB-21-2260	021 - Construct Supporting Columns to +11mPD GL1-2	8	24-Aug-16	01-Sep-16
Building 022 - Customs Detective Dog Base Building				
RAB-22-0100	Possession of Portion G3 - If Exercised	0	02-Jun-16*	
Excavation				
RAB-22-0120	022 - Open cut excavation down to formation level (1047m³) (incl 021)	5	13-Jun-16	17-Jun-16
RAB-22-0130	022 - Underground Utilities/Temp Drainage (Incl 021)	12	18-Jun-16	02-Jul-16
Raft Foundations				
RAB-22-0140	022 - Construct Raft Foundation and Baseslab North	18	04-Jul-16	23-Jul-16
RAB-22-0190	022 - Construct Raft Foundations and Baseslab Middle - Shrinkage Pour	18	15-Aug-16	03-Sep-16
RAB-22-0260	022 - Construct Raft Foundations and Baseslab South	18	18-Jul-16	06-Aug-16
Structure				
External Walls				
RAB-22-0230	022 - Construct External Walls and Support Columns to +11.00mPD (N)	16	25-Jul-16	11-Aug-16
RAB-22-0390	022 - Construct External Walls and Support Columns to +11.00mPD (S)	16	08-Aug-16	25-Aug-16
Roof Slab				
North Structure				
RAB-22-0270	022 - Construct R/F Suspended Slab at +11.00mPD Bay 1 (240m²) (Approx 36m³)	18	12-Aug-16	01-Sep-16
South Structure				
RAB-22-0430	022 - Construct R/F Suspended Slab at +11.00mPD Bay 1 (240m²) (Approx 36m³)	18	12-Aug-16	01-Sep-16
ABWF/E&M				
Specialist Installations				
Window Wall				
RAB-23-7090	022 - Install Window Wall Cast In Items (North)	8	25-Jul-16	02-Aug-16
Dog Swimming Pool				
RAB-22-0160	022 - Setting out of Dog Swimming Pool	2	08-Aug-16	09-Aug-16
RAB-22-0170	022 - Excavate for Dog Swimming Pool	2	10-Aug-16	11-Aug-16
RAB-22-0200	022 - RC Structure	12	12-Aug-16	25-Aug-16
RAB-22-0220	022 - Construct Staircase	8	26-Aug-16	03-Sep-16
Building 023 - C&ED Outbound Cargo Examination Building and Examination Platform				
RAB-23-5000	Possession of Portion G1	0	02-Jun-16*	
Excavation				
RAB-23-5020	023 - Open cut excavation down to formation level (GL 1-10) (2295m³)	10	24-Jun-16	06-Jul-16
RAB-23-5030	023 - Underground Utilities/Temp Drainage	12	07-Jul-16	20-Jul-16
Raft Foundations - Inspection Platform				
RAB-23-5050	023 - Construct Raft Foundations for Platform Bay 1	18	21-Jul-16	10-Aug-16
RAB-23-5090	023 - Construct Raft Foundations for Platform Bay 2	18	04-Aug-16	24-Aug-16
RAB-23-5150	023 - Construct Raft Foundations for Platform Bay 3	18	18-Aug-16	07-Sep-16
Raft Foundations - Main Building				
RAB-23-5040	023 - Construct Raft Foundations for Main Building Bay 1 (GL8-10) (376.6m²)	18	21-Jul-16	10-Aug-16
RAB-23-5080	023 - Construct Raft Foundations for Main Building Bay 2 (GL6-8) (376.6m²)	18	04-Aug-16	24-Aug-16
RAB-23-5100	023 - Construct Lift Pit for L-01 (GL5-6)	12	21-Jul-16	03-Aug-16
RAB-23-5180	023 - Construct Raft Foundations for Main Building Bay 4 (GL3-5) (376.6m²)	18	18-Aug-16	07-Sep-16
Structure				
Supporting Walls and Columns to +12.85mPD				
RAB-23-2180	023 - Install FS and SPR RC Water Tanks (G/F North)	12	25-Aug-16	07-Sep-16
RAB-23-5110	023 - Construct External Walls to +12.85mPD Bay 1 (GL8-10)	12	11-Aug-16	24-Aug-16



Actual Work

Remaining Work

Critical Remaining Work

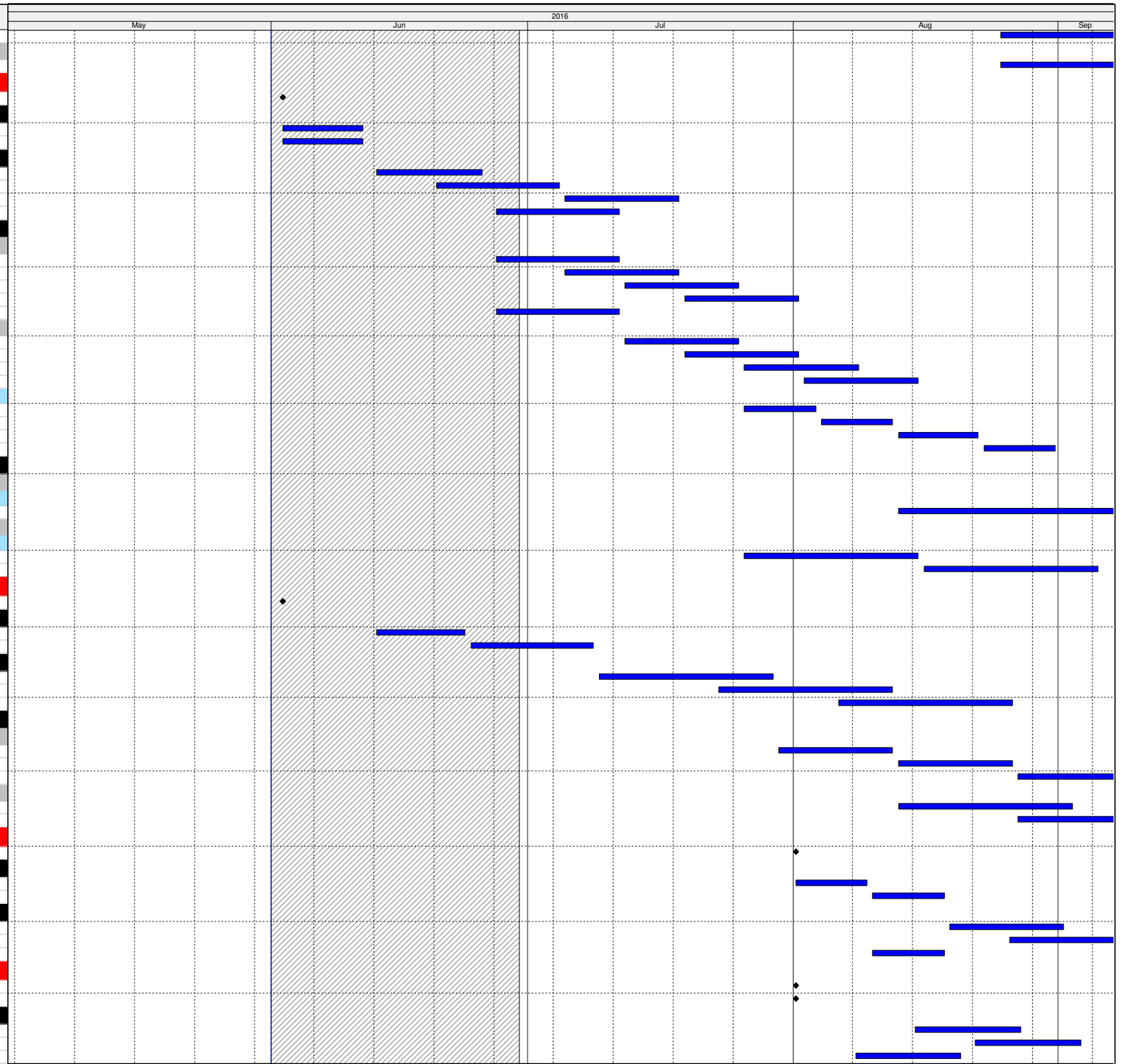
Milestone

Three Month Rolling Programme

HKMZB HKBCF - Remaining Ancillary Buildings and Facilities

Date	Revision	Checked	Approved
01-May-16	Three Month Rolling Programme	JW/SGJ	

Activity ID	Activity Name	Original Duration	Start	Finish
RAB-23-5160	023 - Construct External Walls to +12.85mPD Bay 2 (GL6-8)	12	25-Aug-16	07-Sep-16
First Floor				
RAB-23-5200	023 - Construct 1/F Suspended Slab +12.85mPD Bay 1 (376.6m²) (56.5m³)	12	25-Aug-16	07-Sep-16
Building 025 - Inbound Private Car Annexure				
RAB-25-0100	Possession of Portion D - If Exercised	0	02-Jun-16*	
Excavation				
RAB-25-0120	025 - Open cut excavation down to formation level (1463m³)	8	02-Jun-16	11-Jun-16
RAB-25-0130	025 - Underground Utilites and Temp Drainage Works	8	02-Jun-16	11-Jun-16
Raft Foundations				
RAB-25-0140	025 - Construct Raft Foundations for Main Building North Bay 1 (321m²)	12	13-Jun-16	25-Jun-16
RAB-25-0160	025 - Construct Raft Foundations for Main Building Middle Bay 2 (321m²)	12	20-Jun-16	04-Jul-16
RAB-25-0190	025 - Construct Raft Foundations for Main Building Middle Bay 3 (321m²) - Shrinkage Strip	12	05-Jul-16	18-Jul-16
RAB-25-0240	025 - Construct Raft Foundations for Main Building South Bay 4 (321m²)	12	27-Jun-16	11-Jul-16
Structure				
External Walls				
RAB-25-0180	025 - Construct Walls and Columns to +12.65mPD North Bay 1	12	27-Jun-16	11-Jul-16
RAB-25-0220	025 - Construct Walls and Columns to +12.65mPD Middle Bay 2	12	05-Jul-16	18-Jul-16
RAB-25-0270	025 - Construct Walls and Columns to +12.65mPD South Bay 4	12	12-Jul-16	25-Jul-16
RAB-25-0300	025 - Construct Walls and Columns to +12.65mPD Middle Bay 3	12	19-Jul-16	01-Aug-16
RAB-25-600	025 - Construct SPR & FS RC Watertanks (GF North)	12	27-Jun-16	11-Jul-16
Roof Slab				
RAB-25-0200	025 - Construct Roof floor up to +12.65mPD North Bay 1 (321m²) (Approx 48m³)	12	12-Jul-16	25-Jul-16
RAB-25-0280	025 - Construct Roof floor up to +12.65mPD Middle Bay 2 (321m²) (Approx 48m³)	12	19-Jul-16	01-Aug-16
RAB-25-0310	025 - Construct Roof floor up to +12.65mPD South Bay 4 (321m²) (Approx 48m³)	12	26-Jul-16	08-Aug-16
RAB-25-0370	025 - Construct Roof floor up to +12.65mPD Middle Bay 3 (321m²) (Approx 48m³)	12	02-Aug-16	15-Aug-16
Cure and Strip				
RAB-25-0230	025 - Cure and Strip False/Formwork Bay 1	8	26-Jul-16	03-Aug-16
RAB-25-0290	025 - Cure and Strip False/Formwork Bay 2	8	04-Aug-16	12-Aug-16
RAB-25-0340	025 - Cure and Strip False/Formwork Bay 4	8	13-Aug-16	22-Aug-16
RAB-25-0410	025 - Cure and Strip False/Formwork Bay 3	8	23-Aug-16	31-Aug-16
ABWF/E&M				
Internal Finishes				
Degree 1				
RAB-25-0460	025 - Construct Blockwork Walls (2146m²)	36	13-Aug-16	24-Sep-16
Specialist Installations				
IMMD Kiosk				
RAB-25-0250	025 - Construct Kiosk Baseslab and Walls	18	26-Jul-16	15-Aug-16
RAB-25-0320	025 - Construct Kiosk Roof Structure	18	16-Aug-16	05-Sep-16
Building 032 - Outbound Private Car Annexure				
RAB-32-0100	Possession of Portion E - If Exercised	0	02-Jun-16*	
Excavation				
RAB-32-0120	032 - Open cut excavation down to formation level (2831m³)	10	13-Jun-16	23-Jun-16
RAB-32-0130	032 - Underground Utilites and Temp Drainage Works	12	24-Jun-16	08-Jul-16
Raft Foundations				
RAB-32-0140	032 - Construct Raft Foundations for Main Building North Bay 1 (321m²)	18	09-Jul-16	29-Jul-16
RAB-32-0160	032 - Construct Raft Foundations for Main Building Middle Bay 2 (321m²)	18	23-Jul-16	12-Aug-16
RAB-32-0240	032 - Construct Raft Foundations for Main Building South Bay 4 (321m²)	18	06-Aug-16	26-Aug-16
Structure				
External Walls				
RAB-32-0180	032 - Construct Walls and Columns to +12.65mPD North Bay 1	12	30-Jul-16	12-Aug-16
RAB-32-0220	032 - Construct Walls and Columns to +12.65mPD Middle Bay 2	12	13-Aug-16	26-Aug-16
RAB-32-0270	032 - Construct Walls and Columns to +12.65mPD South Bay 4	12	27-Aug-16	09-Sep-16
Roof Slab				
RAB-32-0200	032 - Construct Roof floor upto +12.65mPD North Bay 1 (321m²) (Approx 48m³)	18	13-Aug-16	02-Sep-16
RAB-32-0280	032 - Construct Roof floor upto +12.65mPD Middle Bay 2 (321m²) (Approx 48m³)	18	27-Aug-16	17-Sep-16
Building 044 - E&M Maintenance Building				
RAB-44-0100	Possession of Portion F - If Exercised (Day 215)	0	01-Aug-16*	
Excavation				
RAB-44-0120	044 - Open cut excavation down to formation level (Incl 045) (2600m³)	8	01-Aug-16	09-Aug-16
RAB-44-0130	044 - Underground Utilities/Temp Drainage (Incl 045)	8	10-Aug-16	18-Aug-16
Raft				
RAB-44-0140	044 - Construct Raft Foundations for Main Building Bay 1 (North)(242m²)	12	19-Aug-16	01-Sep-16
RAB-44-0160	044 - Construct Raft Foundations for Main Building Bay 2 (South)(242m²)	12	26-Aug-16	08-Sep-16
RAB-45-1140	044 - Construct lift pit for L-01	8	10-Aug-16	18-Aug-16
Building 045 - Highways Depot & Administration Building				
RAB-45-0100	Possession of Portion F - If Exercised (Day 215)	0	01-Aug-16*	
RAB-45-0110	Possession of Portion B - If Exercised (Day 215)	0	01-Aug-16*	
Raft				
RAB-45-0150	045 - Construct Raft Foundations for Main Building Bay 3 (428m²)	12	15-Aug-16	27-Aug-16
RAB-45-0170	045 - Construct Raft Foundations for Main Building Bay 4 (419m³)	12	22-Aug-16	03-Sep-16
RAB-45-0200	045 - Construct Raft Foundations for Main Building Bay 5 (428m²)	12	08-Aug-16	20-Aug-16



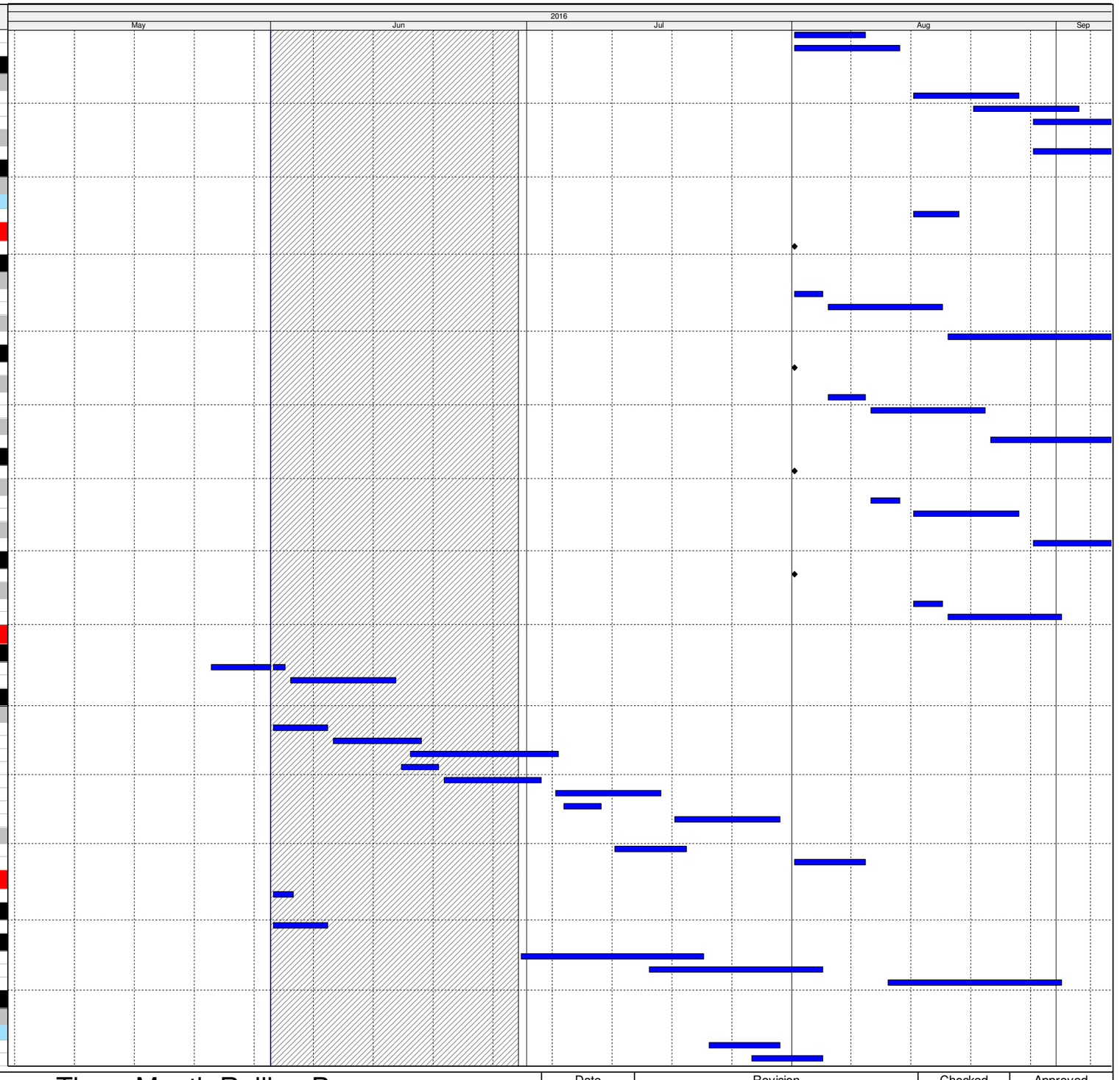
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Three Month Rolling Programme

HKMZB HKBCF - Remaining Ancillary Buildings and Facilities

Date	Revision	Checked	Approved
01-May-16	Three Month Rolling Programme	JW/SGJ	

Activity ID	Activity Name	Original Duration	Start	Finish
RAB-45-1130	045 - Construct lift pit for L-01	8	01-Aug-16	09-Aug-16
RAB-45-1150	045 - Construct Raft Foundations for Main Building Bay 6 (428m²)	12	01-Aug-16	13-Aug-16
Structure				
Ground to First Floor				
RAB-45-0260	045 - Construct External Walls and Support Columns to +12.15mPD Bay 6	12	15-Aug-16	27-Aug-16
RAB-45-1170	045 - Construct External Walls and Support Columns to +12.15mPD Bay 5	12	22-Aug-16	03-Sep-16
RAB-45-1180	045 - Construct External Walls and Support Columns to +12.15mPD Bay 3	12	29-Aug-16	10-Sep-16
First Floor				
RAB-45-0290	045 - Construct 1/F Suspended Slab at +12.15mPD Bay 6 (South) (285m²) (approx 86m³)	12	29-Aug-16	10-Sep-16
ABWF/E&M				
Specialist Installations				
Window Wall				
RAB-23-7120	045 - Install Window Wall Cast in Items G/F	6	15-Aug-16	20-Aug-16
Building 050 - Public Toilets Type 2				
RAB-50-1000	Possession of Portion H1 - If Exercised	0	01-Aug-16*	
Public Toilet (Portion H1)				
Excavation				
RAB-50-1020	050 H1 - Open cut excavation down to formation level (370m³)	4	01-Aug-16*	04-Aug-16
RAB-50-1030	050 H1 - Underground Utilties and Drainage	12	05-Aug-16	18-Aug-16
Raft				
RAB-50-1040	050 H1 - Construct Raft Foundation (140m²) (91m³)	18	19-Aug-16	08-Sep-16
Public Toilet (Portion H2)				
RAB-50-2000	Possession of Portion H2 - If Exercised	0	01-Aug-16*	
Excavation				
RAB-50-2020	050 H2 - Open cut excavation down to formation level (370m³)	4	05-Aug-16	09-Aug-16
RAB-50-2030	050 H2 - Underground Utilties and Drainage	12	10-Aug-16	23-Aug-16
Raft				
RAB-50-2040	050 H2 - Construct Raft Foundation(140m²) (91m³)	18	24-Aug-16	13-Sep-16
Public Toilet (Portion A1)				
RAB-50-3000	Possession of Portion A1 - If Exercised	0	01-Aug-16*	
Excavation				
RAB-50-3020	050 A1 - Open cut excavation down to formation level (370m³)	4	10-Aug-16	13-Aug-16
RAB-50-3030	050 A1 - Underground Utilties and Drainage	12	15-Aug-16	27-Aug-16
Raft				
RAB-50-3040	050 A1 - Construct Raft Foundation	18	29-Aug-16	19-Sep-16
Public Toilet (Portion A2)				
RAB-50-4000	Possession of Portion A2 - If Exercised	0	01-Aug-16*	
Excavation				
RAB-50-4020	050 A2 - Open cut excavation down to formation level (370m³)	4	15-Aug-16	18-Aug-16
RAB-50-4030	050 A2 - Underground Utilties and Drainage	12	19-Aug-16	01-Sep-16
Building 059 - Inbound X-Ray Scan Tunnel				
Raft				
RAB-59-285	059 - Place blinding layer (South)	2	25-May-16 A	02-Jun-16
RAB-59-290	059 - Construct G/F - South GL1-6	10	03-Jun-16	15-Jun-16
Structure				
Walls, Columns and Roof				
RAB-59-0230	059 - Construct 600mm high kicer for North Walls	6	01-Jun-16*	07-Jun-16
RAB-59-0240	059 - Construct North Walls & Columns to +12.4mPD	9	08-Jun-16	18-Jun-16
RAB-59-0250	059 - Construct North Walls & Columns to +17.375mPD	14	17-Jun-16	04-Jul-16
RAB-59-0260	059 - Construct 600mm high kicer for South Walls	4	16-Jun-16	20-Jun-16
RAB-59-0300	059 - Construct South Walls to +12.4mPD	10	21-Jun-16	02-Jul-16
RAB-59-0310	059 - Construct South Walls to +17.375mPD	12	04-Jul-16	16-Jul-16
RAB-59-420	059 - Construct Roof floor and parapets up to +17.375mPD North	5	05-Jul-16	09-Jul-16
RAB-59-430	059 - Construct Roof floor and parapets up to +17.375mPD South	12	18-Jul-16	30-Jul-16
Cure and Strip				
RAB-59-0290	059 - Cure and Strip Roof floor up to +17.375mPD North	8	11-Jul-16	19-Jul-16
RAB-59-0340	059 - Cure and Strip Roof floor up to +17.375mPD South	8	01-Aug-16	09-Aug-16
Building 058 - Outbound X-Ray Scan Tunnel				
RAB-58-0120	058 - Cone Penetration Test	3	01-Jun-16*	03-Jun-16
Excavation				
RAB-58-0150	058 - Plate load test & Open cut excavation down to Foundation Level	6	01-Jun-16*	07-Jun-16
Raft				
RAB-58-0160	058 - Construct Raft Foundation - North GL8-12 (313m²) (204m³)	18	30-Jun-16	21-Jul-16
RAB-58-0170	058 - Construct Raft Foundation - South GL1-5 (313m²) (204m³)	18	15-Jul-16	04-Aug-16
RAB-58-0190	058 - Construct Raft Foundation - Middle GL5-8 (258m²) (167m³) - Shrinkage Strip	18	12-Aug-16	01-Sep-16
Structure				
Walls				
North				
RAB-58-0210	058 - Construct North Walls to +17.375mPD (1-2) Corner Curved Walls	8	22-Jul-16	30-Jul-16
RAB-58-0230	058 - Construct North Walls to +17.375mPD (3-4)	8	27-Jul-16	04-Aug-16



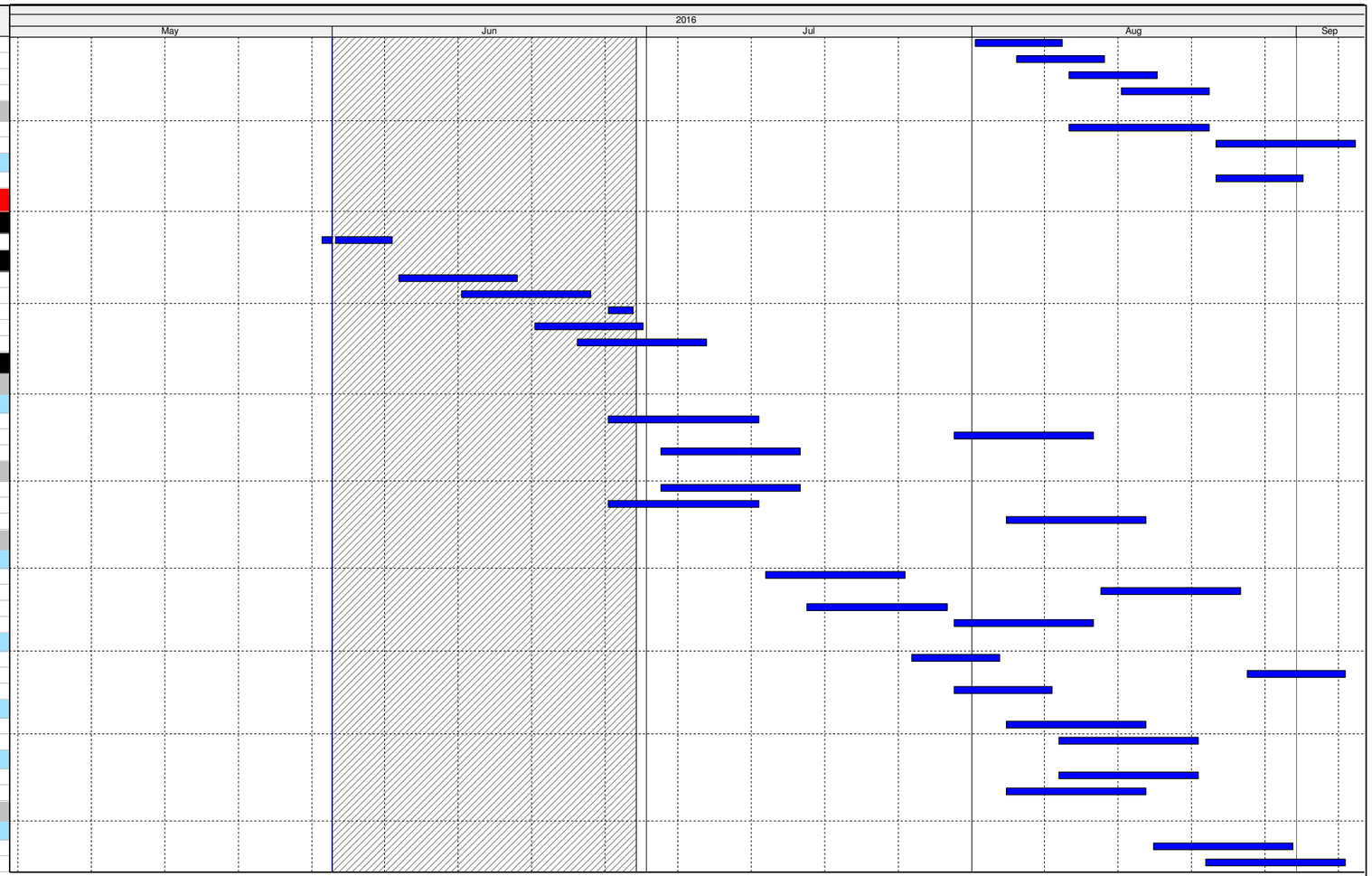
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Three Month Rolling Programme

HKMZB HKBCF - Remaining Ancillary Buildings and Facilities

Date	Revision	Checked	Approved
01-May-16	Three Month Rolling Programme	JW/SGJ	

Activity ID	Activity Name	Original Duration	Start	Finish
RAB-58-0240	058 - Construct North Walls to +17.375mPD (5-6)	8	01-Aug-16	09-Aug-16
RAB-58-0250	058 - Construct North Walls to +17.375mPD (7-8)	8	05-Aug-16	13-Aug-16
RAB-58-0260	058 - Construct North Walls to +17.375mPD (9-10)	8	10-Aug-16	18-Aug-16
RAB-58-0280	058 - Construct North Walls to +17.375mPD (10-12)	8	15-Aug-16	23-Aug-16
Roof Slabs				
RAB-58-0270	058 - Construct Roof floor to +17.375mPD Pour 1 (227m²) (34m³)	12	10-Aug-16	23-Aug-16
RAB-58-0320	058 - Construct Roof floor to +17.375mPD Pour 2 (214m²) (32m³)	12	24-Aug-16	06-Sep-16
Cure and Strip				
RAB-58-0290	058 - Cure and Strip Roof floor to +17.375mPD Pour 1	8	24-Aug-16	01-Sep-16
Building 053 - Outbound X-Ray Building				
Excavation				
RAB-53-0130	053 - Open cut excavation down to Foundation Level	6	31-May-16 A	06-Jun-16
Raft				
RAB-53-0150	053 - Construct lift pit	10	07-Jun-16	18-Jun-16
RAB-53-0160	053 - Construct Raft Foundations North	12	13-Jun-16	25-Jun-16
RAB-53-0165	053 - backfill to G/L	3	27-Jun-16	29-Jun-16
RAB-53-0200	053 - Construct Raft Foundations South	10	20-Jun-16	30-Jun-16
RAB-53-0201	053 - Construct Raft Foundations Centre - Shrinking Strip	10	24-Jun-16	06-Jul-16
Structure				
External Walls				
To First Floor Level				
RAB-53-0190	053 - Construct External Walls and Columns to +12.85mPD North	12	27-Jun-16	11-Jul-16
RAB-53-0230	053 - Construct External Walls and Columns to +12.85mPD Centre	12	30-Jul-16	12-Aug-16
RAB-53-0250	053 - Construct External Walls and Columns to +12.85mPD South	12	02-Jul-16	15-Jul-16
Internal Structures				
RAB-53-7490	053 - Construct Internal Staircase S-01 +12.85mPD South	12	02-Jul-16	15-Jul-16
RAB-53-7500	053 - Construct Internal Staircase S-02 +12.85mPD North	12	27-Jun-16	11-Jul-16
RAB-53-7550	053 - Construct Internal Liftshaft L-01 +12.85mPD North	12	04-Aug-16	17-Aug-16
First Floor				
Slabs				
RAB-53-0240	053 - Construct 1/F Suspended Slab +12.85mPD North	12	12-Jul-16	25-Jul-16
RAB-53-0270	053 - Construct 1/F Suspended Slab +12.85mPD Centre	12	13-Aug-16	26-Aug-16
RAB-53-0310	053 - Construct 1/F Suspended Slab +12.85mPD South	12	16-Jul-16	29-Jul-16
RAB-53-1130	053 - Install SPR and FS Glass Reinforced Polyester Water Tanks (F/F South)	12	30-Jul-16	12-Aug-16
Cure and Strip				
RAB-53-0260	053 - Cure and Strip False/Formwork at +12.85mPD North	8	26-Jul-16	03-Aug-16
RAB-53-0300	053 - Cure and Strip False/Formwork at +12.85mPD Centre	8	27-Aug-16	05-Sep-16
RAB-53-0340	053 - Cure and Strip False/Formwork at +12.85mPD South	8	30-Jul-16	08-Aug-16
To Roof Level				
RAB-53-0280	053 - Construct External Walls and Columns to +17.1mPD North	12	04-Aug-16	17-Aug-16
RAB-53-0360	053 - Construct External Walls and Columns to +17.1mPD South	12	09-Aug-16	22-Aug-16
Staircases				
RAB-53-7510	053 - Construct Internal Staircase S-01 +17.1mPD South	12	09-Aug-16	22-Aug-16
RAB-53-7520	053 - Construct Internal Staircase S-02 +17.1mPD North	12	04-Aug-16	17-Aug-16
Roof Floor				
Slabs				
RAB-53-0320	053 - Construct R/F Suspended Slab at +17.1mPD North	12	18-Aug-16	31-Aug-16
RAB-53-0430	053 - Construct R/F Suspended Slab at +17.1mPD South	12	23-Aug-16	05-Sep-16



Actual Work
Remaining Work
Critical Remaining Work
Milestone

Three Month Rolling Programme

HKMZB HKBCF - Remaining Ancillary Buildings and Facilities

Date	Revision	Checked	Approved
01-May-16	Three Month Rolling Programme	JW/SGJ	

APPENDIX D

Event and Action Plan

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
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.
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 measurement s 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
LIMIT LEVEL				
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.
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 exceedance is abated.

Event / Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Notify IEC and Contractor; 2. Identify source, investigate the causes of exceedance and propose remedial measures; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5 Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor 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 are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
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 Contractors 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.

APPENDIX E

Waste Flow Table

Name of Department: Highways Department

Contract No.: HY/2014/05

LEIGHTON 俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Monthly Summary Waste Flow Table for 2016

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
January											
February	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
March	0.000	0.000	0.036	0.000	0.000	0.270	0.000	0.000	0.000	0.000	0.000
April	0.000	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
June											
Sub-total	0.000	0.000	0.036	0.000	0.000	0.297	0.000	0.000	0.000	0.000	0.004
July											
August											
September											
October											
November											
December											
Total	0.000	0.000	0.036	0.000	0.000	0.297	0.000	0.000	0.000	0.000	0.004

Total C&D waste generated = a+b+f+g+h+i+j+k

Total C&D waste generated (excluded excavated material) = g+h+i+j+k

Total C&D waste recycled = c+d+g+h+i

% of recycled C&D waste = (Total C&D waste generated - Total C&D waste recycled) / Total C&D waste generated

Notes:
(1) The performance target are given in PS Clause 6(14)
(2) The waste flow table shall also include C&D materials that are not specified in the Contract to be imported for use at the Site
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
(4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m^3.
(5) All recyclable materials, including metals, paper / cardboard packaging, plastics, etc. will be collected by registered collector for recycling.
(6) Conversion factors for reporting purpose:
in-situ: rock = 2.5 tonnes/m^3; soil = 2.0 tonnes/m^3
excavated: rock = 2.0 tonnes/m^3; soil = 1.8 tonnes/m^3; broken concrete and bitumen = 2.4 tonnes/m^3
C&D Waste = 0.9 tonnes/m^3; bentonite slurry = 2.8 tonnes/m^3
(7) Numbers are rounded off to the nearest three decimal places
(8) The "Total Quantity Generated" equals to the sum of "Reuse in the Contract", "Reuse in Other Projects" and "Disposed as Public Fill"
(9) The "Hard Rock and Large Broken Concrete" were disposed as public fill
(10) The amount in "Disposed as Public Fill" included the "Hard Rock and Large Broken Concrete" disposed as public fill

APPENDIX F

Environmental Licenses and Permits

Leighton – Chun Wo Joint Venture (LCWJV)

Environmental License/ Permits /Notification Register

Contract No. HY/2014/05 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

									Date: May 2016	Remark
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office		
	Work Area	Date	Reference							
1	All Areas	30 Jun 2015	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/I	17 Jul 2015	N/A	EPD		Superseded by EP-353/2009/J
2	All Areas	18 Feb 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD		Superseded by EP-353/2009/K
3	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD		-
4	All Areas	30 Dec 2015	N/A	**Billing Account** for disposal of construction waste	7024342	16 Feb 2016	N/A	EPD		-
5	All Areas	30 Dec 2015	RABF-LTR- EPD-000001	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	6 Jan 2016	N/A	EPD		-
6	All Areas	04 Jan 2016	RABF-LTR- EPD-000002	**Registration** as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at RABF area	WPN 5213-951-L2846-02	19 Feb 2016	N/A	EPD		-

Environmental License/ Permits /Notification Register

Contract No. HY/2014/05 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Date: May 2016									
Item No.	**Permit/License or Registration Application**			**Permit/License/ Notification/ Registration Description**	**Permit/License/ Registration Number**	**Issue/Start Date**	**Expiry Date**	**Issuing Office**	**Remark**
	Work Area	**Date**	**Reference**						
7	All Areas	25 Jan 2016	RABF-LTR- EPD-000003	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0106-16	11 Feb 2016	10 Aug 2016	EPD	Superseded by GW-RS0476-16
8	All Areas	08 May 2016	RABF-LTR- EPD-000012	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0476-16	19 May 16	18 Nov 16	EPD	-

APPENDIX G

Implementation Schedule for Environmental Mitigation Measures (EMIS)

Contract No. HY/2014/05 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Implementation Schedule for Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality								
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: • 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; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • 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; • 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;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• 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; • 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; • 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; • 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; • 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; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • 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;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• 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; • 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 • 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.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√
S5.5.6.4	A3	The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact	√
S5.5.6.5	A4	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.	Control construction dust	Engineer	All construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation	√
S5.5.6.5	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation • To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√ (The dust monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02 and Contract No. HY/2011/03.)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • 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; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • 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.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	N/A
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points.	Control construction dust	Contractor	All construction sites	Construction stage	Air Pollution Control (Construction Dust) Regulation	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Air borne)								
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • 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; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	√
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.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m^2), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises • The movable barrier should achieve at least 5dB(A) and the full enclosure should be	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance & its TM • Annex 5, TM-EIA	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	√
/	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises	√ (The noise monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02.)
Sediment								
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.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	• Waste Disposal Ordinance • ETW B TC 34/2002	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Waste Management (Construction Waste)								
S8.3.8	WM1	*Construction and Demolition Material* The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETW BTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&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.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETW BTC 19/2005	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S8.3.9-S8.3.11	WM2	*C&D Waste* • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&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. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&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.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TC 19/2005	√
S8.2.12-S8.3.15	WM3	*Chemical Waste* • 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. • 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. • 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.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		• 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.						√
S8.3.16	WM4	*Sewage* • 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.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	√
S8.3.17	WM5	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • 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. • 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. • 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, aluminum cans, plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Water Quality (Construction Phase)								
S.9.11.1.7	W2	<u>Land Works</u> 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: • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • 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; • 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; • 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; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • 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; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S9.11.1.7	W2	• 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; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • 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; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • 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 • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)								
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	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	√
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	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction		√
S10.7	E8	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brother Islands.	Minimise marine traffic disturbance on dolphins	Contractor	Marine Traffic	During construction		N/A
Fisheries								
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	Minimise impacts on marine water quality impacts	Marine Department	HKBCF	During operation		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Detailed Design Phase)								
S14.3.3.1	LV1	General design measures include: • Roadside planting and planting along the edge of the HKBCF Island is proposed; • 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; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations; • Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; • 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 • 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.	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Construction Phase)								
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas. G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. G3. Not applicable as this is for HKLR. 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 G5. Vegetation reinstatement and upgrading to disturbed areas G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed G7. Providing planting area around peripheral of HKBCF for tree planting screening effect; G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. 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 enchance "natural-look" of the new coastline.	Minimise visual & landscape impact	Contractor	HKBCF	Construction stage		N/A
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> V1. Minimize time for construction activities during construction period. 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.						√ for V1. N/A for V2.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
EM&A								
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	√
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.	Perform environmental monitoring & auditing	Contractor	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	√

Legends: √ = 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 contract to end of reporting month	0	0	0

APPENDIX I

Environmental Site Inspection Schedule

June 2016

	Sunday	Monday	Tueday	Wednesday	Thursday	Friday	Saturday
Time				1-Jun	2-Jun	3-Jun	4-Jun
				Site Inspection			
Time	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun	11-Jun
				Site Inspection			
Time	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun
				Site Inspection			
Time	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
				Site Inspection			
Time	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun		
				Site Inspection			