

16 November 2017

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. Malcolm Sage

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**

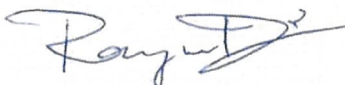
**Contract No. HY/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and  
Facilities  
Quarterly EM&A Report No.6 for June 2017 to August 2017**

Reference is made to the Environmental Team's submission of Quarterly Environmental Monitoring & Audit Report No.6 for June 2017 to August 2017 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC042/KC/RL" dated 15 November 2017) and provided to us via e-mail on 15 November 2017.

We are pleased to inform you that we have no adverse comment on the captioned report. We write to verify the captioned submission in accordance with Section 16.4.1 of the Updated EM&A Manual (2011).

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. Vico Cheung	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	Atkins	Mr. Keith Chau	(By Fax: 2890 6343)
	LCWJV	Mr. Iain Hubert	(By Fax: 3621 0180)

Internal: DY, YH, ENPO Site

Your ref.

Our ref. 5140819/18.30/OC042/KC/RL

Date: 15 November 2017

**By Post and e-mail (Stephen.Tsang@lcwjv.com)**

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

**Attn: Mr. Stephen Tsang**

Dear Mr. Tsang,

**Contract No. HY/2014/05  
Hong Kong – Zhuhai – Macao Bridge  
Hong Kong Boundary Crossing Facilities –  
Remaining Ancillary Buildings and Facilities  
Certification of Quarterly EM&A Report No. 6**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Quarterly EM&A Report No. 6 (Revision 1) conforms the requirements provided in Section 16.4 of the Updated Environmental Monitoring and Audit Manual for HKBCF (Version 1.0).

**Yours faithfully,  
for and on behalf of  
Atkins China Limited**



**Keith Chau  
Environmental Team Leader**

**cc.**

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

**Contract No. HY/2014/05**

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

**Quarterly EM&A Report No. 6  
(Covering the Period from 1 June 2017 to 31 August 2017)**

6 October 2017

Revision 1

Main Contractor



Leighton - Chun Wo  
Joint Venture

Environmental Team

**ATKINS**

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## Executive Summary

This Quarterly 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 (includes the construction works of Contract No. HY/2013/06 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2014/05 was awarded to Leighton – Chun Wo Joint Venture (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited and Contract No. HY/2014/04 was awarded to Rapiscan Systems Pte Ltd within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contractor”) and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) is part of HZMB HKBCF Project 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 No. HY/2014/05 commenced on 29 February 2016 while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively.

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 Sixth Quarterly EM&A Report for the Contract No. HY/2014/05 which summarizes findings of the EM&A works during the reporting period from 1 June 2017 to 31 August 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

## Environmental Monitoring and Audit Progress

The 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 environmental site inspection for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) during the reporting period are listed below:

Environmental Site Inspection Date		
June 2017	July 2017	August 2017
7, 14, 21 and 28	3, 13, 17 and 24	1, 7, 14, 25 and 28

## Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at station AMS6 shall be referred to the monthly EM&A Reports (for June, July and August 2017) 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.

### **Implementation of Environmental Measures**

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. Potential environmental impacts due to the construction activities were monitored and reviewed.

### **Complaint Log**

There was no complaint received in relation to the environmental impact during the reporting period.

For the dust nuisance complaint received by EPD on 31 May 2017 during the last reporting period and sent to the ET on 1 June 2017, it was found that the nuisance of dust emissions from the haul road traffic near Buildings 044 and 045 was not related to Contract No. HY/2014/05 (including Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action by Contract No. HY/2014/05 was required.

### **Notifications of Summons and Successful Prosecutions**

There was no notification of summon or prosecution received during this reporting period.

### **Reporting Change**

There was no reporting change during the reporting period.

## 1 Introduction

### 1.1 Basic Project Information

- 1.1.1 This Quarterly 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 (includes the construction works of Contract No. HY/2013/06 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2014/05 was awarded to Leighton – Chun Wo Joint Venture (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited and Contract No. HY/2014/04 was awarded to Rapiscan Systems Pte Ltd within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contractor”) and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.
- 1.1.2 Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) is part of HZMB HKBCF Project 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 No. HY/2014/05 commenced on 29 February 2016 while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. The works areas of the Contract are shown in **Appendix A**.
- 1.1.3 This is the Sixth Quarterly EM&A Report for the Contract No. HY/2014/05 which summarizes the audit findings of the EM&A programme during the reporting period from 1 June 2017 to 31 August 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

### 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
<u>For Contract No. HY/2014/05</u>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	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	Stephen Tsang	3973 1806	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
<b>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</b>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	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 (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	6509 0375	---
<b>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</b>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	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 (Rapiscan Systems Pte Ltd)	Site Agent	Ringo Yau	9833 1402	2707 0816
	Environmental Officer	Clarie Tsang	6371 1362	---
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	9833 1420	---



### 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:

### For Contract No. HY/2014/05

- Raft Foundation of Buildings 050A1 and 050A2
- Construction of RC Structure of Buildings 050H1, 050H2, 050A1 and 050A2
- ABWF works (Internal Finishes) of Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058, 059, 050A1, 050A2, 050H1 and 050H2
- ABWF works (External Finishes) of Buildings 021, 022, 023, 025, 032, 044, 045, 050A1, 050H1, 050H2, 053, 058 and 059
- ABWF works (Roof Finishes) of Buildings 021, 022, 023, 025, 032, 044, 045, 050A1, 050A2, 050H1, 050H2, 053, 058 and 059
- MEP installation of Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058 059, 050H1, 050H2 and 050A2
- Utilities and Drainage installation of Building 021, 022, 023, 025, 032, 044, 045, 053, 050A1, 050A2, 050H1, 050H2, 058 and 059
- Installation of Lift of Buildings 023, 044 and 053
- Construction of Planter Box and Ramp of Building 023
- PV Installation and Steel Canopy of Building 023
- Dog swimming pool of Building 022

### For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area

- Conceal Conduit Installation and Wiring at Buildings 023, 025 and 032

### For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area

- Cabling Works at Buildings 053 and 054
- Furniture delivery at Buildings 053 and 054
- Installation of Doors at Building 059
- Cabling Works at Buildings 058 and 059
- Installation of Extension Pieces and Door frames at Building 058

## 2 EM&A Requirement

### 2.1 Summary of EM&A Requirements

- 2.1.1 The EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1). 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.
- 2.1.2 A summary of air and noise monitoring locations is presented in **Table 2.1**. The locations of air quality and noise monitoring stations are shown as in **Figure 2.1** and **Figure 2.2**, respectively.

**Table 2.1 Summary of Impact EM&A Requirements**

Environmental Monitoring	ID	Location Description
Air Quality	AMS6 <sup>(1)</sup>	Dragonair/CNAC (Group) Building
	AMS7 <sup>(1)</sup>	Hong Kong SkyCity Marriott Hotel
Noise	NMS2 <sup>(2)</sup>	Seaview Crescent
	NMS3B <sup>(2),(3)</sup>	Site Boundary of Site Office Area at Works Area WA2

Remarks:

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

### 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.

### 2.3 Action and Limit Levels

- 2.3.1 The Action and Limit Level for 1-hr TSP and 24-hr TSP are provided in **Table 2.2** and **Table 2.3**, respectively.

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

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	360	500

AMS7 – Hong Kong SkyCity Marriott Hotel	370	
---	-----	--

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

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	173	260
AMS7 – Hong Kong SkyCity Marriott Hotel	183	

- 2.3.2 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.
- 2.3.3 The Action and Limit Levels for construction noise are defined in **Table 2.4**.

**Table 2.4 Action and Limit Level for Construction Noise**

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

Notes:

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

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

- 2.3.4 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.

## 2.4 Event Action Plans

- 2.4.1 The Event Actions Plans for air quality and noise are provided in **Appendix D**.

## 2.5 Mitigation Measures

- 2.5.1 Environmental mitigation measures for the contract were recommended in the approved EIA Report. **Appendix E** lists the recommended mitigation measures and the implementation status.

### 3 Environmental Monitoring and Audit

#### 3.1 Air Quality Monitoring Results

- 3.1.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports (for June, July and August 2017) prepared for Contract Nos. HY/2011/03 and HY/2010/02, respectively.
- 3.1.2 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 Reports (for June, July and August 2017) prepared by Contract No. HY/2011/03.
- 3.1.3 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.

#### 3.2 Noise Monitoring Results

- 3.2.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports (for June, July and August 2017) prepared for Contract No. HY/2010/02.
- 3.2.2 No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2010/02 during the reporting period.

#### 3.3 Implementation of Environmental Measures

- 3.3.1 In response to the site audit findings, the Contractors carried out corrective actions. Details of site audit findings and the corrective actions during the reporting period are presented in **Appendix F**.
- 3.3.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix E**. Most of the necessary mitigation measures were implemented properly.
- 3.3.3 The Contractor waters 8 times per day on all exposed soil within the Contract site and associated works areas when construction activities are being undertaken.

#### 3.4 Advice on the Solid and Liquid Waste Management Status

- 3.4.1 The Contractor of Contract No. HY/2014/05 registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 3.4.2 The summary of waste flow table is detailed in **Appendix G**.
- 3.4.3 The Contractor of Contract No. HY/2014/05 was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*.

#### 3.5 Environmental Licenses and Permits

- 3.5.1 The valid environmental licenses and permits during the reporting period are summarized in **Appendix H**.
- 3.5.2 The Contractors of Contract No. HY/2013/06 and Contract No. HY/2014/04 were advised to register as a chemical waste producer when chemical waste will be expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

## 4 Summary of Exceedance, Complaint, Notification of Summons and Successful Prosecution

### 4.1 Summary of Exceedance of the Environmental Quality Performance Limit

- 4.1.1 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 Reports (for June, July and August 2017) prepared by Contract No. HY/2011/03.
- 4.1.2 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.
- 4.1.3 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.

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

- 4.2.1 There was no complaint received in relation to the environmental impact during this reporting period. One complaint was received in relation to the environmental impact during the previous reporting period. A summary of environmental complaints is presented in **Table 4.1**. The details of cumulative statistics of Environmental Complaints are provided in **Appendix I**.

**Table 4-1 A Summary of Environmental Complaints for the Previous Reporting Period**

Environmental Complaint No.	Date of Complaint Received	Description of Environmental Complaints
004	31 May 2017	Air Quality

Environmental Complaint No. 004 - Air Quality

- 4.2.2 According to ENPO's email to Environmental Team, Engineer's Representative and Contractor on 1 June 2017, it is noted that EPD had received a complaint regrading a dust emission from the transportation near Building 044 and 045.
- 4.2.3 Based on the Contractor information, the construction work at Buildings 044 and 045 were reinforced concrete structure works, internal finishing and pipe installation works. Only a small number of vehicles access for Buildings 044 and 045 on each day (less than 20 vehicles per day, exclude the water truck for watering spraying). The Contractor have provided guidelines to remind the site vehicles should travel within speed limit of 8 km/hr. As confirmed by the Contractor, the road access management ssadjacent to Buildings 044 and 045 is not under this contract. However, the Contractor have arranged the water truck for water spraying near the Buildings 044 and 045 to avoid the potential dust impact from the haul road.
- 4.2.4 Based on the investigation results, it was found that the nuisance of dust emissions from the haul road traffic near Buildings 044 and 045 was not related to Contract No. HY/2014/05 (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action was required.
- 4.2.5 The Contractor have arranged the water truck for water spraying near the Buildings 044 and 045 to avoid the potential dust impact form haul road. The Contractor have also arranged a staff to supervise the haul road condition near Buildings 044 and 045. In case of any dust emissions from the haul road near Buildings 044 and 045, the Contractor should arrange the water truck or front-line staff to enhance the watering. The watering plan, which include the information of watering schedule, routing of trucks for watering and the location of water filling, was prepared and submitted to RE and ENPO. The Contractor was also reminded to

implement all necessary mitigation as specified in EIA (Section 5.5.6.3), EM&A Manual (EM&A Log Ref: A3), EMP, Method Statements, General and Particular Specifications of this Project to minimize the potential dust impact during construction activities.

- 4.2.6 No notification of summons and prosecution was received during the reporting period.
- 4.2.7 Statistics on notifications of summons and successful prosecutions are summarized in **Appendix I**.

## 5 Comments, Recommendations and Conclusion

### 5.1 Comments

5.1.1 According to the environmental site inspections undertaken during the reporting period, the following recommendations were provided:

- The Contractor is recommended to store chemicals inside proper containers and to provide drip tray for the chemical container at Buildings 023, 025 and 058.
- The Contractor was reminded to provide proper drip tray and chemical label for the chemical container.
- The Contractor was reminded to sort the construction waste properly and maintain the site tidiness at Building 053.
- The Contractor was reminded to ensure the chemical waste should be properly sorted.
- The Contractor was reminded to clear the accumulated stagnant water
- The Contractor was reminded to clear the general refuses and keep the site tidily.
- The Contractor was reminded to remove the contaminated soil and treated as chemical waste.
- The Contractor was advised to cover the stock of cement bags properly by impervious sheeting to avoid dust emissions.
- The Contractor was reminded to cover the stock of cement bags entirely.
- The Contractor was reminded to dispose of general refuses more regularly.
- The Contractor was reminded to enhance watering during the concrete breaking activities

5.1.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix E**. Most of the necessary mitigation measures were implemented properly.

### 5.2 Recommendations

5.2.1 With implementation of the recommended environmental mitigation measures, the contract's environmental impacts were considered environmentally acceptable. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended were effectively implemented.

5.2.2 The recommended environmental mitigation measures, as included in the EM&A programme, effectively minimize the potential environmental impacts from the contract. Also, the EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

### 5.3 Conclusions

- 5.3.1 The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016. while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. This is the Sixth Quarterly EM&A Report which summarizes findings of the EM&A works during the reporting period from 1 June 2017 to 31 August 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 5.3.2 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 Reports (June, July and August 2017) prepared by Contract No. HY/2011/03.
- 5.3.3 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.
- 5.3.4 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.
- 5.3.5 Environmental site inspections were carried out on 7, 14, 21, and 28 June, 3, 13, 17, and 24 July and 1, 7, 14, 25 and 28 August for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.
- 5.3.6 There was no complaint received in relation to the environmental impact during the reporting period. One complaint regarding air quality was received on 31 May 2017 during the previous reporting period. For the dust nuisance complaint received by EPD on 31 May 2017 and sent to the ET on 1 June 2017, it was found that the nuisance of dust emissions from the haul road traffic near Buildings 044 and 045 was not related to Contract No. HY/2014/05 (including Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action by Contract No. HY/2014/05 was required.
- 5.3.7 No notification of summons and successful prosecution was received during the reporting period.





# FIGURES

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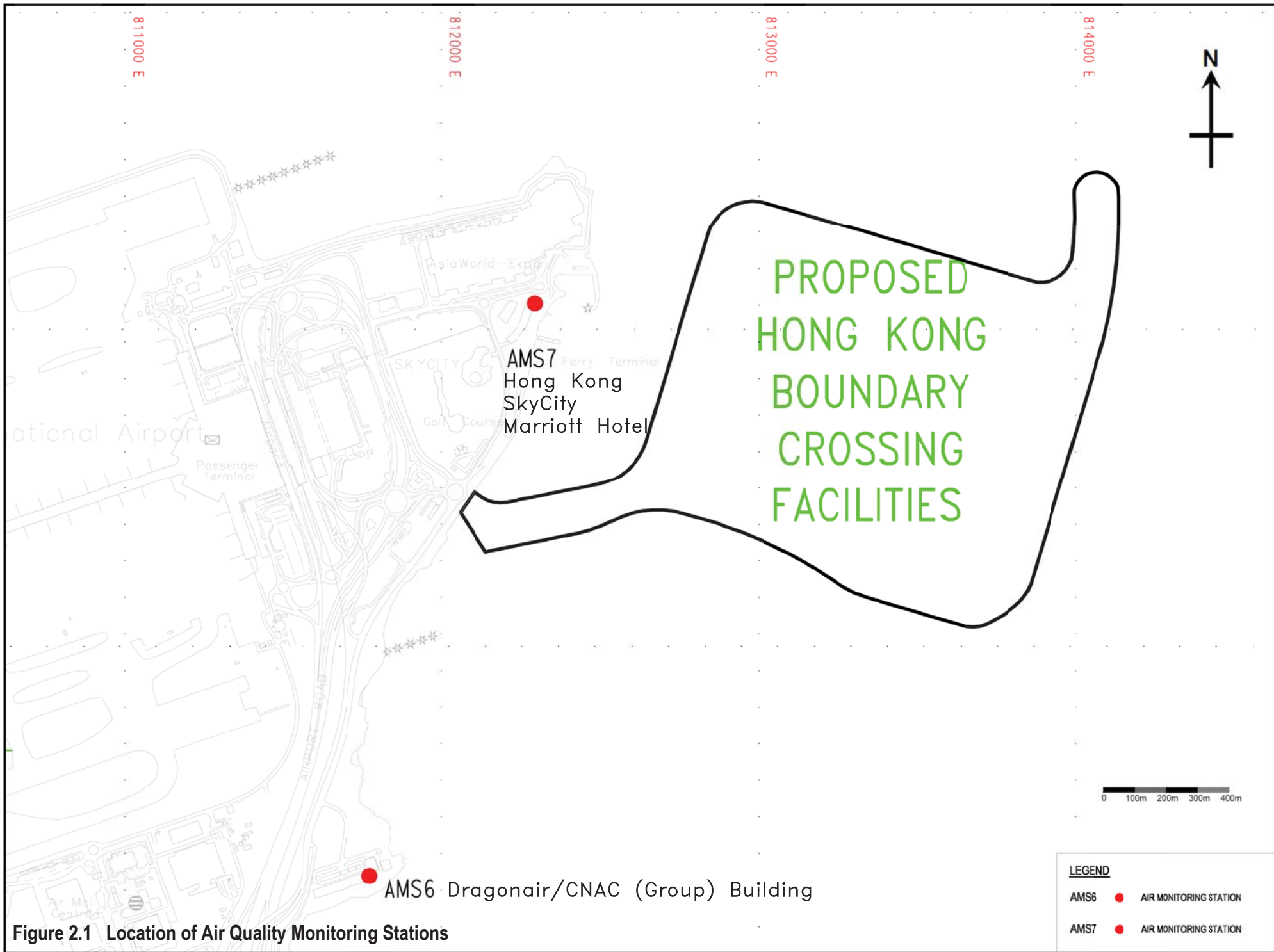
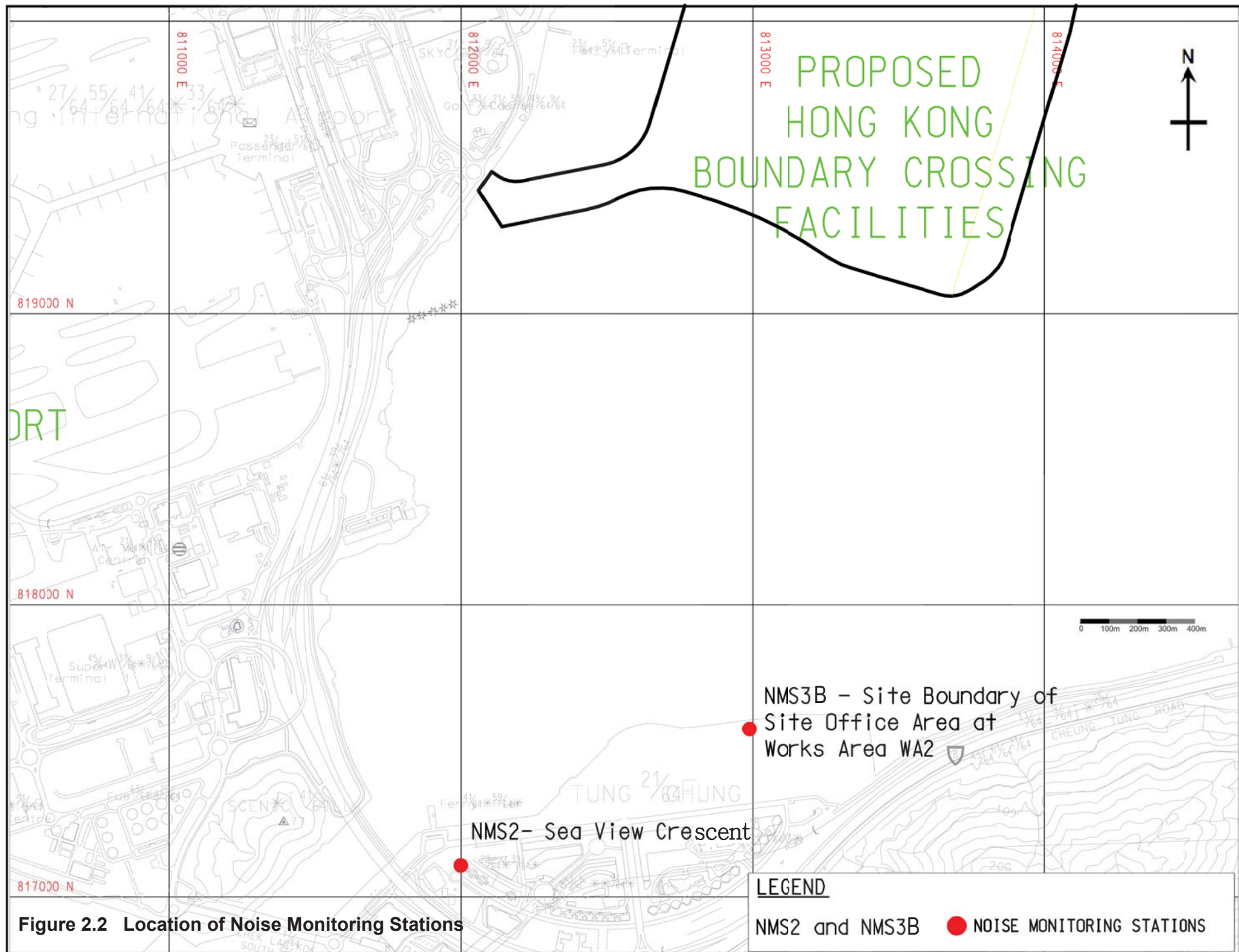


Figure 2.1 Location of Air Quality Monitoring Stations

LEGEND	
AMS6	● AIR MONITORING STATION
AMS7	● AIR MONITORING STATION



**Figure 2.2 Location of Noise Monitoring Stations**

**LEGEND**

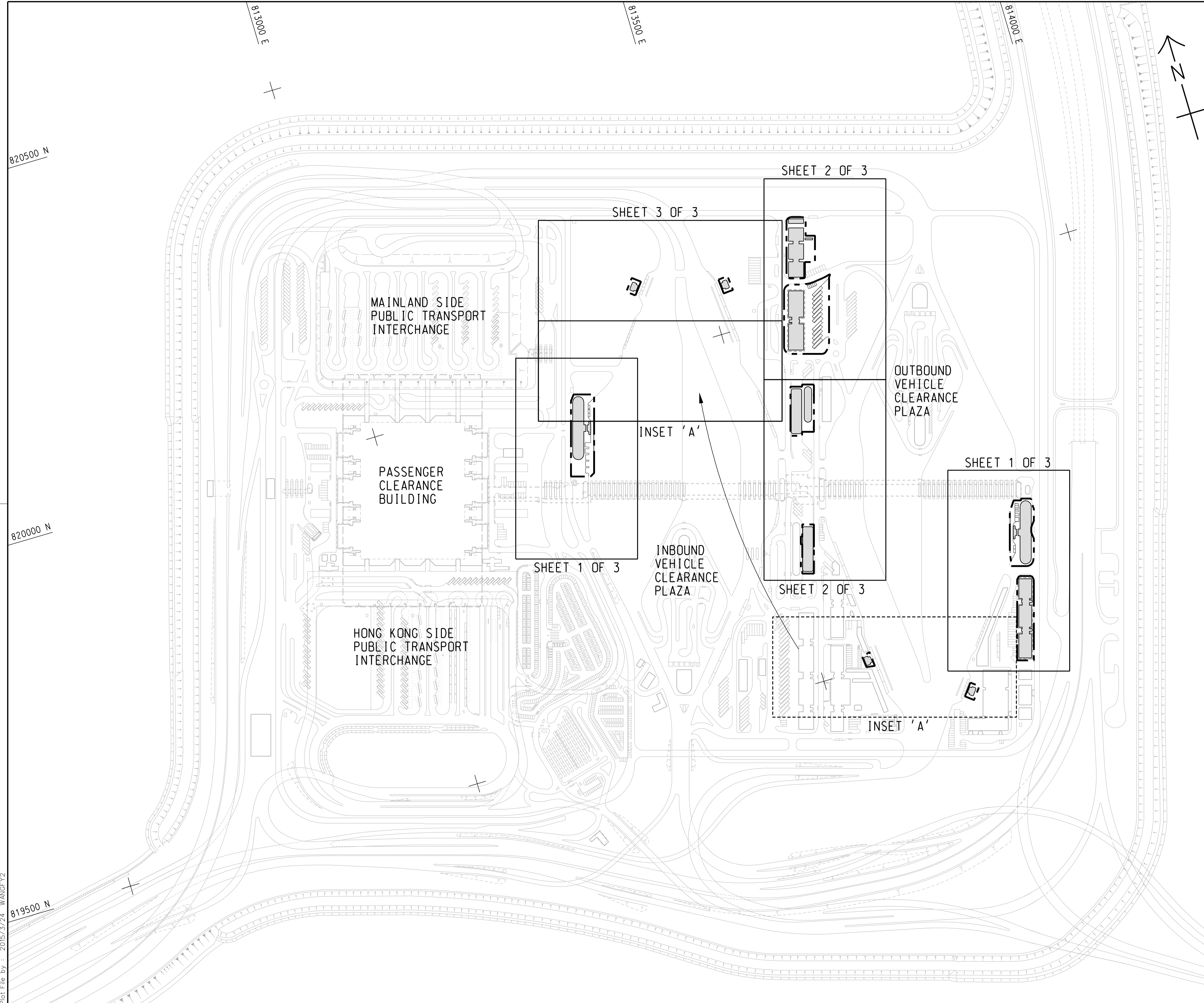
NMS2 and NMS3B ● NOISE MONITORING STATIONS



# APPENDIX A

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## Location of Works Areas



Plot File by : 2015/3/24 WANGFY2

p:\projects\60191048\drawing\contract\c8\1000\C8\_000\_C00\_1010.dgn

- TENDER DRAWING		BWCW SCI	MAR.15
REV. 修改	DESCRIPTION 內容摘要	D.C. 圖樣	DATE 日期

**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**

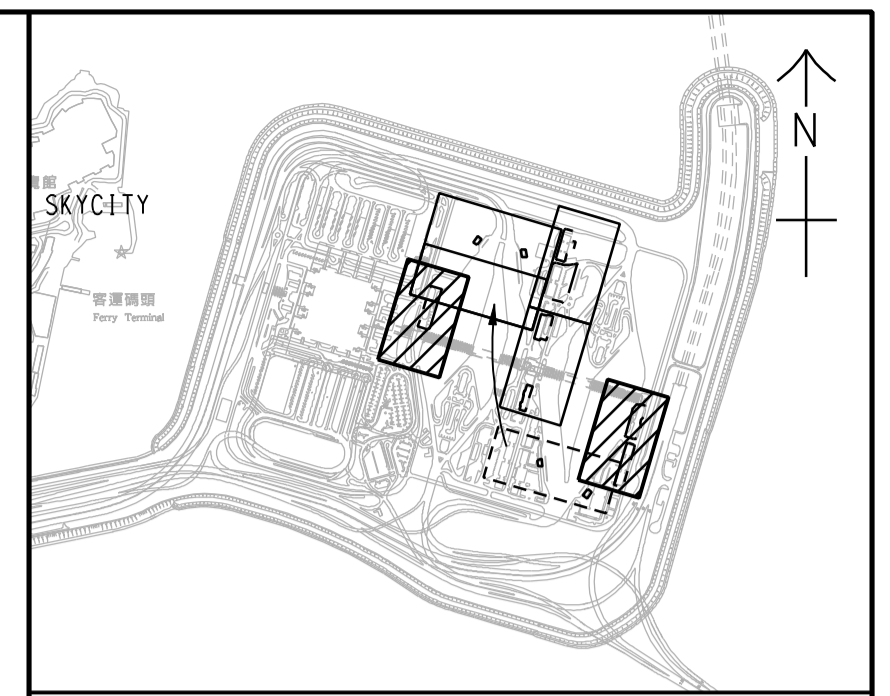
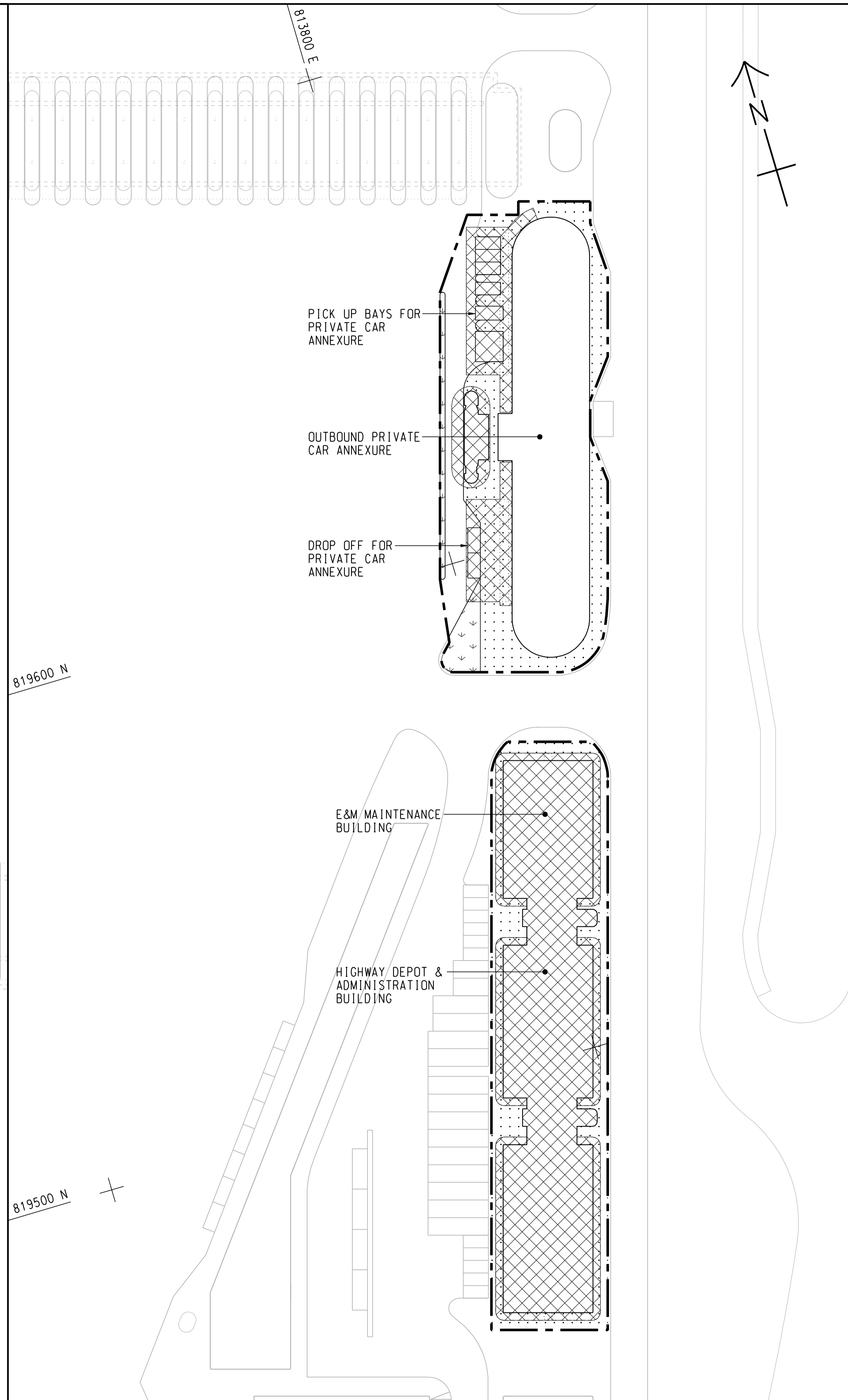
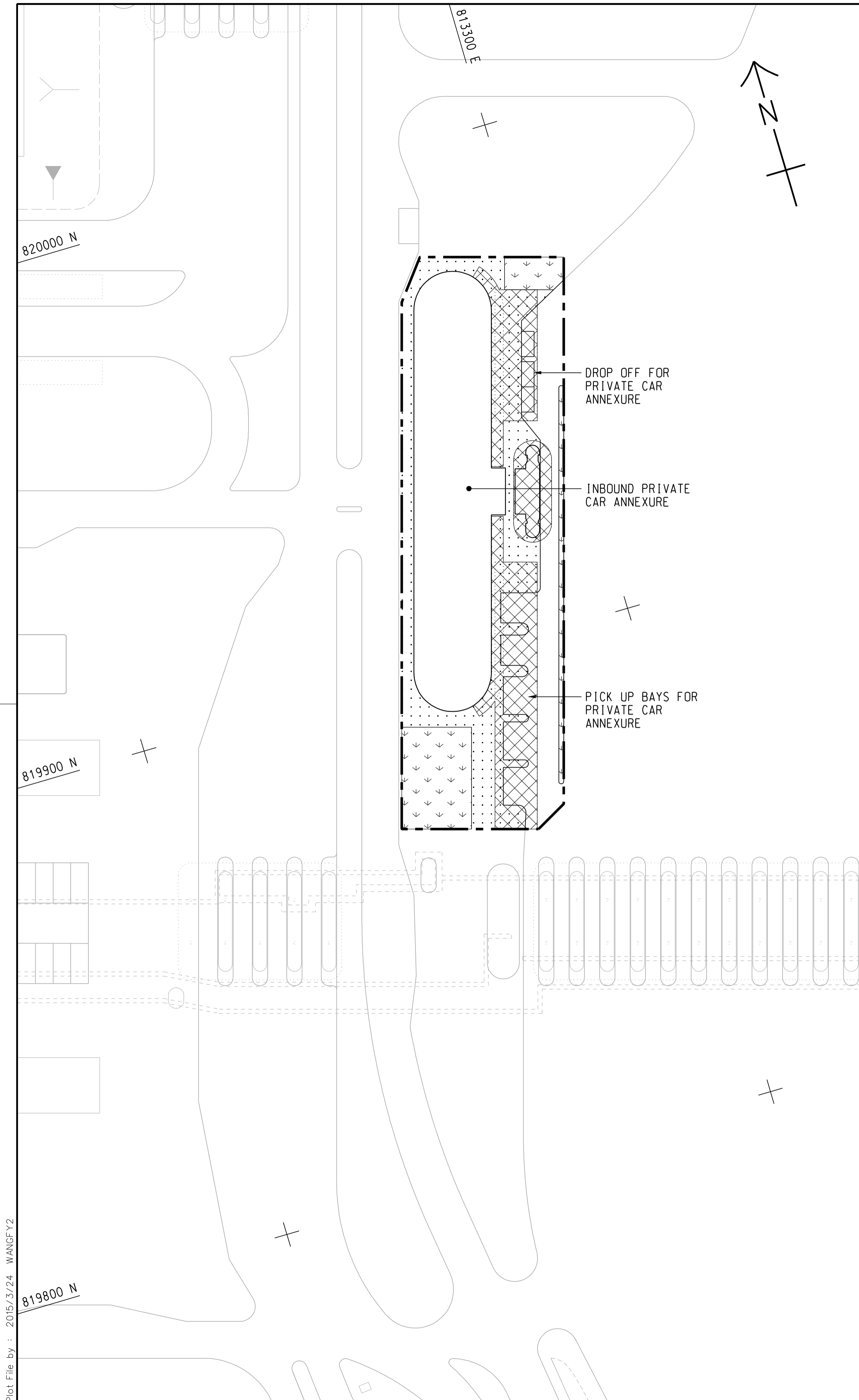
**Rogers Stirk Harbour + Partners**  
 BURO HAPPOLD ATKINS ADI

DRG.NO. 60191048/C8/000/C00/1010  
 圖紙編號

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 : 2500

DIMENSIONS ARE IN 尺寸單位 METRES 版權所 有



KEY PLAN  
SCALE 1 : 20000

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. 修改	DESCRIPTION 內容摘要	DATE 日期
-	TENDER DRAWING	MAR. 15



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

GENERAL LAYOUT PLAN

SHEET 1 OF 3

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

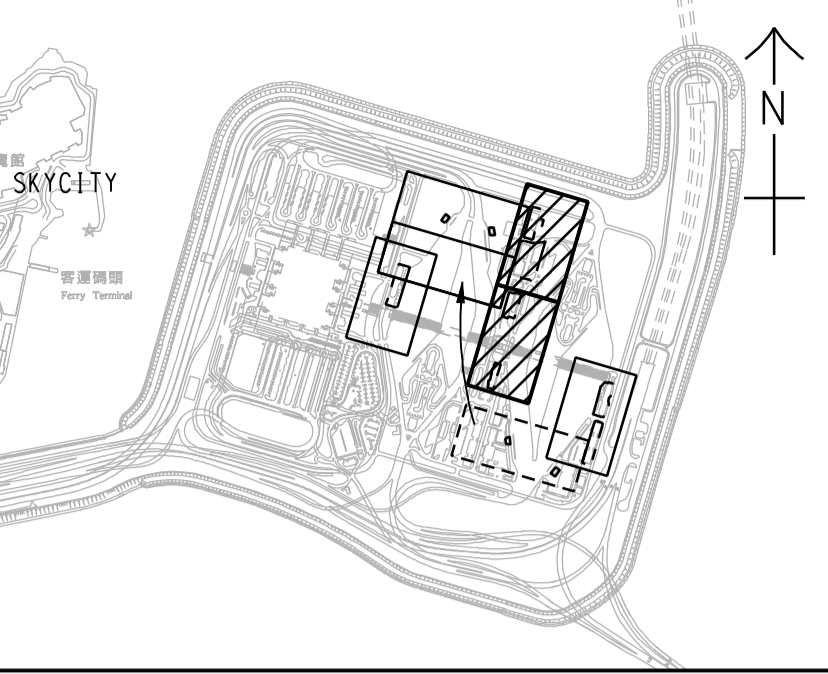
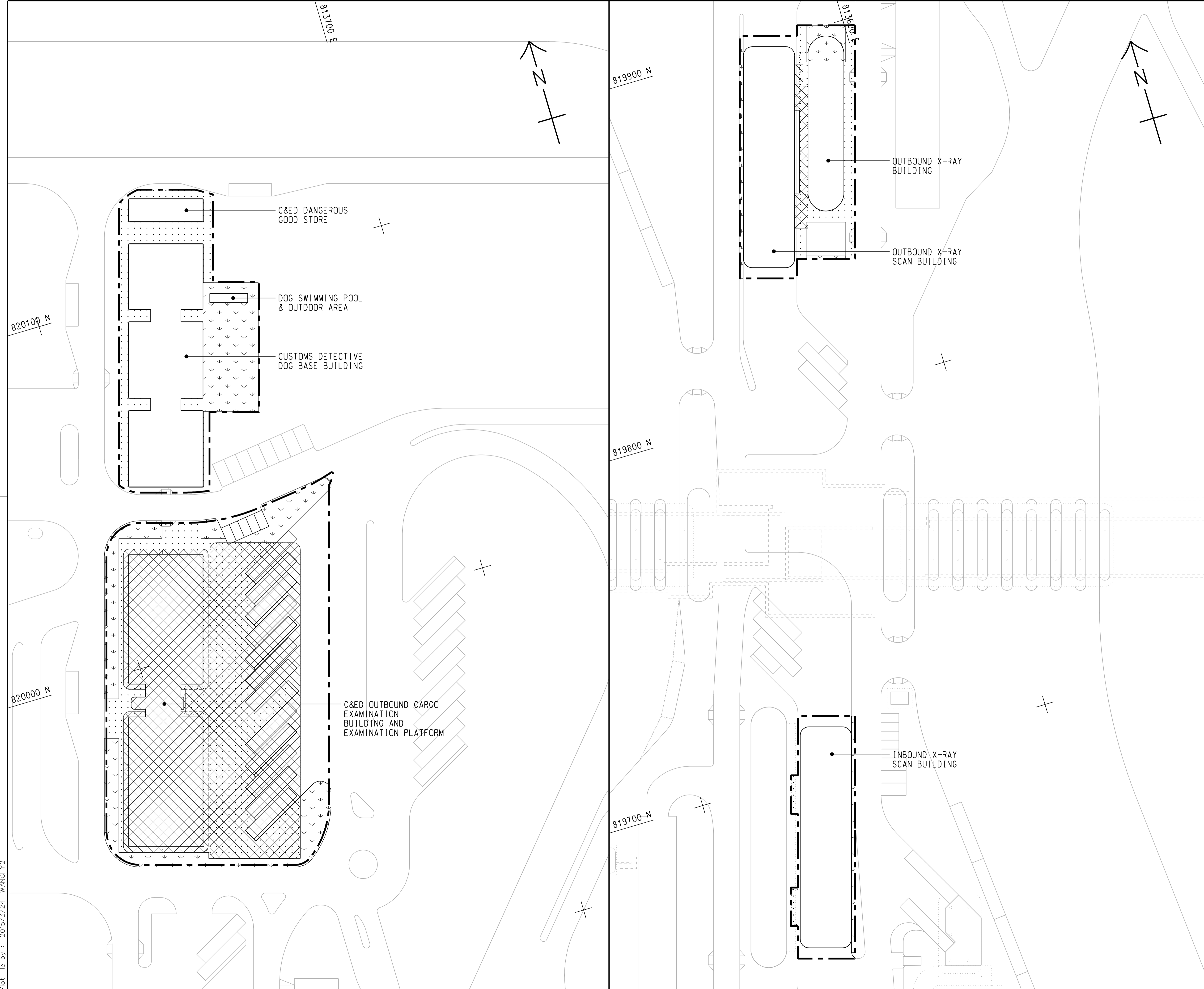
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DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2014/05	P. Dir. APPROVED 批准人 TKH
---------------------	------------------------------	--------------------------

DRAWN BY 繪圖 WSY	STATUS 階段
SCALE 比例 A1 1 : 500	

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KEY PLAN  
SCALE 1 : 20000

- NOTES:
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  - THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1011 AND 1013.

REV. 修改	DESCRIPTION 內容摘要	B.C. 校核	P.C. 繪圖	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局  
 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** +  
**Aedas**  
 Rogers Stirk Harbour + Partners  
 BURO HAPPOLD ATKINS ADI +

DRG. NO. 60191048/C8/000/C00/1012  
圖紙編號

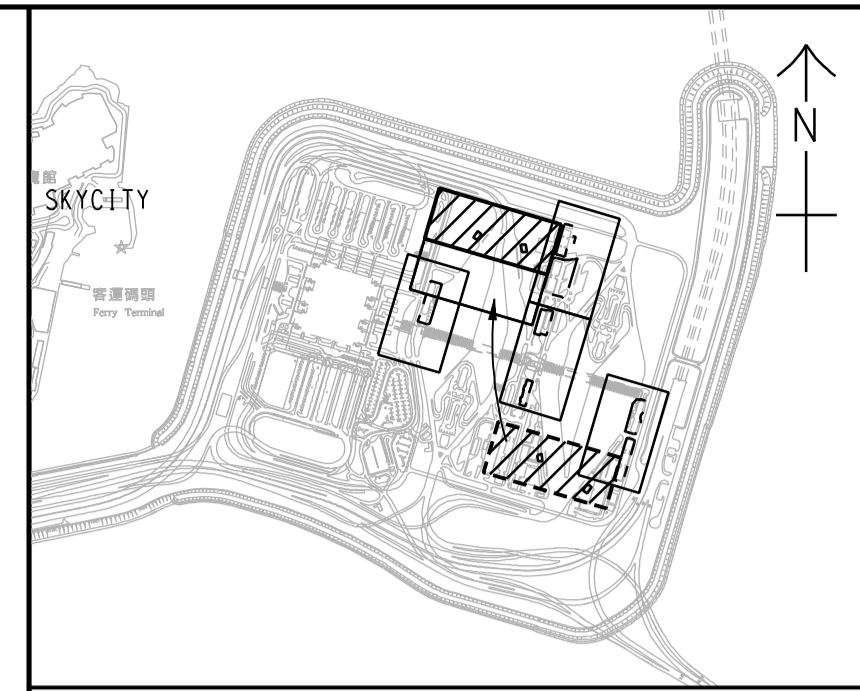
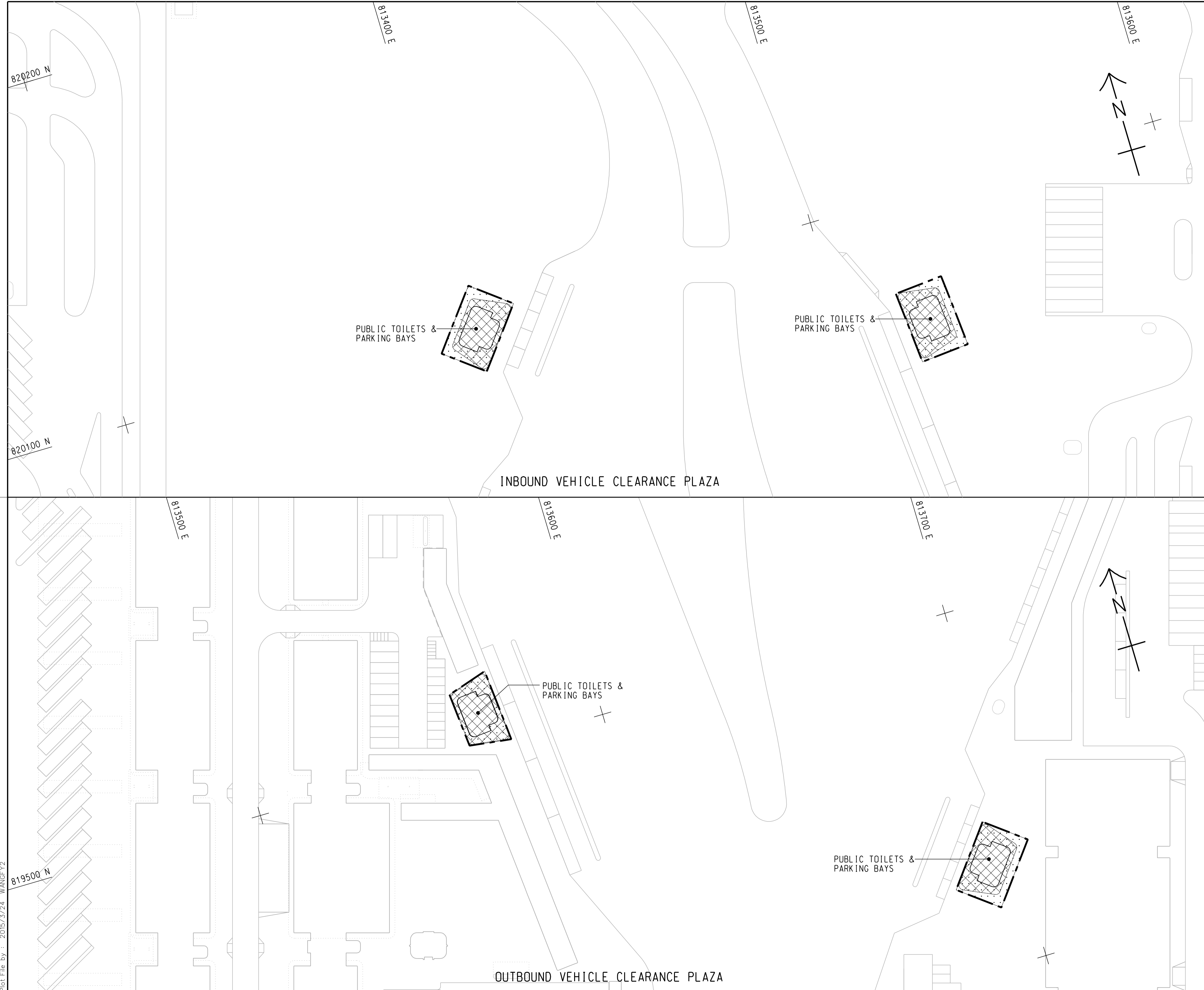
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 比例 A1 1 : 500

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Plot File by : 2015/3/24 WANGFY2



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.	DESCRIPTION	DATE
01	TENDER DRAWING	MAR. 15

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

GENERAL LAYOUT PLAN

SHEET 3 OF 3

Rogers Stirk Harbour + Partners  
 BURO HAPPOLD ATKINS ADI

DRG. NO. 60191048/C8/000/C00/1013  
圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	Final

SCALE 1 : 500  
DIMENSIONS ARE IN METRES

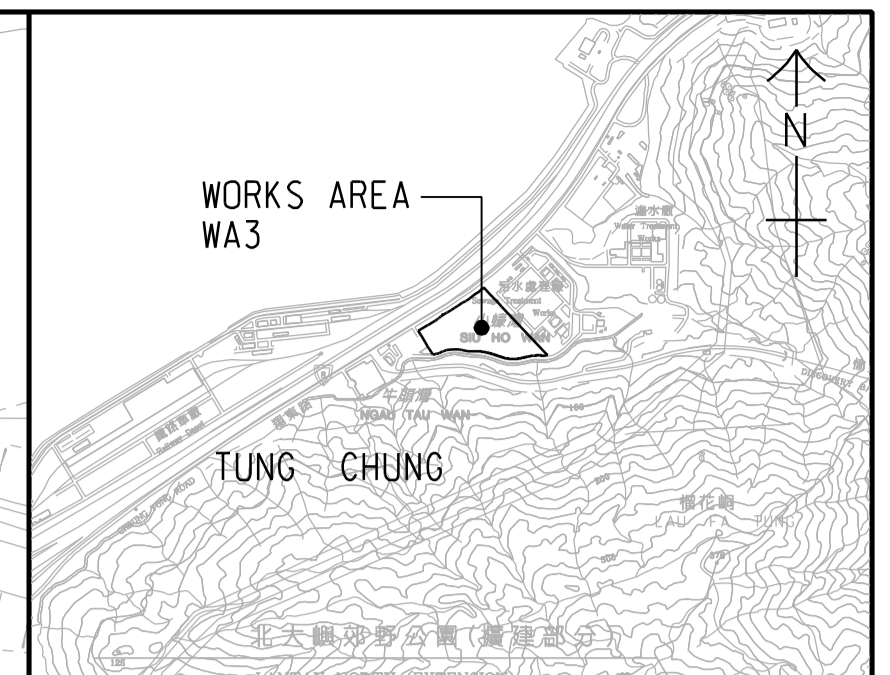
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Plot File by : 2015/3/24 WANGFY2



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



LOCATION PLAN  
SCALE 1 : 25000

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

- LEGEND:
- WORKS AREA BOUNDARY
  - PORTION 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 8200m<sup>2</sup> (WHOLE)

REV.	DESCRIPTION	DATE
-	TENDER DRAWING	MAR. 15

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

WORKS AREA WA3

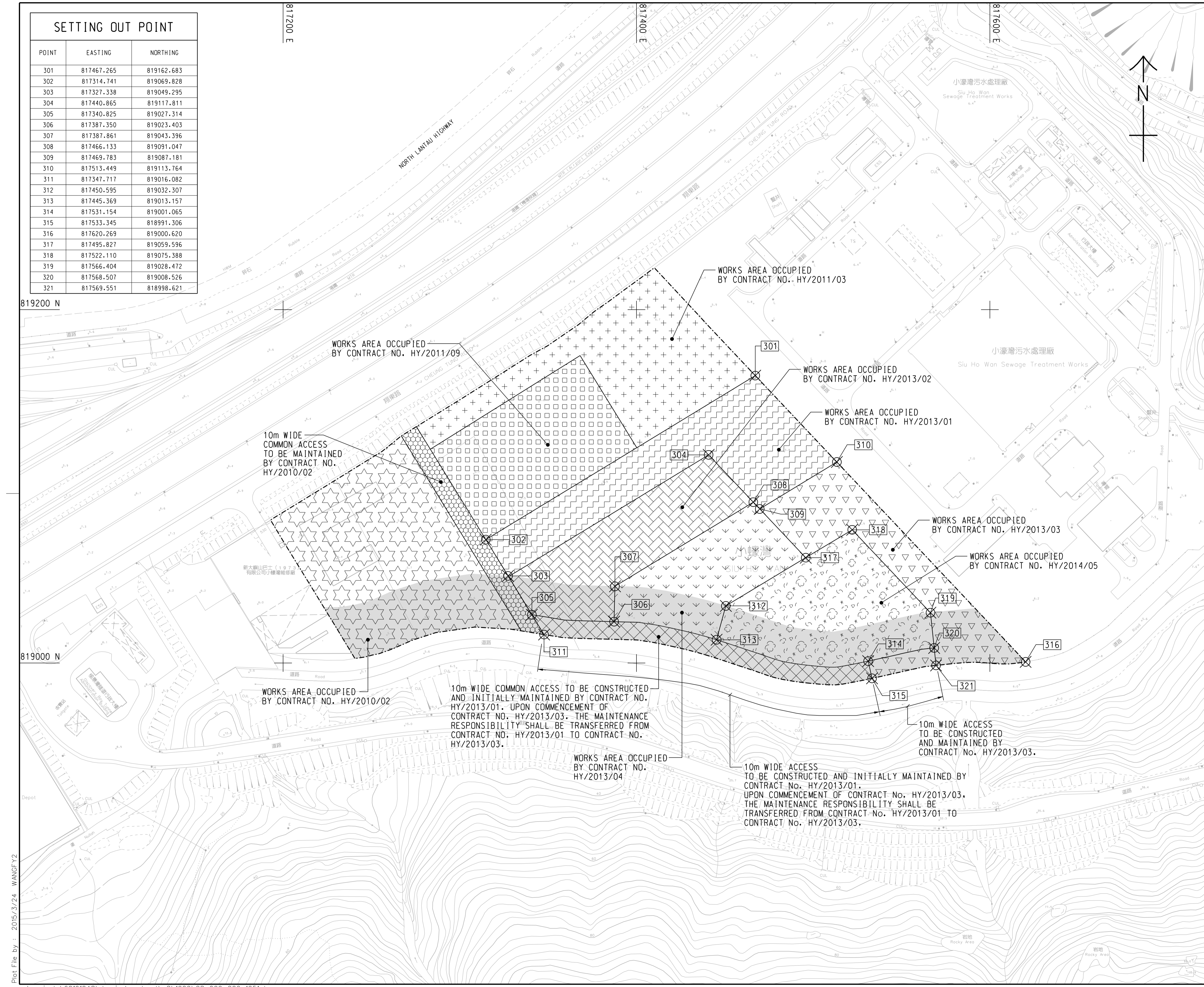
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Rogers Stirk Harbour + Partners  
BURO HAPPOLD ATKINS ADI

DRG. NO. 60191048/C8/000/C00/1051  
圖紙編號

DESIGNED BY BWCW	CONTRACT NO. HY/2014/05	P. Dir. APPROVED TKH
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SCALE 1:1000  
DIMENSIONS ARE IN METRES

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Plot File by : 2015/3/24 WANGFY2

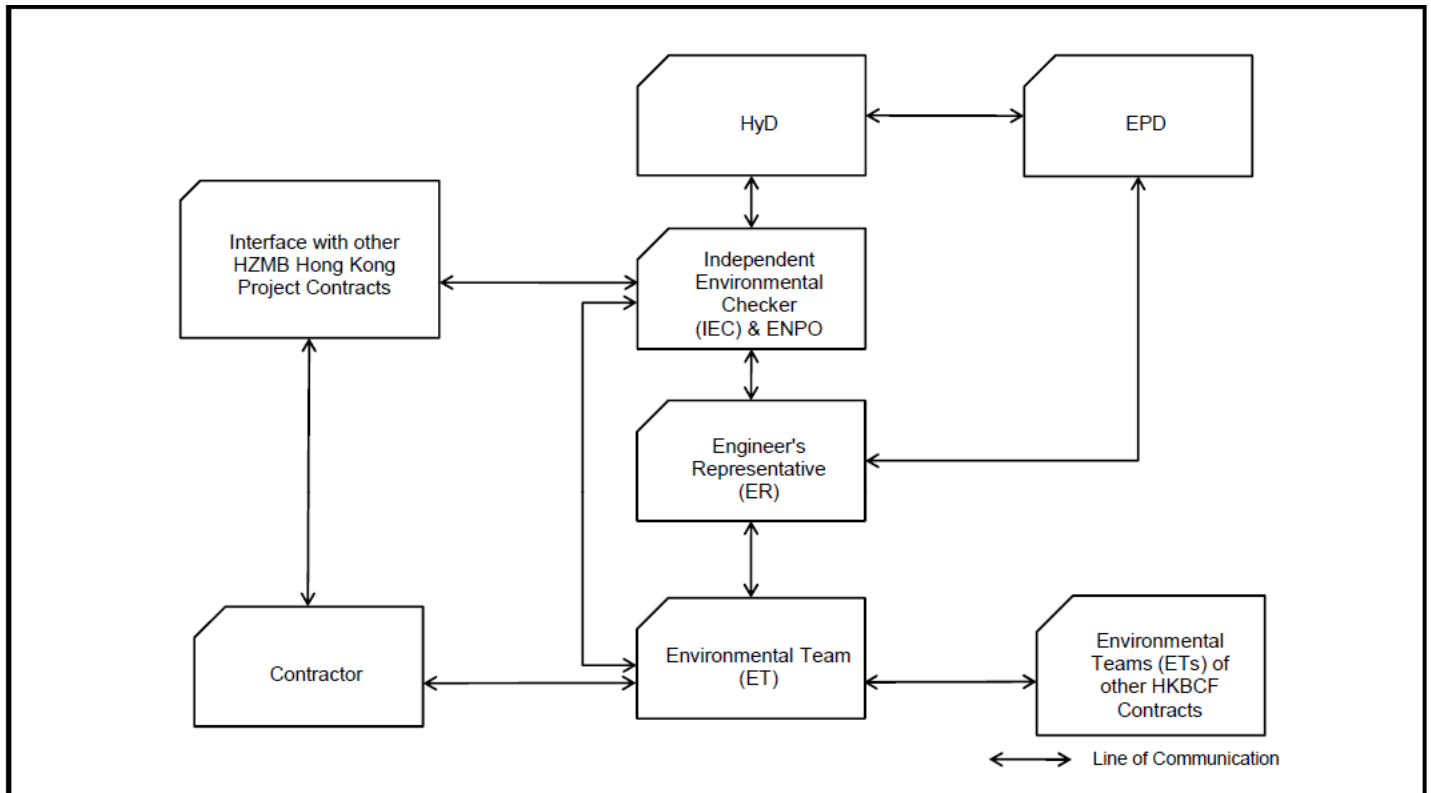


# APPENDIX B

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## Project Organization for Environmental Works

## Project Organisation for Environmental Works





# APPENDIX C

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## Construction Programme



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017	
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01
<b>RAB6- Target Basement Programme Stated 01 July 2017</b>																			
<b>PROGRAMME SUMMARY</b>																			
<b>GENERAL/PRELIMINARIES</b>																			
<b>DESIGN AND ENGINEERING</b>																			
<b>PROCUREMENT, MANUFACTURING &amp; DELIVERIES</b>																			
<b>CONSTRUCTION</b>																			
<b>Building 021 - C&amp;ED Dangerous Goods Store</b>																			
<b>Raft</b>																			
<b>Structure</b>																			
<b>ABWF/E&amp;M</b>																			
<b>Internal Finishes</b>																			
<b>Degree 1</b>																			
RAB-21-0210	021 - MEP 1st Fix																		
RAB-KD4A10	021 - Projected achievement of Stage 4A of the Works																		
<b>Degree 2</b>																			
RAB-21-0290	021 - E&M 2nd Fix																		
RAB-21-0450	021 - Louver & Door Frame																		
RAB-21-0410	021 - Power On																		
RAB-KD4B10	KD4B - Projected achievement of Stage 4B of the Works																		
<b>Degree 3</b>																			
RAB-21-0510	021 - Wall & Ceiling Finish																		
RAB-21-0330	021 - MEP Final Fix																		
RAB-21-0460	021 - Floor Painting																		
RAB-21-0340	021 - Snagging and Remedials ( Bldg. Internal)																		
RAB-21-0430	021 - Door Panel & Ironmongery																		
RAB-21-0520	021 - MEP Balance of Works																		
RAB-21-0345	KD4C - Projected achievement of Stage 4C of the Works																		
RAB-KD4C10	021 - End Users and MoM handover inspection																		
<b>Roof Finishes</b>																			
RAB-21-0270	021 - Install Railing 50m																		
RAB-21-0280	021 - Install Cat Ladder and Roof Hatch																		
<b>External Finishes</b>																			
<b>Facade</b>																			
RAB-21-0190	021 - Install External Louvers /Windows/Temp Doors																		
RAB-21-0320	021 - Snagging and Remedials (External)																		
<b>At Grade</b>																			
RAB-21-380	021 - Prepare Sub Grade																		
RAB-21-370	021 - Laying Geo Textile																		
RAB-21-390	021 - Lay Granular Sub-Base																		
RAB-21-400	021 - Laying Course																		
RAB-21-360	021 - Concrete Block Paving																		
RAB-21-560	021 - Grouting to Concrete Pavers																		
<b>Utilities and Drainage</b>																			
RAB-21-7290	021 - Construct Permanent Drainage, Manholes & Draw Pits																		
RAB-21-7300	021 - Utilites and Common Telecom Ducting																		
<b>Testing &amp; Commissioning</b>																			
RAB-TC21-1000	021 - T&C (HVAC, FS, P&D, OTHERS)																		
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																			
<b>BBE0</b>																			

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◻ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-BEE-0100	021 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-0110	021 - Submit REA Certification to EDMS																			
RAB-BEE-0120	021 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>Dangerous Goods Licence</b>																				
RAB-21-0300	021 - Submit License Applications																			
RAB-21-0350	021 - DG Licence Inspection & Processing																			
RAB-21-0360	021 - Issue DG Licence																			
<b>Fire Servives Department (VAC)</b>																				
RAB-FSD-810	021 - Submit Form 314 to FSD																			
RAB-FSD-820	021 - Submit Form 501 to FSD																			
RAB-FSD-300	021 - FSD Inspection Period																			
<b>Engineer (AECOM)</b>																				
<b>Building 022 - Customs Detective Dog Base Building</b>																				
<b>Excavation</b>																				
<b>Raft Foundations</b>																				
<b>Structure</b>																				
<b>Walls &amp; Columns</b>																				
<b>Roof Slab</b>																				
<b>North Structure</b>																				
<b>Cure and Strip</b>																				
<b>Middle Structure</b>																				
<b>Cure and Strip</b>																				
<b>South Structure</b>																				
<b>Cure and Strip</b>																				
<b>ABWF/E&amp;M</b>																				
<b>Internal Finishes</b>																				
<b>North</b>																				
<b>Degree 1</b>																				
RAB-22-8205	022 - Blockwork Walls & Partition																			
RAB-22-8215	022 - Plastering/Rendering																			
RAB-22-8225	022 - MEP 1st Fix																			
RAB-22-8665	022 - Screeding																			
RAB-22-8285	022 - Undercoat																			
RAB-22-0680	022 - Access for C3 Cable containment																			
RAB-22-0670	022 - Access to C3 Cabling Works***																			
RAB-22-0660	022 - ABWF and MEP works to Degree 1 (KD5A),																			
<b>Degree 2</b>																				
RAB-22-0855	022 - Frame for Wall Panel & Cladding																			
RAB-22-0895	022 - MEP 2nd Fix																			
RAB-22-0885	022 - Door Frame & Louvers																			
RAB-22-0910	022 - Power On																			
RAB-22-0860	022 - ABWF and MEP works to Degree 2 (KD5B)																			
RAB-22-0905	022 - Access for C3 Equipment Installation at ELV & MDP***																			
<b>Degree 3</b>																				
RAB-22-8535	022 - Floor Tiling + Floor Finishes (for Early Handover Rooms)																			
RAB-22-8395	022 - Wall Tiling																			
RAB-22-0865	022- Ceiling Frame																			
RAB-22-8255	022 - Ceiling Finish Compl.																			
RAB-22-8245	022 - Glazing																			
RAB-22-8365	022 - Floor Finish Other Than Act. No. RAB-22-8535																			
RAB-22-8275	022 - MEP Final Fix																			

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-22-0870	022 - MEP Balance of Works																			
RAB-22-8265	022 - Door Panel & Ironmongery																			
RAB-22-8545	022 - Early Handover Rooms Ready for End Users***																			
RAB-22-8295	022 - Snagging and Remedials (Bldg. Internal)																			
RAB-22-0980	022 - End Users and MOM Handover Inspection																			
RAB-22-0950	022 - ABWF and MEP works to Degree 3 (KD5C)																			
<b>External Finishes</b>																				
<b>Facade</b>																				
RAB-22-0470	022 - External Painting, Tiling & Cladding																			
RAB-22-0710	Snag Listing - Bldg. External & External Works																			
<b>At Grade</b>																				
RAB-22-2100	022 - Prepare Sub Grade																			
RAB-22-2110	022 - Laying Geo Textile																			
RAB-22-2120	022 - Lay Granular Sub-Base																			
RAB-22-2130	022 - Laying Course																			
RAB-22-2170	022 - Landscaping for Outdoor Excise Lawn																			
RAB-22-2140	022 - Concrete Block Paving																			
RAB-22-2150	022 - Concrete Paver Grouting Works																			
<b>Roof Finishes - North</b>																				
RAB-22-0400	022 - Top Screed																			
RAB-22-0460	022 - Install Roof Tiles																			
RAB-22-0530	022 - Install Railing																			
RAB-22-0540	022 - Install Cat Ladder and Roof Hatch																			
RAB-22-0720	022 - Make good external surfaces																			
<b>Specialist Installations</b>																				
RAB-22-0990	022 - Kennels Installation (42No)																			
RAB-22-1050	022 - Install HR and SPR Glass Reinforced Polyester Water Tanks (																			
RAB-22-0550	022 - Small Glass Canopy South Entrance																			
<b>Window Wall</b>																				
RAB-22-7020	022 - Complete Formwork Stripping to Roof Level																			
RAB-22-7030	022 - Install Primary Steelwork for Window Wall																			
RAB-22-7040	022 - Install Secondary Steelwork for Window Wall																			
RAB-22-7050	022 - Glazing to Window Wall																			
<b>Dog Swimming Pool</b>																				
RAB-22-0480	022 - Waterproofing																			
RAB-22-0600	022 - Tiling to Dog Swimming Pool																			
RAB-22-0490	022 - Backfill to ground level at Dog Swimming Pool																			
RAB-22-0640	022 - Plumbing and filtration systems																			
RAB-22-0630	022 - Metalworks and Railings																			
RAB-22-0700	022 - Snagging and Remedials - Dog Pool																			
<b>Utilities and Drainage</b>																				
RAB-22-8095	022 - Construct Permanent Drainage and Manholes																			
RAB-22-8135	022 - Install FS Water main																			
RAB-22-8115	022 - Install Flushing Water Mains																			
RAB-22-8105	022 - Install Fresh Water Mains																			
RAB-22-8125	022 - Utilites and Common Telecom Ducting																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC22-1000	022 - T&C (HVAC, FS, P&D, OTHERS)																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																				
<b>BEO</b>																				

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◻ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-BEE-120	022 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-130	022 - Submit REA Certification to EDMS																			
RAB-BEE-140	022 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-804	022 - Submit WWO 46 Pt. IV																			
RAB-WSD-254	022 - WSD's Processing/Inspection/Meter Connection																			
RAB-WSD-264	022 - Permanent Water ON/WSD Issue WWO 46 Part V Cert & Wa																			
<b>Fire Services Department (VAC)</b>																				
RAB-FSD-850	022 - Submit Form 314																			
RAB-FSD-860	022 - Submit Form 501																			
<b>Fire Services Water (FS)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-994	022 - Submit Form 314																			
RAB-FSD-895	022 - Submit WWO 46 Pt. IV, FS																			
RAB-FSD-984	022 - Submit WWO 46 Pt. V, FS																			
RAB-FSD-320	022 - Submit Form 501, FS																			
RAB-FSD-330	022 - FSD Inspection Period, FS																			
<b>Engineer (AECOM)</b>																				
RAB-22-2220	022 - Submit Building 022 As Built Drawings to Engineer																			
<b>Building 023 - C&amp;ED Outbound Cargo Examination Building and Examination PI</b>																				
<b>Excavation</b>																				
<b>Raft Foundations - Inspection Platform</b>																				
<b>Raft Foundations - Main Building</b>																				
<b>Structure</b>																				
<b>Ground Floor</b>																				
<b>Planters</b>																				
RAB-23-6140	023 - Construct North Planter Box and Ramp																			
RAB-23-6230	023 - Construct South Planter Box and Ramp																			
<b>Supporting Walls and Columns to +12.85mPD</b>																				
<b>First Floor</b>																				
<b>Cure and Strip</b>																				
<b>Supporting Walls and Columns to +17.1mPD</b>																				
<b>Roof</b>																				
<b>Cure and Strip</b>																				
<b>Supporting Walls and Columns to +19.1mPD</b>																				
<b>Lift Doghouse</b>																				
<b>Cure and Strip</b>																				
<b>ABWF/E&amp;M</b>																				
<b>Internal Finishes</b>																				
<b>Ground Floor</b>																				
<b>Degree 1</b>																				
RAB-23-5420	023 - Construct Blockwork Walls to G/F																			
RAB-23-5430	023 - Plastering & Undercoat, G/F																			
RAB-23-5470	023 - MEP 1st Fix, G/F																			
023 -23-5430	023 - Screeding, G/F																			
<b>Degree 2</b>																				
RAB-23-5860	023 - MEP 2nd Fix, G/F																			
RAB-23-5610	023 - Frame for Wall Panel & Cladding + Louver, G/F																			
RAB-23-5670	023 - Access to C3, C6 & C7 For Equip. Installation***, G/F																			

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◻ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
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Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
<b>Degree 3</b>																				
RAB-23-6320	023 - Ceiling Paint Finish, G/F																			
RAB-23-5930	023 - Wall Finish - Paint & Tile, G/F																			
RAB-23-6220	023 - Floor Finish Other Than Carpet, G/F																			
RAB-23-6380	023 - MEP Final Fix, G/F																			
RAB-23-6080	023 - Glazing, G/F																			
RAB-23-5760	023 - Ceiling Frame, G/F																			
RAB-23-6410	023 - Ceiling Plaster Board, G/F																			
RAB-23-5660	023 - Door Frame/Panel & Ironmongery, G/F																			
RAB-23-6180	023 - Floor Carpet Finish, G/F																			
RAB-23-6190	023 - Access to End Users, KD3C' - C3, C6 & C7 (Flr. Level Change)																			
<b>First Floor</b>																				
<b>Degree 1</b>																				
RAB-23-8055	023 - Construct Blockwork Walls, G/F - 1/F North (932m³), 1/F																			
RAB-23-8065	023 - Plastering & Undercoat, 1/F																			
RAB-23-8075	023 - MEP 1st Fix, 1/F																			
RAB-23-8215	023 - Screeding, 1/F																			
RAB-23-8345	023 - C3, C6 & C7 Cabling***, 1/F																			
<b>Degree 2</b>																				
RAB-23-8125	023 - MEP 2nd Fix, 1/F																			
RAB-23-8085	023 - Frame for Wall Panel & Cladding + Louver, 1/F																			
RAB-23-5790	023 - ABWF and MEP works to Degree 2 for others (KD3B) 1/F																			
RAB-23-8235	023 - Power On																			
RAB-23-8115	023 - Access for C3 for Equip. Instln***, 1/F, KD3D Target to Achieve																			
<b>Degree 3</b>																				
RAB-23-8135	023 - Ceiling Paint Finish, 1/F																			
RAB-23-8175	023 - Wall Finish - Paint & Tile, 1/F																			
RAB-23-8205	023 - Floor Finish Other Than Carpet, 1/F																			
RAB-23-8165	023 - MEP Final Fix, 1/F																			
RAB-23-8145	023 - Glazing, 1/F																			
RAB-23-8105	023 - Ceiling Frame, 1/F																			
RAB-23-8265	023 - MEP Balance of Works																			
RAB-23-8195	023 - Floor Carpet Finish, 1/F																			
RAB-23-8185	023 - Ceiling Plaster Board, 1/F																			
RAB-23-8155	023 - Door Panel/Ironmongery & Glass Baluster, 1/F																			
RAB-23-5970	023 - ABWF and MEP works to Degree 3 (KD3E)																			
RAB-23-2290	023 - Snag Listing & Remedial Works - Building Internal																			
RAB-23-8255	023 - ABWF and MEP works to Degree 3 - Remaining Area- 1/F																			
RAB-23-6040	023 - End Users and MOM Handover Inspection																			
RAB-23-8225	023 - Early Handover Rooms Ready to End Users***, KD3C Target t																			
<b>Roof Level Dog House</b>																				
RAB-23-6150	023 - ABWF and MEP works to Degree 1 R/F																			
RAB-23-6280	023 - ABWF and MEP works to Degree 2 R/F																			
RAB-23-6340	023 - ABWF and MEP works to Degree 3 R/F																			
<b>External Finishes</b>																				
<b>Facade</b>																				
RAB-23-5560	023 - External Render																			
RAB-23-5590	023 - External Tiling																			
RAB-23-5650	023 - External Painting																			
RAB-23-5990	023 - Dismantle Scaffolding																			

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RAB-23-6160	023 - Make good external surfaces																			
<b>At Grade</b>																				
RAB-23-5740	023 - Prepare Sub Grade																			
RAB-23-5820	023 - Laying Geo Textile																			
RAB-23-5910	023 - Lay Granular Sub-Base																			
RAB-23-5940	023 - Laying Course																			
RAB-23-6050	023 - Concrete Block Paving																			
RAB-23-6110	023 - Grouting Works to Concrete Pavers																			
<b>Window Wall</b>																				
<b>East</b>																				
RAB-23-6810	023 - Install Primary Steelwork for Window Wall - E																			
RAB-23-6820	023 - Install Secondary Steelwork for Window Wall - E																			
RAB-23-6830	023 - Glazing to Window Wall - E																			
<b>West</b>																				
RAB-23-6840	023 - Install Primary Steelwork for Window Wall - W																			
RAB-23-6850	023 - Install Secondary Steelwork for Window Wall - W																			
RAB-23-6860	023 - Glazing to Window Wall - W																			
<b>Roof Finishes</b>																				
RAB-23-5500	023 - Leveling screed																			
RAB-23-5550	023 - Waterproof membrane																			
RAB-23-5620	023 - Top Screed																			
RAB-23-5920	023 - Install Railing																			
<b>Green Roof</b>																				
RAB-23-5720	023 - Install green Roof Irrigation Systems																			
RAB-23-5900	023 - Complete Green Roofing Works																			
<b>Specialist Installations</b>																				
RAB-23-6270	023 - Install Lift (1 nos)																			
RAB-23-6010	023 - Installation of Roller Shutter Header Boxes (x 3)																			
RAB-23-7310	023 - Install Glazed Entrance Canopy																			
RAB-23-6250	023 - Installation of Roller Shutter Curtain (x3)																			
<b>PV Installation</b>																				
RAB-23-6350	023 - Install Supporting Frame and PV panel																			
RAB-23-6360	023 - Cable containment and grid cable wiring																			
RAB-23-6390	023 - Sub-array junction box installation & Connection																			
RAB-23-6400	023 - DC cable wiring from PV panel to EL room																			
<b>Steel Canopy</b>																				
RAB-23-6170	023 - Install Steel Support Columns																			
RAB-23-6200	023 - Install Primary Steelwork																			
RAB-23-6240	023 - Install Secondary Steelwork																			
RAB-23-6290	023 - Install Metal Cladding Panels																			
RAB-23-6310	023 - Install Misc Metalworks																			
<b>Utilities and Drainage</b>																				
RAB-23-7975	023 - Construct Permanent Drainage, Manholes & Draw Pits																			
RAB-23-7985	023 - Utilities and Common Telecom Ducting																			
RAB-23-7995	023 - Install Flushing Water Mains																			
RAB-23-8005	023 - Install Fresh Water Mains																			
RAB-23-8015	023 - Install FS Water Mains																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC23-1000	023 - T&C (HVAC, FS, P&D, OTHERS)																			
RAB-TC23-1010	023 - T&C (Lift)																			

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RAB-TC23-1015	023 - PV Self-test with Engineer																			
RAB-TC23-1020	023 - PV On-Grid inspection with CLP																			
<b>Statutory Submissions &amp; Approvals (Day 610 Completion)</b>																				
<b>BBE0</b>																				
RAB-BEE-150	023 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-160	023 - Submit REA Certification to EDMS																			
RAB-BEE-170	023 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>EMSD - Building 023 Lift Inspection</b>																				
RAB-FSD-170	023 - Submit EMSD Form 3 (Commencement of Lift Installation)																			
RAB-FSD-180	023 - Submit EMSD Form 5 (Completion of Lift Installation)																			
RAB-FSD-190	023 - EMSD Lift Inspection																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-774	023 - Submit WWO 46 Pt. IV for Building 023																			
RAB-WSD-107	023 - WSD Inspection/Meter Connection																			
RAB-WSD-109	023 - Permanent Water ON/WSD Issue WWO 46 Part V - Water C																			
<b>Fire Servives Department (VAC)</b>																				
RAB-FSD-890	023 - Submit Form 314																			
RAB-FSD-900	023 - Submit Form 501																			
<b>Fire Services Department (FSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-138	023 - Submit Form 314																			
RAB-FSD-108	023 - Submit WWO 46 Pt. IV for Building 023																			
RAB-FSD-112	023 - Issue WWO 46 Part V																			
RAB-FSD-122	023 - Submit Form 501																			
RAB-FSD-110	023 - FSD Inspection Period For Building 023																			
RAB-FSD-290	023 - Issuance of FS 172, FS Certificate of Compliance																			
<b>Engineer (AECOM)</b>																				
<b>Building 025 - Inbound Private Car Annexure</b>																				
<b>Excavation</b>																				
<b>Raft Foundations</b>																				
<b>Structure</b>																				
<b>Walls &amp; Columns</b>																				
<b>Roof Slab</b>																				
<b>Cure and Strip</b>																				
<b>ABWF/E&amp;M INTERNAL FINISHES</b>																				
<b>INTERNAL FINISHING WORKS</b>																				
<b>Degree 1</b>																				
RAB-25-7490	025 - Floor Screed																			
RAB-25-7400	025 - MEP 1st Fix																			
RAB-25-7390	025 - Plastering & Under Coat																			
<b>Degree 2</b>																				
RAB-25-7430	025 - MEP 2nd Fix																			
RAB-25-7450	025 - Frame for Wall Panel & Cladding																			
RAB-25-7570	025 - Raised Floor Pedestal																			
RAB-25-7560	025 - Access C3, C6 & C7 Equip. Installation***																			
RAB-25-7350	025 - Power On Available																			
RAB-KD6B10	KD6B - Projected achievement of Stage 6B of the Works																			
<b>Degree 3</b>																				
RAB-25-7470	025 - Ceiling Painting & Ceiling Sub-Frame																			

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		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-25-7620	025 - Ceiling Panel	[Actual Work]				[Remaining Work]														
RAB-25-7480	025 - Floor Tiling	[Actual Work]				[Remaining Work]														
RAB-25-7460	025 - MEP Final Fix	[Actual Work]				[Remaining Work]				[Critical Remaining]										
RAB-25-7610	025 - Wall Tiling	[Actual Work]				[Remaining Work]				[Critical Remaining]										
RAB-25-7580	025 - Floor Painting	[Actual Work]				[Remaining Work]														
RAB-25-7440	025 - Door Frame/Wall Panel	[Actual Work]				[Remaining Work]														
RAB-25-7600	025 - Wall Paint Finish Coat	[Actual Work]				[Remaining Work]				[Critical Remaining]										
RAB-25-7520	025 - Glazing	[Actual Work]				[Remaining Work]														
RAB-25-7630	025 - Early Handover Rooms Ready to End Users***, Target to Achieve	[Actual Work]				[Remaining Work]				[Critical Remaining]										
RAB-25-7370	025 - Snagging and Remedials	[Actual Work]				[Remaining Work]														
RAB-25-7550	025 - MEP Balance of Works	[Actual Work]				[Remaining Work]														
RAB-25-7510	025 - Plaster Board	[Actual Work]				[Remaining Work]														
RAB-25-7590	025 - Floor Carpet	[Actual Work]				[Remaining Work]				[Critical Remaining]										
RAB-25-7375	KD6C - Projected achievement of Stage 6C of the Works	[Actual Work]				[Remaining Work]														
RAB-KD6C10	025 - End Users and MoM handover inspection	[Actual Work]				[Remaining Work]														
<b>External Finishes</b>																				
<b>Facade</b>																				
RAB-25-0420	025 - External Tiling	[Actual Work]				[Remaining Work]														
RAB-25-0360	025 - Install External Louvers /Windows/Doors	[Actual Work]				[Remaining Work]														
RAB-25-0450	025 - External Painting	[Actual Work]				[Remaining Work]														
RAB-25-0580	025 - Make good external surfaces	[Actual Work]				[Remaining Work]														
RAB-25-0570	025 - Dismantle Scaffolding	[Actual Work]				[Remaining Work]														
<b>At Grade</b>																				
RAB-25-6400	025 - Prepare Sub Grade	[Actual Work]				[Remaining Work]														
RAB-25-6390	025 - Laying Geo Textile	[Actual Work]				[Remaining Work]														
RAB-25-6410	025 - Lay Granular Sub-Base	[Actual Work]				[Remaining Work]														
RAB-25-6420	025 - Laying Course	[Actual Work]				[Remaining Work]														
RAB-25-6380	025 - Concrete Block Paving	[Actual Work]				[Remaining Work]														
<b>Roof Finishes</b>																				
RAB-25-0530	025 - Install Roof Tiles - (1285m²)	[Actual Work]				[Remaining Work]														
RAB-25-0550	025 - Install Railing (222m)	[Actual Work]				[Remaining Work]														
RAB-25-0540	025 - Install Cat Ladders and Roof Hatch	[Actual Work]				[Remaining Work]														
<b>Green Roof</b>																				
RAB-25-0700	025 - Install Green Roof Irrigation Systems	[Actual Work]				[Remaining Work]														
RAB-25-0710	025 - Complete Green Roof Works	[Actual Work]				[Remaining Work]														
<b>Specialist Installations</b>																				
RAB-25-610	025 - Construct Immigration Counters x 3	[Actual Work]				[Remaining Work]														
RAB-25-620	025 - Construct Health Department Screening Station x 1	[Actual Work]				[Remaining Work]														
<b>Glazed Canopy</b>																				
RAB-25-0480	025 - Install Steel Support Columns (14 No)	[Actual Work]				[Remaining Work]														
RAB-25-0490	025 - Install Primary Steelwork	[Actual Work]				[Remaining Work]														
RAB-25-0500	025 - Install Secondary Steelwork	[Actual Work]				[Remaining Work]														
RAB-25-0520	025 - Install Glazed Panels	[Actual Work]				[Remaining Work]														
<b>IMMD Kiosk</b>																				
RAB-25-0380	025 - Internal ABWF and MEP of IMMD Kiosk	[Actual Work]				[Remaining Work]														
RAB-25-0350	025 - External Finishes to IMMD Kiosk	[Actual Work]				[Remaining Work]														
<b>Utilities and Drainage</b>																				
RAB-25-7250	025 - Construct Permanent Drainage, Manholes & Draw Pits	[Actual Work]				[Remaining Work]														
RAB-25-7260	025 - Utilities and Common Telecom Ducting	[Actual Work]				[Remaining Work]														
RAB-25-7270	025 - Install Flushing Water Mains	[Actual Work]				[Remaining Work]														

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RAB-25-7280	025 - Install Fresh Water Mains																			
RAB-25-7290	025 - Install FS Water Main																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC25-1000	025 - T&C (HVAC, FS, P&D, OTHERS)																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																				
<b>BBEO</b>																				
RAB-BEE-180	025 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-190	025 - Submit REA Certification to EDMS																			
RAB-BEE-200	025 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-744	025 - Submit WWO 46 Pt. IV																			
RAB-WSD-374	025 - WSD Inspection/Meter Connection																			
<b>Fire Services Department (VAC)</b>																				
RAB-FSD-930	025 - Submit Form 314, VAC																			
RAB-FSD-940	025 - Submit Form 501, VAC																			
<b>Fire Service Water (FS)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-350	025 - Submit WWO 46 Pt. IV, FS																			
<b>Engineer (AECOM)</b>																				
<b>Building 032 - Outbound Private Car Annexure</b>																				
<b>Excavation</b>																				
<b>Raft Foundations</b>																				
<b>Structure</b>																				
<b>Walls &amp; Columns</b>																				
<b>Roof Slab</b>																				
<b>Cure and Strip</b>																				
RAB-32-0690	032 - Cure and Strip False/Formwork, Water Tank																			
<b>ABWF/E&amp;M</b>																				
<b>Internal Finishes</b>																				
<b>Degree 1</b>																				
RAB-32-0460	032 - Construct Blockwork Walls (2170m <sup>2</sup> )																			
RAB-32-0720	032 - Plastering & Undercoat																			
RAB-32-0700	032 - Floor Screed																			
RAB-32-0510	032 - MEP 1st Fix																			
RAB-32-0820	023 - Access for C3 Cabling***																			
<b>Degree 2</b>																				
RAB-32-0560	032 - MEP 2nd Fix																			
RAB-32-0760	032 - Door & Window Frame + Louver																			
RAB-32-0840	032 - Access for C3, C6 & C7 Equip. Installation***																			
RAB-32-0660	032 - Power On																			
RAB-KD7B10	KD7B - Projected achievement of Stage 7B of the Works																			
<b>Degree 3</b>																				
RAB-32-0770	032 - Floor Tiling & Floor Finishes to Early handover Rooms																			
RAB-32-0750	032 - Ceiling Frame																			
RAB-32-0590	032 - MEP Final Fix																			
RAB-32-0790	032 - Glazing																			
RAB-32-0745	032 - Raised Floor																			
RAB-32-0870	032 - Ceiling Paint ffinish Coat & Ceiling Panel																			
RAB-32-0850	032 - Early Handover Rooms Ready to End Users***																			

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RAB-32-0740	032 - MEP Balance of Work																			
RAB-32-0860	032 - Floor Painting																			
RAB-32-0800	032 - Door Panel & Ironmongery																			
RAB-32-0680	32 - Snagging and Remedials																			
<b>Roof Finishes</b>																				
RAB-32-0440	032 - Waterproof membrane																			
RAB-32-0540	032 - Install Cat Ladders and Roof Hatch																			
RAB-32-0470	032 - Roof Tiling																			
RAB-32-0550	032 - Install Railing																			
<b>Green Roof</b>																				
RAB-32-0620	032 - Install Green Roof Irrigation Systems																			
RAB-32-0650	032 - Complete Green Roof Works																			
<b>External Finishes</b>																				
<b>Facade</b>																				
RAB-32-0400	032 - External Render																			
RAB-32-0450	032 - External Painting																			
RAB-32-0360	032 - Install External Louvers /Windows/Doors																			
RAB-32-0420	032 - External Tiling																			
RAB-32-0580	032 - Make good external surfaces																			
RAB-32-0570	032 - Dismantle Scaffolding																			
<b>At Grade</b>																				
RAB-32-6460	032 - Prepare Sub Grade																			
RAB-32-6450	032 - Laying Geo Textile																			
RAB-32-6470	032 - Lay Granular Sub-Base																			
RAB-32-6480	032 - Laying Course																			
RAB-32-6440	032 - Concrete Block Paving																			
<b>Specialist Installations</b>																				
RAB-32-630	032 - Construct Immigration Counters x 3																			
RAB-32-640	032 - Construct Health Department Screening Station X 1																			
<b>IMMD Kiosk</b>																				
RAB-32-0380	032 - Internal ABWF and MEP of IMMD Kiosk																			
RAB-32-0350	032 - External Finishes to IMMD Kiosk																			
<b>Glazed Canopy</b>																				
RAB-32-0480	032 - Install Steel Support Columns (14 No)																			
RAB-32-0490	032 - Install Primary Steelwork																			
RAB-32-0500	032 - Install Secondary Steelwork																			
<b>Utilities and Drainage</b>																				
RAB-32-7290	032 - Construct Permanent Drainage and Manholes (Approx 150m)																			
RAB-32-7330	032 - Install FS Water Main																			
RAB-32-7300	032 - Utilities and Common Telecom Ducting																			
RAB-32-7310	032 - Install Flushing Water Mains																			
RAB-32-7320	032 - Install Fresh Water Mains																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC32-1000	032 - T&C (HVAC, FS, P&D, OTHERS)																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																				
<b>BEO</b>																				
RAB-BEE-210	032 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-220	032 - Submit REA Certification to EDMS																			
RAB-BEE-230	032 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
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 ◻ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
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Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
<b>Completion</b>																				
RAB-WSD-714	032 - Submit WWO 46 Pt. IV																			
RAB-WSD-354	032 - WSD Issue WWO 46 Part V - Completion Cert of Plumbing & I																			
RAB-WSD-344	032 - WSD Inspection/Meter Connection																			
<b>Fire Servives Department (HVAC)</b>																				
RAB-FSD-960	032 - Submit Form 314, HVAC																			
RAB-FSD-970	032 - Submit Form 501, HVAC																			
<b>Fire Water Service (FS)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-380	032 - Submit WWO 46 Pt. IV, FS																			
RAB-FSD-610	032 - Submit WWO 46 Pt. V, FS																			
RAB-FSD-580	032 - Submit Form 501, FS																			
<b>Engineer (AECOM)</b>																				
RAB-32-7250	032 - Submit Building 032 As Built Drawings to Engineer																			
<b>Building 044 - E&amp;M Maintenance Building</b>																				
<b>Excavation</b>																				
<b>Raft</b>																				
<b>Structure</b>																				
<b>Walls &amp; Columns</b>																				
<b>Ground to First Floor</b>																				
<b>First Floor</b>																				
<b>Cure and Strip</b>																				
<b>First Floor to Second Floor</b>																				
<b>Second Floor</b>																				
<b>Cure and Strip</b>																				
RAB-44-0280	044 - Cure and Strip False/Formwork for +16.85mPD Slab, 1/F - 2/F																			
<b>Second Floor to Roof</b>																				
RAB-44-0270	044 - Construct External Walls to +20.65mPD (South)																			
RAB-44-610	044 - Install SPR (37m³) and FS (36m³) RC Water Tanks																			
<b>Roof Level</b>																				
RAB-44-0330	044 - Construct Roof Floor upto +20.65mPD (242m²) (72m³)																			
<b>Cure and Strip</b>																				
RAB-44-0370	044 - Cure and Strip False/Formwork for +20.65mPD Slab, 2/F - R/F																			
<b>ABWF/E&amp;M</b>																				
<b>Ground Floor</b>																				
<b>Degree 1</b>																				
RAB-44-1110	044 - Construct Blockwork Walls - G/F																			
RAB-44-1180	044 - Plastering & Undercoat - G/F																			
RAB-44-1185	044 - MEP 1st Fix - G/F																			
RAB-44-1190	044 - C3 & C8 Conduit Installation*** - G/F																			
RAB-44-1200	044 - C3 Cabling*** - G/F																			
RAB-44-1170	044 - Screed - G/F																			
<b>Degree 2</b>																				
RAB-44-9175	044 - MEP 2nd Fix - G/F																			
RAB-44-0770	044 - C3 Access for Equipment Installation																			
RAB-44-0760	044 - Door & Windor Frame + Louver - G/F																			
<b>Degree 3</b>																				
RAB-44-9285	044 - Wall Finish, Paint & Tile - G/F																			
RAB-44-9295	044 - Door Panel & Ironmongery - G/F																			
RAB-44-9245	044 - Ceiling Plaster Board Frame																			
RAB-44-9265	044 - Floor Tile Finish - G/F																			

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RAB-44-9235	044 - Ceiling Panel Frame - G/F																			
RAB-44-9255	044 - Ceiling Paint - G/F																			
RAB-44-9395	044 - Ceiling Plaster Board																			
RAB-44-9185	044 - MEP Final Fix - G/F																			
RAB-44-9345	044 - Ceiling Panel - G/F																			
RAB-44-9275	044 - Glazing - G/F																			
RAB-44-9355	044 - Floor Paint Finish - G/F																			
<b>First Floor</b>																				
<b>Degree 1</b>																				
RAB-44-9315	044 - Construct Blockwork Walls - 1/F																			
RAB-44-9335	044 - Plastering & Undercoat - 1/F																			
RAB-44-9405	044 - C3, C6 & C8 Conduit Installation*** - 1/F																			
RAB-44-9305	044 - MEP 1st Fix - 1/F																			
RAB-44-9415	044 - Access for C3 Cabling*** - 1/F																			
RAB-44-9325	044 - Screed - 1/F																			
<b>Degree 2</b>																				
RAB-44-9365	044 - MEP 2nd Fix - 1/F																			
RAB-44-9455	044 - Door & Window Frame + Louver - 1/F																			
<b>Degree 3</b>																				
RAB-44-9555	044 - Wall Finish, Paint & Tile - 1/F																			
RAB-44-9505	044 - Door Panel & Ironmongery - 1/F																			
RAB-44-9565	044 - Floor Tile Finish - 1/F																			
RAB-44-9705	044 - Ceiling Plaster Board																			
RAB-44-9465	044 - Ceiling Paint Finish - 1/F																			
RAB-44-9385	044 - Ceiling Panel Frame - 1/F																			
RAB-44-9695	044 - Ceiling Plaster Board Frame																			
RAB-44-9375	044 - MEP Final Fix - 1/F																			
RAB-44-9495	044 - Ceiling Panel - 1/F																			
RAB-44-9485	044 - Glazing - 1/F																			
RAB-44-9475	044 - Floor Paint Finish - 1/F																			
<b>Second Floor</b>																				
<b>Degree 1</b>																				
RAB-44-9525	044 - Construct Blockwork Walls - 2/F																			
RAB-44-9755	044 - C3 & C8 Conduit Installation*** - 2/F																			
RAB-44-9545	044 - Plastering & Undercoat - 2/F																			
RAB-44-9765	044 - Access for C3 Cabling*** - 2/F																			
RAB-44-9535	044 - Screed - 2/F																			
RAB-44-9515	044 - MEP 1st Fix - 2/F																			
RAB-KD8A20	044 - Projected achievement of Stage 8A of the Works - 2/F																			
<b>Degree 2</b>																				
RAB-44-9575	044 - MEP 2nd Fix - 2/F																			
RAB-44-9665	044 - Door & Window Frame + Louver - 2/F																			
RAB-44-9605	044 - Power On - 2/F																			
RAB-44-0610	KD8B - Projected achievement of Stage 8B of the Works - 2/F																			
<b>Degree 3</b>																				
RAB-44-9595	044 - Wall Finish, Paint & Tile - 2/F																			
RAB-44-9635	044 - Ceiling Paint Finish - 2/F																			
RAB-44-9715	044 - Door Panel & Ironmongery - 2/F																			
RAB-44-9725	044 - Ceiling Plaster Board Frame - 2/F																			
RAB-44-9735	044 - Ceiling Plaster Board																			

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RAB-44-9685	044 - Floor Tile Finish & Floor Finish to Early handover Rooms - 2/F																			
RAB-44-9675	044 - Glazing - 2/F																			
RAB-44-9645	044 - Ceiling Panel Frame - 2/F																			
RAB-44-9585	044 - MEP Final Fix - 2/F																			
RAB-44-9795	044 - MEP Balance of Works																			
RAB-44-9745	044 - Ceiling Panel - 2/F																			
RAB-44-9625	044 - Snagging and Remedials																			
RAB-44-9655	044 - Floor Finish Other Than Act. No. RAB-44-9685- 1/F																			
<b>Roof Finishes</b>																				
RAB-44-0420	044 - Leveling screed - (242m²)																			
RAB-44-0450	044 - Waterproof membrane - (242m²)																			
RAB-44-1150	044 - Insulation Board - (242m²)																			
RAB-44-0480	044 - Top Screed - (242m²)																			
RAB-44-0520	044 - Install Roof Tiles - (242m²)																			
RAB-44-0540	044 - Install Railing																			
RAB-44-0550	044 - Install Cat Ladder and Roof Hatch																			
<b>Green Roof</b>																				
RAB-44-0320	044 - Erect External Scaffolding																			
RAB-44-0350	044 - Leveling screed - (242m²)																			
RAB-44-0360	044 - Waterproof membrane - (242m²)																			
RAB-44-0390	044 - Top Screed - (242m²)																			
<b>External Finishes</b>																				
<b>Facade</b>																				
RAB-44-0430	044 - Install External Louvers /Windows/Doors																			
RAB-44-0470	044 - External Render																			
RAB-44-0530	044 - External Painting																			
RAB-44-0490	044 - External Tiling																			
RAB-44-0570	044 - Dismantle Scaffolding																			
<b>At Grade</b>																				
RAB-44-6520	044 - Prepare Sub Grade																			
<b>Specialist Installations</b>																				
RAB-44-0600	044 - Install Lift (1 nos)																			
RAB-44-1100	044 - Installation of Roller Shutter Header Box																			
RAB-44-2250	044 - Small Glass Canopy North Elevation																			
RAB-44-1090	044 - Installation of Roller Shutter Steel Curtain																			
<b>Curtain Wall</b>																				
<b>East</b>																				
RAB-44-6870	044 - Complete Formwork Stripping to Roof Level																			
RAB-44-6880	044 - Install Primary Steelwork for Window Wall - East																			
RAB-44-6890	044 - Install Secondary Steelwork for Window Wall - East																			
RAB-44-6900	044 - Glazing to Window Wall - East																			
<b>West</b>																				
RAB-44-6920	044 - Install Primary Steelwork for Window Wall - West																			
RAB-44-6930	044 - Install Secondary Steelwork for Window Wall - West																			
RAB-44-6940	044 - Glazing to Window Wall - West																			
<b>Utilities and Drainage</b>																				
RAB-44-7895	044 - Construct Permanent Drainage and Manholes (Approx 100m)																			
RAB-44-7935	044 - Install FS Water Main																			
RAB-44-7915	044 - Install Flushing Water Mains																			
RAB-44-7925	044 - Install Fresh Water Mains																			

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		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-44-7905	044 - Utilities and Common Telecom Ducting																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC44-1000	044 - T&C (HVAC, FS, P&D, OTHERS)																			
<b>Statutory Submissions &amp; Approvals</b>																				
<b>BEO</b>																				
RAB-BEE-240	044 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-250	044 - Submit REA Certification to EDMS																			
RAB-BEE-260	044 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>EMSD - Building 044 Lift Inspection</b>																				
RAB-FSD-200	044 - Submit EMSD Form 3 (Commencement of Lift Installation)																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-684	044 - Submit WWO 46 Pt. IV																			
RAB-WSD-314	044 WSD Inspection/Meter Connection																			
<b>Fire Services Department (HVAC)</b>																				
RAB-FSD-1020	044 - Submit Form 314 to FSD, HVAC																			
<b>Fire Water Services (FS)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-116	044 - Submit WWO 46 Pt. IV, FS																			
RAB-FSD-120	044 WSD Issue WWO Part V																			
<b>Engineer (AECOM)</b>																				
RAB-44-7280	044 - Submit Building 044 As Built Drawings to Engineer																			
<b>Building 045 - Highways Depot &amp; Administration Building</b>																				
<b>Raft Foundation</b>																				
<b>Diesel Fuel Chamber</b>																				
<b>Structure G/F to R/F</b>																				
<b>G/F to 1/F Walls &amp; Columns</b>																				
<b>1/F Slab</b>																				
<b>Cure and Strip</b>																				
<b>1/F to 2/F Walls &amp; Columns</b>																				
<b>2/F Slab</b>																				
<b>Cure and Strip</b>																				
<b>2/f to R/F Walls &amp; Columns</b>																				
<b>Roof Level Slab</b>																				
RAB-45-0700	045 - Construct Roof Floor upto +20.65mPD Bay 3 (285m²) (approx																			
RAB-45-1230	045 - Construct Roof Floor upto +20.65mPD Bay 4 (285m²) (approx																			
<b>Cure and Strip</b>																				
RAB-45-0750	045 - Cure and Strip False/Formwork +20.65mPD Bay 3, 2/F-R/F																			
RAB-45-1240	045 - Cure and Strip False/Formwork +20.65mPD Bay 4, 2/F-R/F																			
<b>ABWF/E&amp;M</b>																				
<b>Ground Floor, South - G/F</b>																				
<b>Degree 1, G/F</b>																				
RAB-45-0400	045 - C3 & C8 Conduit Installation, G/F***																			
RAB-45-0390	045 - Construct Blockwork Walls - G/F																			
RAB-45-9725	045 - MEP 1st Fix - G/F																			
RAB-45-9775	045 - Plastering & Undercoat - G/F																			
RAB-45-0440	045 - Access for C3 Cabling Works, G/F***																			
RAB-45-9765	045 - Screed - G/F																			
<b>Degree 2, G/F</b>																				
RAB-45-9805	045 - MEP 2nd Fix - G/F																			

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RAB-45-9895	045 - Door & Windor Frame + Louver - G/F					[Red bar]															
<b>Degree 3, G/F</b>																					
RAB-45-9935	045 - Wall Finish, Paint & Tile - G/F	[Blue bar]				[Red bar]															
RAB-45-10005	045 - Ceiling Paint - G/F	[Blue bar]				[Green bar]															
RAB-45-9945	045 - Door Panel & Ironmongery - G/F					[Green bar]															
RAB-45-9915	045 - Floor Finish (Paint & Tile) - G/F					[Red bar]															
RAB-45-9815	045 - MEP Final Fix - G/F					[Green bar]															
RAB-45-9925	045 - Glazing - G/F					[Green bar]															
RAB-45-10035	045 - Ceiling Plaster Board Frame & Ceiling Panel Frame - G/F					[Red bar]															
RAB-45-10055	045 - Ceiling Plaster Board & Ceiling Panel- G/F									[Green bar]											
<b>First Floor, 1/F</b>																					
<b>Degree 1, 1/F</b>																					
RAB-45-9965	045 - Construct Blockwork Walls - 1/F	[Blue bar]																			
RAB-45-9985	045 - Plastering & Undercoat - 1/F	[Blue bar]																			
RAB-45-9975	045 - Screed - 1/F	[Blue bar]				[Green bar]															
RAB-45-9955	045 - MEP 1st Fix - 1/F	[Blue bar]																			
RAB-45-9995	045 - C3, C6 & C8 Conduit Installation, 1/F***					[Red bar]															
RAB-45-10045	045 - Access for C3 Cabling Works, 1/F***																				
<b>Degree 2, 1/F</b>																					
RAB-45-10015	045 - MEP 2nd Fix - 1/F				[Blue bar]					[Red bar]											
RAB-45-10105	045 - Door & Windor Frame + Louver - 1/F									[Red bar]											
RAB-45-10065	045 - Access to C3 Equipment Instalation***																				
<b>Degree 3, 1/F</b>																					
RAB-45-10145	045 - Wall Finish, Paint & Tile - 1/F					[Green bar]															
RAB-45-10155	045 - Door Panel & Ironmongery - 1/F									[Green bar]											
RAB-45-10175	045 - Ceiling Paint - 1/F																				
RAB-45-10125	045 - Floor Finish (Paint & Tile) - 1/F									[Red bar]											
RAB-45-10285	045 - Glazing - 1/F									[Green bar]											
RAB-45-10025	045 - MEP Final Fix - 1/F									[Green bar]											
RAB-45-10205	045 - Ceiling Plaster Board Frame Ceiling Panel Frame- 1/F									[Red bar]											
RAB-45-10245	045 - Ceiling Plaster Board & Ceiling Panel - 1/F									[Green bar]											
RAB-45-10275	045 - Early Handover to End users***																				
<b>Second Floor, 2/F</b>																					
<b>Degree 1, 2/F</b>																					
RAB-45-0810	045 - Construct Blockwork Walls - 2/F					[Red bar]															
RAB-45-10195	045 - Plastering & Undercoat - 2/F					[Red bar]															
RAB-45-10185	045 - Screed - 2/F					[Green bar]															
RAB-45-10165	045 - MEP 1st Fix - 2/F					[Red bar]															
RAB-45-0830	045 - Access to C3, C6 & C8 Conduit Installation, 2/F***																				
RAB-45-0840	045 - Access for C3 Cabling Works, 2/F***																				
RAB-45-0900	045 - Projeted achievement of Stage 8A of the Works - 2/F																				
<b>Degree 2, 2/F</b>																					
RAB-45-10225	045 - MEP 2nd Fix - 2/F					[Red bar]															
RAB-45-10315	045 - Door & Windor Frame + Louver - 2/F									[Red bar]											
RAB-45-10255	045 - Power On - 2/F																				
RAB-45-10295	045 - Access for C3 Equip. Installation, 2/F***																				
RAB-45-0950	KD8B - Projected achievement of Stage 8B of the Works - 2/F																				
RAB-45-10405	045 - Early Handover Rooms Ready to End Users																				
<b>Degree 3, 2/F</b>																					
RAB-45-10395	045 - Ceiling Paint - 2/F									[Green bar]											

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RAB-45-10335	045 - Floor Finish (Paint & Tile) - 2/F																			
RAB-45-10355	045 - Wall Finish, Paint & Tile - 2/F																			
RAB-45-10375	045 - Ceiling Plaster Board Frame & Ceiling Panel Frame - 2/F																			
RAB-45-10385	045 - Ceiling Plaster Board & Ceiling Panel - 2/F																			
RAB-45-10235	045 - MEP Final Fix - 2/F																			
RAB-45-10345	045 - Glazing - 2/F																			
RAB-45-0980	045 - Snagging and Remedials - 2/F																			
RAB-45-10365	045 - Door Panel & Ironmongery - 2/F																			
RAB-45-10305	045 - MEP Balance of Works																			
RAB-45-10265	045 - End Users and MoM handover inspection																			
RAB-45-0970	KD8C - Projected achievement of Stage 8C of the Works - 2/F																			
<b>External Finishes</b>																				
<b>Bldg. External Finishes</b>																				
<b>Facade</b>																				
RAB-45-0760	045 - Make good external surfaces																			
RAB-45-0630	045 - External Render																			
RAB-45-0620	045 - Install External Louvers /Windows/Doors																			
RAB-45-0690	045 - External Painting																			
RAB-45-0720	045 - Dismantle Scaffolding																			
<b>At Grade</b>																				
RAB-45-6580	045 - Prepare Sub Grade																			
RAB-45-6570	045 - Laying Geo Textile																			
RAB-45-6590	045 - Lay Granular Sub-Base																			
RAB-45-6600	045 - Laying Course																			
RAB-45-6560	045 - Concrete Block Paving																			
RAB-45-6610	045 - Grouting Works to Concrete Pavers																			
<b>Roof Finishes -</b>																				
RAB-45-0820	045 - Leveling screed																			
RAB-45-0860	045 - Waterproof membrane																			
RAB-45-0880	045 - Top Screed																			
RAB-45-0910	045 - Install Roof Tiles																			
RAB-45-0920	045 - Install Railing																			
RAB-45-0930	045 - Install Cat Ladder and Roof Hatch																			
<b>Green Roof - Noth Side, 2/F Level</b>																				
RAB-45-0600	045 - Leveling screed																			
RAB-45-0650	045 - Waterproof membrane																			
RAB-45-1210	045 - Insulation Board																			
RAB-45-0670	045 - Top Screed																			
RAB-45-0680	045 - Install green Roof Irrigation Systems																			
RAB-45-0740	045 - Complete Green Roofing Works																			
<b>Specialist Installations</b>																				
RAB-45-1125	045 - Install Genset and swtich board G/F																			
RAB-45-0590	045 - Install Lift (1 nos)																			
RAB-45-6000	045 - Small Glass Canopy North Elevation																			
<b>Window Wall</b>																				
<b>East</b>																				
RAB-45-6950	045 - Complete Formwork Stripping to Roof Level																			
RAB-45-6960	045 - Install Primary Steelwork for Window Wall																			
RAB-45-6970	045 - Install Secondary Steelwork for Window Wall																			
RAB-45-6980	045 - Glazing to Window Wall																			

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
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Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
<b>West</b>																				
RAB-45-6990	045 - Install Primary Steelwork for Window Wall																			
RAB-45-7000	045 - Install Secondary Steelwork for Window Wall																			
RAB-45-7010	045 - Glazing to Window Wall																			
<b>Utilities and Drainage</b>																				
RAB-45-7935	045 - Construct Permanent Drainage and Manholes (Approx 180m)																			
RAB-45-7945	045 - Utilites and Common Telecom Ducting																			
RAB-45-7975	045 - Install FS Water Main																			
RAB-45-7955	045 - Install Flushing Water Mains																			
RAB-45-7965	045 - Install Fresh Water Mains																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC45-1020	045 - T&C (HVAC, FS, P&D, OTHERS)																			
RAB-TC45-1030	045 - T&C, Lift																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																				
<b>BBE0</b>																				
RAB-BEE-270	045 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-280	045 - Submit REA Certification to EDMS																			
RAB-BEE-290	045 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>EMSD - Building 045 Lift Inspection</b>																				
RAB-FSD-230	045 - Submit EMSD Form 3 (Commencement of Lift Installation)																			
RAB-FSD-240	045 - Submit EMSD Form 5 (Completion of Lift Installation)																			
<b>Fuel Tank - DG License</b>																				
RAB-FSD-660	045 - FSD Inspection & Approval																			
RAB-FSD-680	045 - FSD Issue License																			
<b>Generator Set - EPD Permit</b>																				
RAB-EPD-0100	045 - DG Storage Drwg. Ready for Submission																			
RAB-EPD-0110	045 - Submmit to EPD																			
RAB-EPD-0120	045 - EPD Issue Permit																			
RAB-EPD-0130	045 - Submission Form 501to EPD																			
RAB-EPD-0140	045 - EPD Approval																			
<b>Generator Set - DG Licence</b>																				
RAB-FSD-690	045- Genset Ready for DG Inspection																			
RAB-FSD-700	045 - Notify FSD for DG Inspection																			
RAB-FSD-710	045 - FSD (Vent) /FS Inspection/Process License																			
RAB-FSD-720	045 - DG Licence Issued																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-654	045 - Submit WWO 46 Pt. IV																			
RAB-WSD-284	045 - WSD's Processing/Inspection/Meter Connection																			
RAB-WSD-294	045 - WSD Issue WWO 046 Part V, Plumbing Inst'n Cert & Connect																			
<b>HVAC</b>																				
<b>FSD</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-440	045 - Submit WWO 46 Pt. I V																			
RAB-FSD-600	045 - Submit WWO 46 Pt. V																			
<b>Engineer (AECOM)</b>																				
RAB-45-7310	045 - Submit Building 045 As Built Drawings to Engineer																			
<b>Building 050 - Public Toilets Type 2</b>																				
<b>Public Toilet (Portion H1)</b>																				

█ Remaining Level of Effort   
 █ Actual Work   
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 ◊ Finish Constraint

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		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01
<b>Excavation</b>																			
<b>Raft</b>																			
RAB-50-1330	050 H1 - Ground Slab																		
<b>Structure</b>																			
RAB-50-1060	050 H1 - Construct RC Walls & Columns (External and Internal)	[Actual Work]				[Critical Remaining]													
RAB-50-1070	050 H1 - Construct Roof Floor at +11.525mPD	[Actual Work]				[Critical Remaining]													
RAB-50-4310	050 H1 - Construct RC Support Columns for Aluminium Solar Shade					[Critical Remaining]													
RAB-50-1080	050 H1 - Cure and Strip False/Formwork									[Critical Remaining]									
<b>ABWF/E&amp;M</b>																			
<b>Internal Finishes</b>																			
<b>Degree 1</b>																			
RAB-50-1110	050 H1 - Construct Blockwork Walls (126m <sup>2</sup> )									[Critical Remaining]									
RAB-50-1320	050 H1 - Screeding									[Critical Remaining]									
RAB-50-1340	050 H1 - Plastering & Undercoat									[Critical Remaining]									
RAB-50-1170	050 H1 - MEP 1st Fix									[Critical Remaining]									
RAB-KD9A40	050 H1 - Access for C3 Cabling Works													[Finish Constraint]					
RAB-KD9A10	KD9A - Projected achievement of Stage 9A of the Works													[Finish Constraint]					
<b>Degree 2</b>																			
RAB-50-1360	050 H1 - Louver / Door Frame													[Critical Remaining]					
RAB-50-1270	050 H1 - MEP 2nd Fix													[Critical Remaining]					
<b>Degree 3</b>																			
RAB-50-1310	050 H1 - Ceiling Frame													[Critical Remaining]					
RAB-50-1350	050 H1 - Wall Finish													[Critical Remaining]					
RAB-50-1370	050 H1 - Ceiling & Floor Finish													[Critical Remaining]					
<b>Specialist installation</b>																			
RAB-50-1240	050 H1 - Installation of Sanitaryware and Fixtures													[Critical Remaining]					
<b>Roof Finishes</b>																			
RAB-50-1100	050 H1 - Install Skylights (8No)									[Critical Remaining]									
RAB-50-1130	050 H1 - Leveling screed - 140m <sup>2</sup>									[Critical Remaining]									
RAB-50-1140	050 H1 - Waterproof membrane - 140m <sup>2</sup>									[Critical Remaining]									
RAB-50-1160	050 H1 - Top Screed - 140m <sup>2</sup>									[Critical Remaining]									
RAB-50-1180	050 H1 - Install Roof Tiles - 140m <sup>2</sup>									[Critical Remaining]									
RAB-50-1200	050 H1 - Install Railing - 49m													[Critical Remaining]					
RAB-50-1210	050 H1 - Install Cat Ladder and Roof Access Hatch													[Critical Remaining]					
RAB-50-4320	050 H1 - Install Aluminium Cladding													[Critical Remaining]					
RAB-50-4470	050 H1 - Installation of Aluminium Canopy													[Critical Remaining]					
<b>External Finishes</b>																			
RAB-50-1090	050 H1 - Erect External Scaffolding									[Critical Remaining]									
RAB-50-1120	050 H1 - Install External Louvers /Windows/Doors									[Critical Remaining]									
RAB-50-1150	050 H1 - External Render									[Critical Remaining]									
RAB-50-1190	050 H1 - External Tiling									[Critical Remaining]									
RAB-50-1220	050 H1 - External Painting													[Critical Remaining]					
RAB-50-1250	050 H1 - Dismantle Scaffolding													[Critical Remaining]					
<b>Utilities and Drainage</b>																			
RAB-50-8015	050 H1 - Construct Permanent Drainage and Manholes (Approx 20m)	[Actual Work]				[Critical Remaining]													
RAB-50-8035	050 H1 - Install Flushing Water Mains					[Remaining Work]													
RAB-50-8045	050 H1 - Install Fresh Water Mains					[Remaining Work]													
RAB-50-8025	050 H1 - Utilities and Common Telecom Ducting					[Remaining Work]													
<b>Testing &amp; Commissioning</b>																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																			
<b>BBO</b>																			

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◻ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
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Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-454	050 H1 - Submit WWO 46 Pt. IV																		◆	
<b>Fire Services Department (VAC)</b>																				
<b>Engineer (AECOM)</b>																				
<b>Public Toilet (Portion H2)</b>																				
<b>Excavation</b>																				
<b>Raft</b>																				
RAB-50-2320	050 H2 - Ground Slab	■				■														
<b>Structure</b>																				
RAB-50-2060	050 H2 - Construct RC Walls (External and Internal)					■														
RAB-50-4330	050 H2 - Construct Roof Floor at +11.525mPD					■														
RAB-50-2070	050 H2 - Construct RC Support Columns for Aluminium Solar Shade					■														
RAB-50-2080	050 H2 - Cure and Strip False/Formwork									■										
<b>ABWF/E&amp;M</b>																				
<b>Internal Finishes</b>																				
<b>Degree 1</b>																				
RAB-50-2110	050 H2 - Construct Blockwork Walls (126m <sup>2</sup> )													■						
RAB-50-2170	050 H2 - MEP 1st Fix													■						
RAB-50-2330	050 H2 - Plastering & Undercoat													■						
RAB-50-2310	050 H2 - Screeding													■						
RAB-50-2390	050 H2 - Access for C3 Cabling Works													■						
RAB-KD10A10	050 H2 - Projected achievement of Stage 10A of the Works																		◆	◆
<b>Degree 2</b>																				
RAB-50-2360	050 H2 - Louver / Door Frame													■						
RAB-50-2270	050 H2 - MEP 2nd Fix													■				■		
<b>Degree 3</b>																				
RAB-50-2340	050 H2 - Ceiling Frame													■				■		
<b>Specialist installation</b>																				
RAB-50-2240	050 H2 - Installation of Sanitaryware and Fixtures													■				■		
<b>Roof Finishes</b>																				
RAB-50-2100	050 H2 - Install Skylights (8No)													■						
RAB-50-2130	050 H2 - Leveling screed - 140m <sup>2</sup>													■						
RAB-50-2140	050 H2 - Waterproof membrane - 140m <sup>2</sup>													■						
RAB-50-2160	050 H2 - Top Screed - 140m <sup>2</sup>													■						
RAB-50-2180	050 H2 - Install Roof Tiles - 140m <sup>2</sup>													■						
RAB-50-2200	050 H2 - Install Railing - 49m													■						
RAB-50-2210	050 H2 - Install Cat Ladder and Roof Access Hatch													■						
RAB-50-4360	050 H2 - Install Aluminium Cladding													■						
<b>External Finishes</b>																				
RAB-50-2090	050 H2 - Erect External Scaffolding													■						
RAB-50-2120	050 H2 - Install External Louvers /Windows/Doors													■						
RAB-50-2150	050 H2 - External Render													■						
RAB-50-2190	050 H2 - External Tiling													■						
RAB-50-2220	050 H2 - External Painting													■				■		
<b>Utilities and Drainage</b>																				
RAB-50-7895	050 H2 - Construct Permanent Drainage and Manholes (Approx 20n	■				■														
RAB-50-7915	050 H2 - Install Flushing Water Mains					■														
RAB-50-7925	050 H2 - Install Fresh Water Mains					■														
RAB-50-7905	050 H2 - Utilities and Common Telecom Ducting					■														

■ Remaining Level of Effort   
 ■ Actual Work   
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 ■ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

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<b>Testing &amp; Commissioning</b>																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																			
<b>BBEO</b>																			
<b>Water Supplies Department (WSD)</b>																			
<b>Commencement</b>																			
<b>Completion</b>																			
<b>Fire Services Department (VAC)</b>																			
<b>Engineer (AECOM)</b>																			
<b>Public Toilet (Portion A1)</b>																			
<b>Excavation</b>																			
RAB-50-3030	050 A1 - Underground Utilities and Drainage																		
<b>Raft</b>																			
RAB-50-3040	050 A1 - Construct Raft Foundation + Dwarf Wall																		
RAB-50-3050	050 A1 - Ground Slab																		
<b>Structure</b>																			
RAB-50-3060	050 A1 - Construct RC Walls (External and Internal)																		
RAB-50-3070	050 A1 - Construct Roof Floor at +11.525mPD (140m <sup>2</sup> ) (21m <sup>3</sup> )																		
RAB-50-4340	050 A1 - Construct RC Support Columns for Aluminium Solar Shade																		
RAB-50-3080	050 A1 - Cure and Strip False/Formwork																		
<b>ABWF/E&amp;M</b>																			
<b>Internal Finishes</b>																			
<b>Degree 1</b>																			
RAB-50-3110	050 A1 - Construct Blockwork Walls (126m <sup>2</sup> )																		
RAB-50-3170	050 A1 - MEP 1st Fix																		
RAB-50-3310	050 A1 - Plastering & Undercoat																		
RAB-50-3320	050 A1 - Screeding																		
<b>Degree 2</b>																			
RAB-50-3360	050 A1 - Louver / Door Frame																		
RAB-50-3270	050 A1 - MEP 2nd Fix																		
<b>Degree 3</b>																			
<b>Specialist installation</b>																			
<b>Roof Finishes</b>																			
RAB-50-3100	050 A1 - Install Skylights (8No)																		
RAB-50-3130	050 A1 - Leveling screed - 140m <sup>2</sup>																		
RAB-50-3140	050 A1 - Waterproof membrane - 140m <sup>2</sup>																		
RAB-50-3160	050 A1 - Top Screed - 140m <sup>2</sup>																		
RAB-50-3180	050 A1 - Install Roof Tiles - 140m <sup>2</sup>																		
RAB-50-3200	050 A1 - Install Railing - 49m																		
RAB-50-3210	050 A1 - Install Cat Ladder and Roof Access Hatch																		
RAB-50-4370	050 A1 - Install Aluminium Cladding																		
<b>External Finishes</b>																			
RAB-50-3090	050 A1 - Erect External Scaffolding																		
RAB-50-3120	050 A1 - Install External Louvers /Windows/Doors																		
RAB-50-3150	050 A1 - External Render (From Bldg 050 H2)																		
RAB-50-3190	050 A1 - External Tiling																		
RAB-50-3220	050 A1 - External Painting																		
<b>Utilities and Drainage</b>																			
RAB-50-7935	050 A1 - Construct Permanent Drainage and Manholes																		
<b>Testing &amp; Commissioning</b>																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																			
<b>BBEO</b>																			
<b>Water Supplies Department (WSD)</b>																			

█ Remaining Level of Effort   
 █ Actual Work   
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<b>Commencement</b>																			
<b>Completion</b>																			
<b>Fire Servives Department (VAC)</b>																			
<b>Engineer (Aecom)</b>																			
<b>Public Toilet (Portion A2)</b>																			
<b>Excavation</b>																			
<b>Raft</b>																			
RAB-50-4050	050 A2 - Ground Slab					■													
<b>Structure</b>																			
RAB-50-4060	050 A2 - Construct RC Walls (External and Internal)					■													
RAB-50-4070	050 A2 - Construct Roof Floor at +11.525mPD (140m²) (21m³)					■													
RAB-50-4350	050 A2 - Construct RC Support Columns for Aluminium Solar Shade									■									
RAB-50-4080	050 A2 - Cure and Strip False/Formwork									■									
<b>ABWF/E&amp;M</b>																			
<b>Internal Finishes</b>																			
<b>Degree 1</b>																			
RAB-50-4110	050 A2 - Construct Blockwork Walls (126m²)									■									
RAB-50-4170	050 A2 - MEP 1st Fix									■									
RAB-50-4420	050 A2 - Plastering & Undercoat									■									
RAB-50-4400	050 A2 - Screeding									■									
RAB-50-4410	050 A2 - Access for C3 Cabling Works									■									
RAB-KD12A10	KD12A - Projected achievement of Stage 12A of the Works													◆					
<b>Degree 2</b>																			
RAB-50-4440	050 A2 - Louver / Door Frame													■					
RAB-50-4270	050 A2 - MEP 2nd Fix													■					
<b>Degree 3</b>																			
<b>Specialist installation</b>																			
RAB-50-4240	050 A2 - Installation of Sanitaryware and Fixtures													■					
<b>Roof Finishes</b>																			
RAB-50-4100	050 A2 - Install Skylights (8No)									■									
RAB-50-4130	050 A2 - Leveling screed - 140m²									■									
RAB-50-4140	050 A2 - Waterproof membrane - 140m²									■									
RAB-50-4160	050 A2 - Top Screed - 140m²									■									
RAB-50-4180	050 A2 - Install Roof Tiles - 140m²									■									
RAB-50-4200	050 A2 - Install Railing - 49m									■									
RAB-50-4210	050 A2 - Install Cat Ladder and Roof Access Hatch									■									
RAB-50-4380	050 A2 - Install Aluminium Cladding									■									
<b>External Finishes</b>																			
RAB-50-4090	050 A2 - Erect External Scaffolding									■									
RAB-50-4120	050 A2 - Install External Louvers /Windows/Doors									■									
RAB-50-4150	050 A2 - External Render									■									
RAB-50-4190	050 A2 - External Tiling									■									
<b>Utilities and Drainage</b>																			
RAB-50-7975	050 A2 - Construct Permanent Drainage and Manholes (Approx 20m	■				■													
RAB-50-7995	050 A2 - Install Flushing Water Mains					■													
RAB-50-8005	050 A2 - Install Fresh Water Mains					■													
RAB-50-7985	050 A2 - Utilites and Common Telecom Ducting									■									
<b>Testing &amp; Commissioning</b>																			
<b>Statutory Submissions &amp; Approvals (Day 670 Completion)</b>																			
<b>BBEO</b>																			
<b>Water Supplies Department (WSD)</b>																			
<b>Commencement</b>																			

■ Remaining Level of Effort   
 ■ Actual Work   
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<b>Completion</b>																			
Fire Servives Department (VAC)																			
Engineer (AECOM)																			
<b>Building 053 - Outbound X-Ray Building</b>																			
Excavation																			
Raft																			
Structure																			
External Walls																			
To First Floor Level																			
Internal Structures																			
First Floor																			
Slabs																			
Cure and Strip																			
1/F - Roof Level																			
Staircases																			
Roof Floor																			
Slabs																			
Cure and Strip																			
ABWF/E&M																			
Ground Floor																			
Degree 1 - G/F																			
Degree 2 - G/F																			
RAB-53-7935	053 - MEP 2nd Fix, G/F	[Blue bar]				[Red bar]													
RAB-53-7895	053 - Frame for Wall Panel & Cladding, G/F	[Blue bar]				[Red bar]													
Degree 3 - G/F																			
RAB-53-0660	053 - Wall Tiling & Wall Painting Final Coat (2), G/F	[Blue bar]				[Red bar]													
RAB-53-0730	053 - MEP Final Fix, G/F	[Blue bar]				[Red bar]													
RAB-53-8135	053 - Ceiling Plaster Board Sub-Frame, G/F	[Blue bar]				[Red bar]													
RAB-53-0690	053 - Raised Floor System, G/F	[Blue bar]				[Red bar]				[Green bar]									
RAB-53-0710	053 - Door Panel & Ironmongery, G/F	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-0700	053 - Glazing, G/F	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-7915	053 - Ceiling Plaster Board, G/F	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-8145	053 - Floor Carpet & Floor Vinyl, G/F	[Blue bar]				[Red bar]				[Red bar]				[Red bar]					
First Floor																			
Degree 1 - 1/F																			
Degree 2 - 1/F																			
RAB-53-8035	053 - MEP 2nd Fix, 1/F	[Blue bar]				[Red bar]													
RAB-53-8045	053 - Projected Achievement of Stage 1B	[Blue bar]				[Red bar]													
RAB-53-8005	053 - Access to C3 equipment Installatrion***	[Blue bar]				[Red bar]													
RAB-53-8065	053 - Power On, 1/F	[Blue bar]				[Red bar]													
RAB-53-8015	053 - Frame for Wall Panel & Cladding, 1/F	[Blue bar]				[Red bar]				[Green bar]									
Degree 3 - 1/F																			
RAB-53-8155	053 - Wall Tiling & Wall Painting Final Coat (2), 1/F	[Blue bar]				[Red bar]													
RAB-53-8105	053 - MEP Final Fix, 1/F	[Blue bar]				[Red bar]													
RAB-53-8115	053 - End Users and MOM Handover Inspection.	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-7985	053 - Ceiling Plaster Board Sub-Frame, 1/F	[Blue bar]				[Red bar]				[Green bar]									
RAB-53-8075	053 - Glazing, 1/F	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-8085	053 - Door Panel & Ironmongery, 1/F	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-8125	053 - Snagging and Remedials, 1/F	[Blue bar]				[Red bar]				[Green bar]									
RAB-53-8185	053 - Early handover to Enbd Users***	[Blue bar]				[Red bar]				[Red bar]									
RAB-53-8195	053 - MEP Balance of Works	[Blue bar]				[Red bar]				[Red bar]				[Red bar]					
RAB-53-8095	053 - Projected Achievement of Stage 1C, 1/F	[Blue bar]				[Red bar]				[Red bar]				[Red bar]					

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-53-7995	053 - Ceiling Plaster Board, 1/F																			
RAB-53-8165	053 - Floor Carpet & Floor Vinyl, 1/F																			
<b>External Finishes</b>																				
<b>External Facade</b>																				
RAB-53-0500	053 - External Painting																			
RAB-53-0440	053 - Install External Louvers /Windows/Doors																			
RAB-53-0640	053 - Make good external surfaces																			
RAB-53-0570	053 - Dismantle Scaffolding																			
<b>At Grade</b>																				
RAB-53-7615	053 - Prepare Sub Grade																			
RAB-53-7885	053 - Laying Geo Textile																			
RAB-53-7625	053 - Lay Granular Sub-Base																			
RAB-53-7635	053 - Laying Course																			
RAB-53-7695	053 - Concrete Block Paving																			
<b>Roof Finishes</b>																				
RAB-53-0460	053 - Waterproof Membrane - (490m²)																			
RAB-53-670	053 - Insulation Board - (490m²)																			
RAB-53-0490	053 - Top Screed - (490m²)																			
RAB-53-0520	053 - Install Roof Tiles - (490m²)																			
RAB-53-0530	053 - Install Railing - 105m																			
RAB-53-0540	053 - Install Cat Ladder and Roof Hatch																			
<b>Spacialist Installations</b>																				
RAB-53-0600	053 - Install Lift (1 nos)																			
<b>Glazed Canopy</b>																				
RAB-53-0620	053 - Construct high level Canopy at +9.95mPD																			
<b>Utilities and Drainage</b>																				
RAB-53-7595	053 - Construct Permanent Drainage and Manholes (Approx 135m)																			
RAB-53-7655	053 - Install FS Water Main																			
RAB-53-7610	053 - Install Flushing Water Mains																			
RAB-53-7620	053 - Install Fresh Water Mains																			
RAB-53-7605	053 - Utilites and Common Telecom Ducting																			
<b>Testing &amp; Commissioning</b>																				
RAB-TC53-1040	053 - T&C (HVAC, FS, P&D, OTHERS)																			
RAB-TC53-1050	053 - T&C, Lift																			
<b>Statutory Submissions &amp; Approvals (Day 470 Completion)</b>																				
<b>BEO</b>																				
RAB-BEE-420	053 - Registered Energy Assessor Inspection & Certification																			
RAB-BEE-430	053 - Submit REA Certification to EDMS																			
RAB-BEE-440	053 - EDMS Issue of Cert of Compliance Registration (COCR)																			
<b>EMSD - Building 053 Lift Inspection</b>																				
RAB-FSD-150	053 - Submit EMSD Form 5 (Completion of Lift Installation)																			
RAB-FSD-160	053 - EMSD Lift Inspection																			
RAB-FSD-090	053 - EMSD Lift Certificate Issued (Fire Lift)																			
<b>Water Supplies Department (WSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-WSD-100	053 - Submit WWO 46 Pt. IV																			
RAB-WSD-102	053 - WSD's Processing/Inspection/Meter Connection																			
<b>VAC</b>																				
RAB-FSD-1140	053 - Submit Form 314																			
RAB-FSD-1150	053 - Submit Form 501																			

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
<b>FSD</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-410	053 - Submit WWO 46 Pt. I V																			
RAB-FSD-670	053 - Submit Form 501																			
RAB-FSD-420	053 - FSD Inspection Period																			
RAB-FSD-430	053 - Issue Form 172, FS Compliance Cert.																			
<b>Engineer (AECOM)</b>																				
RAB-53-7460	053 - Submit Building 053 As Built Drawings to Engineer																			
<b>Building 058 - Outbound X-Ray Scan Tunnel</b>																				
<b>Excavation</b>																				
<b>Raft</b>																				
<b>Structure</b>																				
<b>Walls</b>																				
<b>South</b>																				
<b>North</b>																				
<b>Roof Slabs</b>																				
<b>Cure and Strip</b>																				
<b>ABWF/E&amp;M</b>																				
<b>Internal Finishes</b>																				
<b>Degree 1</b>																				
<b>Degree 2</b>																				
RAB-58-0630	058 - MEP 2nd Fix																			
RAB-58-0680	058 - Install Louver & Door Frame (Door Frame by other)																			
RAB-KD1B10	KD1B - Projected achievement of Stage 1B of the Works Building 05																			
RAB-58-0640	058 - Power On																			
<b>Degree 3</b>																				
RAB-58-0650	058 - MEP Final Fix																			
RAB-58-0700	058 - Floor Finish (Epoxy Paint)																			
RAB-58-0660	058 - Snagging and Remedials, Bldg. Internal																			
RAB-58-0710	058 - Door Panel (By other)																			
RAB-KD1C10	KD1C - Projected achievement of Stage 1C of the Works Building 05																			
RAB-58-7520	058 - End Users and MoM handover inspection																			
<b>Roof Finishes</b>																				
RAB-58-0450	058 - Waterproof membrane - 885m <sup>2</sup>																			
RAB-58-660	058 - insulation Board - 885m <sup>2</sup>																			
RAB-58-0480	058 - Top Screed - 885m <sup>2</sup>																			
RAB-58-0510	058 - Install Roof Tiles - 885m <sup>2</sup>																			
RAB-58-0540	058 - Install Railing - 152m																			
RAB-58-0530	058 - Install Cat Ladder and Roof Hatch																			
<b>External Finishes</b>																				
<b>Facade</b>																				
RAB-58-0440	058 - External Tiling (630m <sup>2</sup> )																			
RAB-58-0400	058 - Install External Louvers /Windows/Doors																			
RAB-58-0470	058 - External Painting																			
RAB-58-0560	058 - Dismantle Scaffolding																			
RAB-58-0620	058 - Make good external surfaces																			
<b>At Grade</b>																				
RAB-58-6760	058 - Prepare Sub Grade																			
RAB-58-6750	058 - Laying Geo Textile																			
<b>Glazed Canopy</b>																				
RAB-58-0600	058 - Construct high level canopy at +13.231mPD																			

■ Remaining Level of Effort   
 ■ Actual Work   
 ■ Critical Remaining ...  
■ Actual Level of Effort   
 ■ Remaining Work   
 ◻ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
<b>Utilities and Drainage</b>																				
RAB-58-7550	058 - Construct Permanent Drainage and Manholes (Approx 100m)	[Actual Work]				[Critical Remaining]														
RAB-58-7560	058 - Utilites and Common Telecom Ducting					[Remaining Work]														
RAB-58-7590	058 - Install FS Water main									[Critical Remaining]										
RAB-58-7570	058 - Install Flushing Water Mains									[Critical Remaining]										
RAB-58-7580	058 - Install Fresh Water Mains									[Critical Remaining]										
<b>Testing &amp; Commissioning</b>																				
RAB-TC58-1060	058 - T&C (HVAC, FS, P&D, OTHERS)									[Critical Remaining]				[Critical Remaining]						
<b>Statutory Submissions &amp; Approvals (Day 470 Completion)</b>																				
<b>BEO</b>																				
RAB-BEE-450	058 - Registered Energy Assessor Inspection & Certification													[Critical Remaining]						
RAB-BEE-460	058 - Submit REA Certification to EDMS													◆						
RAB-BEE-470	058 - EDMS Issue of Cert of Compliance Registration (COCR)													[Critical Remaining]						
<b>VAC (FSD)</b>																				
<b>Commencement</b>																				
RAB-FSD-0280	058 - Submit Form 314					◆														
<b>Completion</b>																				
RAB-FSD-370	058 - Submit Form 046 Part IV					◆														
RAB-FSD-500	058 - Submit Form 046 Part V													◆						
<b>Engineer (AECOM)</b>																				
<b>Building 059 - Inbound X-Ray Scan Tunnel</b>																				
<b>Excavation</b>																				
<b>Raft Foundations</b>																				
<b>Structure</b>																				
<b>Walls</b>																				
<b>West</b>																				
<b>East</b>																				
<b>Roof Slabs</b>																				
<b>Cure and Strip</b>																				
<b>ABWF/E&amp;M</b>																				
<b>Internal Finishes</b>																				
<b>Degree 1</b>																				
<b>Degree 2</b>																				
RAB-59-0630	059 - MEP 2nd Fix	[Actual Work]				[Critical Remaining]														
RAB-59-0680	059 - Install Louver & Door Frame (Door Frame by other)																			
RAB-KD2B10	KD2B - Projected achievement of Stage 2B of the Works					◆														
RAB-59-0640	059 - Power On					◆														
<b>Degree 3</b>																				
RAB-59-0660	059 - MEP Final Fix	[Actual Work]				[Critical Remaining]														
RAB-59-0700	059 - Floor Finish (Epoxy Paint)					[Critical Remaining]														
RAB-59-7560	059 - Snagging and Remedials					[Critical Remaining]														
RAB-KD2C10	KD2C - Projected achievement of Stage 2C of the Works					◆														
RAB-59-7550	059 - End Users and MoM handover inspection					◆														
<b>Roof Finishes</b>																				
RAB-59-0490	059 - Waterproof Membrane - 885m <sup>2</sup>					[Critical Remaining]														
RAB-59-670	059 - Insulation Board - 885m <sup>2</sup>					[Critical Remaining]														
RAB-59-0510	059 - Top Screed - 885m <sup>2</sup>					[Critical Remaining]														
RAB-59-0540	059 - Install Roof Tiles - 885m <sup>2</sup>					[Critical Remaining]				[Critical Remaining]										
RAB-59-0560	059 - Install Railing - 152m									[Critical Remaining]										
RAB-59-0550	059 - Install Cat Ladder and Roof Hatch									[Critical Remaining]										
<b>External Finishes</b>																				
<b>Facade</b>																				

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	



Activity ID	Activity Name	June 2017				July 2017				August 2017				September 2017				October 2017		
		04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08
RAB-59-0430	059 - External Render (630m <sup>2</sup> )	[Actual Work]				[Critical Remaining]														
RAB-59-0480	059 - External Painting					[Critical Remaining]														
RAB-59-0450	059 - External Tiling (630m <sup>2</sup> )					[Critical Remaining]														
RAB-59-0590	059 - Dismantle Scaffolding									[Critical Remaining]										
RAB-59-0650	059 - Make good external surfaces									[Critical Remaining]										
<b>At Grade</b>																				
RAB-59-6700	059 - Prepare Sub Grade									[Critical Remaining]										
RAB-59-6690	059 - Laying Geo Textile									[Critical Remaining]										
RAB-59-6710	059 - Lay Granular Sub-Base									[Critical Remaining]										
RAB-59-6720	059 - Laying Course									[Critical Remaining]										
RAB-59-6680	059 - Concrete Block Paving									[Critical Remaining]										
RAB-59-6730	059 - Grouting Works to Concrete Pavers									[Critical Remaining]										
RAB-59-0670	059 - Snagging and Remedials									[Critical Remaining]										
<b>Glazed Canopy</b>																				
RAB-59-0610	059 - Construct high level glazed canopy at +13.406mPD North									[Critical Remaining]										
RAB-59-0620	059 - Construct high level glazed canopy at +13.231mPD South									[Critical Remaining]										
<b>Utilities and Drainage</b>																				
RAB-59-7330	059 - Construct Permanent Drainage and Manholes (Approx 100m)	[Actual Work]				[Critical Remaining]														
RAB-59-7370	059 - Install FS Water Main					[Critical Remaining]														
RAB-59-7350	059 - Install Flushing Water Mains					[Critical Remaining]														
RAB-59-7360	059 - Install Fresh Water Mains					[Critical Remaining]														
RAB-59-7340	059 - Utilities and Common Telecom Ducting					[Critical Remaining]														
<b>Testing &amp; Commissioning</b>																				
RAB-TC59-1000	059 - T&C (HVAC, FS, P&D, OTHERS)					[Critical Remaining]														
<b>Statutory Submissions &amp; Approvals (Day 470 Completion)</b>																				
<b>BBEO</b>																				
RAB-BEE-480	059 - IRegistered Energy Assessor Inspection & Certification									[Critical Remaining]										
RAB-BEE-490	059 - ISubmit REA Certification to EDMS									[Critical Remaining]										
RAB-BEE-500	059 - IEDMS Issue of Cert of Compliance Registration (COCR)									[Critical Remaining]										
<b>VAC</b>																				
RAB-FSD-550	059 - Submit Form 314					[Finish Constraint]														
RAB-FSD-560	059 - Submit Form 501									[Finish Constraint]										
<b>Fire Services Department (FSD)</b>																				
<b>Commencement</b>																				
<b>Completion</b>																				
RAB-FSD-530	059 - Submit Form WWO 46 Part IV									[Finish Constraint]										
RAB-FSD-540	059 - Submit Form WWO 46 Part V									[Finish Constraint]										
RAB-FSD-740	059 - Submit Form 501 to FSD for FS Inspection (C8 Ready for FS I									[Finish Constraint]										
<b>Engineer (AECOM)</b>																				
RAB-59-7520	059 - Submit Building 059 As Built Drawings to Engineer									[Finish Constraint]										

█ Remaining Level of Effort   
 █ Actual Work   
 █ Critical Remaining ...  
█ Actual Level of Effort   
 █ Remaining Work   
 ◊ Finish Constraint

**3-Month Rolling Programme Update, 01 July 2017**

RAB5			
Date	Revision	Checked	Approved
01-Jul-17	3-Month Rolling Programme, 01 Jul-17 Update	SGJ	















Activity ID	Activity Name	2015												2016				2017				2018				2019		
		Q2			Q3			Q4			Q1		Q2		Q3		Q4		Q1		Q2		Q3					
<b>Location 8(Inbd Private Car Annex (025)) (Phase 2)</b>		30-Aug-17; Location 8(Inbd Private Car Annex (025))																										
EM3370	L8(025) - Cable Containment in Kiosks	L8(025) - Cable Containment in Kiosks																										
EM3380	L8(025) - Cable Laying and termination	L8(025) - Cable Laying and termination																										
EM3400	L8(025) - Cable Splicing and Testing and Labeling	L8(025) - Cable Splicing and Testing and Labeling																										
<b>Location 9(Outbd Private Car Annex (032)) (Phase 2)</b>		30-Aug-17; Location 9(Outbd Private Car Annex (032))																										
EM3500	L9(032) - Cable Containment in Kiosks	L9(032) - Cable Containment in Kiosks																										
EM3520	L9(032) - Cable Laying and termination	L9(032) - Cable Laying and termination																										
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)</b>																												
<b>Site Acceptance Test (Phase 2 / Section II)</b>																												
<b>Operability Period Test (Phase 2 / Section II)</b>																												
<b>Completion (Phase 2 / Section II)</b>																												
<b>Engineering Support for Phase 2 / Section II</b>																												
<b>Procurement for Phase2 / Section III</b>																												
<b>Delivery and Bench Acceptance Test for Phase2 / Section III</b>																												
<b>Installation - Phase 2 / Section III</b>		09-Oct-17; Installation - Phase 2/ Section III																										
<b>Location 10,11,12,13 (Vehicle Clearance Kiosks)</b>		09-Oct-17; Location 10,11,12,13 (Vehicle Clearance Kiosks)																										
<b>Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)</b>		09-Oct-17; Location 12 Inbd Private Car Kiosks																										
EM4440	L12(027)(12nos P2) - Cable Laying and termination	L12(027)(12nos P2) - Cable Laying and termination																										
EM4460	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling																										
EM4480	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)																										
<b>Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)</b>		01-Sep-17; Location 13 Outbd Private Car Kiosks																										
EM4560	L13(030)(12nos P2) - Cable Containment in Kiosks	L13(030)(12nos P2) - Cable Containment in Kiosks																										
<b>Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)</b>		31-Aug-17; Location 12 Outbd Goods Vehicle Kiosks																										
EM4880	L12(029)(3nos P2) - Cable Laying and termination	L12(029)(3nos P2) - Cable Laying and termination																										
EM4900	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling																										
EM4920	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																										
EM4940	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)																										
EM4960	L12(029)(3nos P2) - AIOP Installation (3 nos)	L12(029)(3nos P2) - AIOP Installation (3 nos)																										
EM4980	L12(029)(3nos P2) - Loop Installation (15 nos)	L12(029)(3nos P2) - Loop Installation (15 nos)																										
<b>Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)</b>																												
<b>Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)</b>		24-Aug-17; Location 12 Inbd Goods Vehicle Kiosks																										
EM4720	L12(028)(3nos P2) - Cable Laying and termination	L12(028)(3nos P2) - Cable Laying and termination																										
EM4740	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling																										
EM4760	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																										
EM4780	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)																										
EM4800	L12(028)(3nos P2) - AIOP Installation (3 nos)	L12(028)(3nos P2) - AIOP Installation (3 nos)																										
EM4820	L12(028)(3nos P2) - Loop Installation (15 nos)	L12(028)(3nos P2) - Loop Installation (15 nos)																										
EM4840	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)																										
EM5120	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete																										
<b>Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)</b>		30-Aug-17; Location 10 Shuttle Bus Kiosks (006)																										
EM4000	L10(006)(4nos P2) - Cable Containment in Kiosks	L10(006)(4nos P2) - Cable Containment in Kiosks																										
<b>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1</b>																												
<b>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2</b>																												
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)</b>																												

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev.: 0	WC	LC
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name																		
		2015			2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
	<ul style="list-style-type: none"> <li> Site Acceptance Test (Phase 2 / Section III)</li> <li> Operability Period Test (Phase 2 / Section III)</li> <li> Completion (Phase 2 / Section III)</li> <li> Operation (Phase 2 / Section III)</li> <li> Defect Liability Period (DLP)</li> <li> Document Submission (Phase 2 / Section III)</li> </ul>																		

Gantry Type X-Ray Vehicle Inspection System

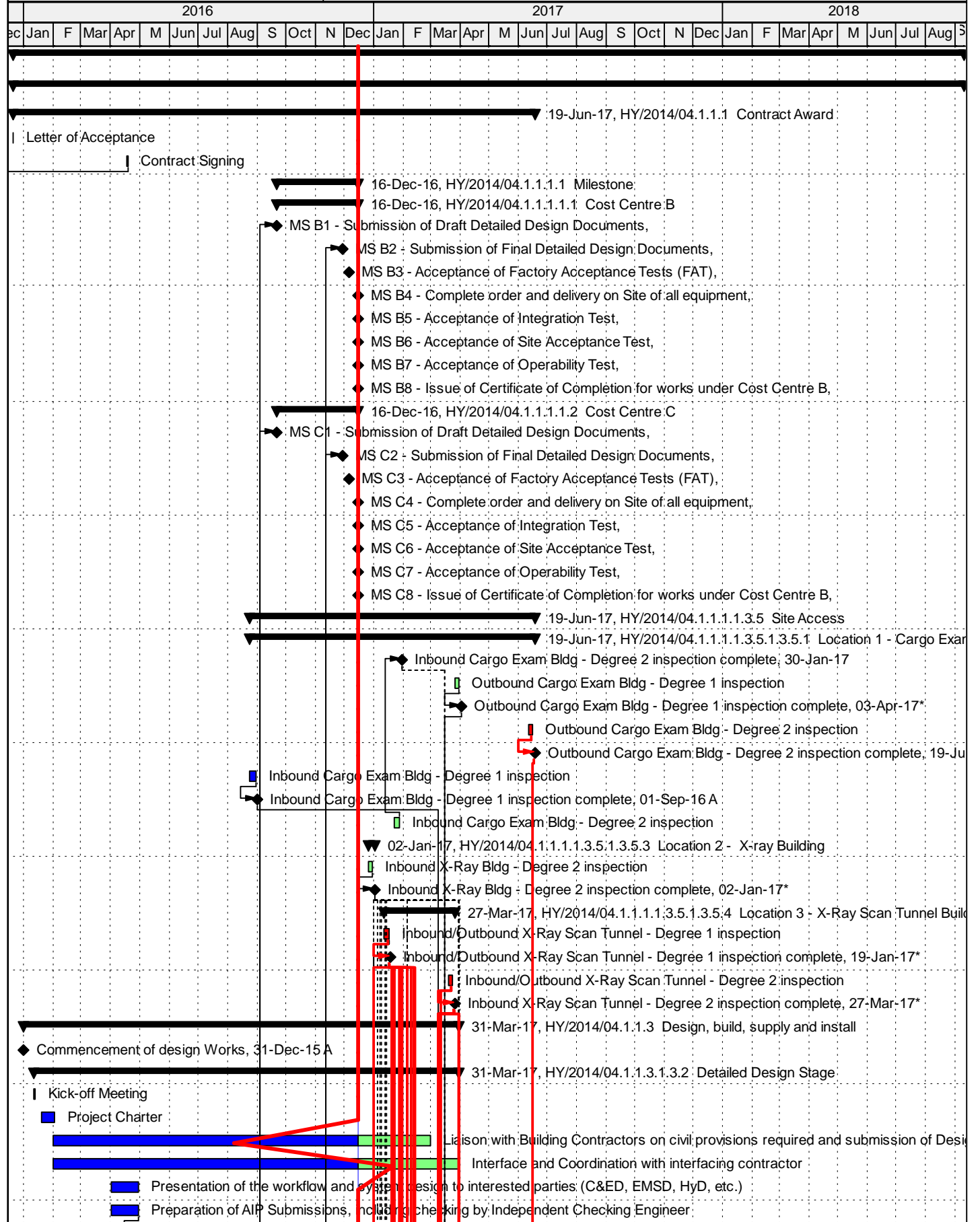
Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

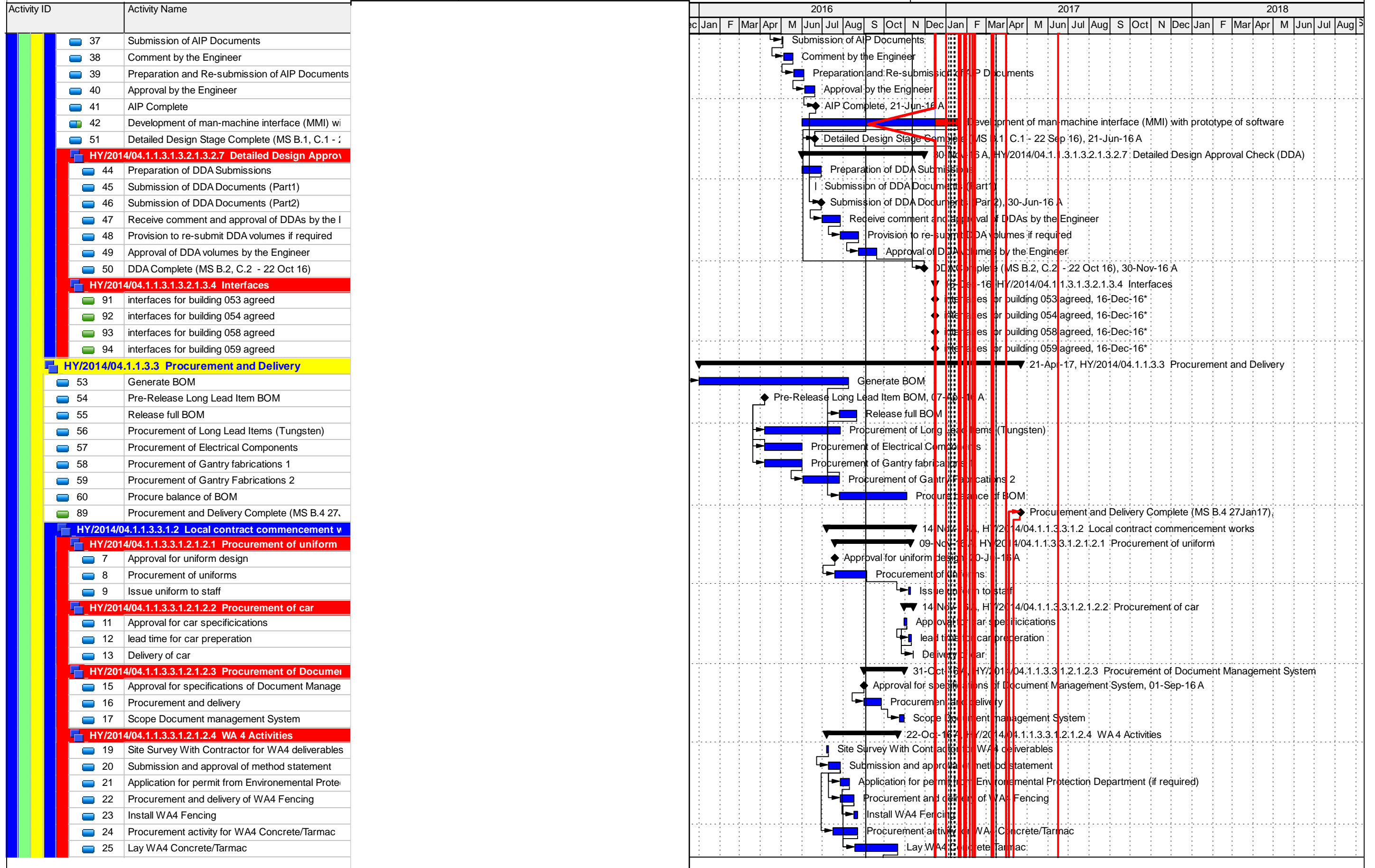
- Actual Level of Effort summary
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev.: 0	WC	LC
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name
<b>HY/2014/04 Hong Kong-Zhuhai-Macao Bridge</b>	
<b>HY/2014/04.1 Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge</b>	
<b>HY/2014/04.1.1.1 Contract Award</b>	
3	Letter of Acceptance
4	Contract Signing
<b>HY/2014/04.1.1.1.1 Milestone</b>	
<b>HY/2014/04.1.1.1.1.1 Cost Centre B</b>	
A1C	MS B1 - Submission of Draft Detailed Design Documents
A1C	MS B2 - Submission of Final Detailed Design Documents
A1C	MS B3 - Acceptance of Factory Acceptance Tests (FAT)
A1C	MS B4 - Complete order and delivery on Site of all equipment
A1C	MS B5 - Acceptance of Integration Test
A1C	MS B6 - Acceptance of Site Acceptance Test
A1C	MS B7 - Acceptance of Operability Test
A1C	MS B8 - Issue of Certificate of Completion for works under Cost Centre B
<b>HY/2014/04.1.1.1.1.2 Cost Centre C</b>	
A1C	MS C1 - Submission of Draft Detailed Design Documents
A11	MS C2 - Submission of Final Detailed Design Documents
A11	MS C3 - Acceptance of Factory Acceptance Tests (FAT)
A11	MS C4 - Complete order and delivery on Site of all equipment
A11	MS C5 - Acceptance of Integration Test
A11	MS C6 - Acceptance of Site Acceptance Test
A11	MS C7 - Acceptance of Operability Test
A11	MS C8 - Issue of Certificate of Completion for works under Cost Centre C
<b>HY/2014/04.1.1.1.3.5 Site Access</b>	
<b>HY/2014/04.1.1.1.3.5.1.3.5.1 Location 1 - Cargo Exam Bldg - Degree 1 inspection</b>	
100	Inbound Cargo Exam Bldg - Degree 2 inspection
102	Outbound Cargo Exam Bldg - Degree 1 inspection
103	Outbound Cargo Exam Bldg - Degree 1 inspection
104	Outbound Cargo Exam Bldg - Degree 2 inspection
105	Outbound Cargo Exam Bldg - Degree 2 inspection
97	Inbound Cargo Exam Bldg - Degree 1 inspection
98	Inbound Cargo Exam Bldg - Degree 1 inspection
99	Inbound Cargo Exam Bldg - Degree 2 inspection
<b>HY/2014/04.1.1.1.3.5.1.3.5.3 Location 2 - X-ray Building</b>	
107	Inbound X-Ray Bldg - Degree 2 inspection
108	Inbound X-Ray Bldg - Degree 2 inspection complete
<b>HY/2014/04.1.1.1.3.5.1.3.5.4 Location 3 - X-Ray Scan Tunnel Building</b>	
110	Inbound/Outbound X-Ray Scan Tunnel - Degree 1 inspection
111	Inbound/Outbound X-Ray Scan Tunnel - Degree 1 inspection
112	Inbound/Outbound X-Ray Scan Tunnel - Degree 2 inspection
113	Inbound X-Ray Scan Tunnel - Degree 2 inspection
<b>HY/2014/04.1.1.3 Design, build, supply and install</b>	
28	Commencement of design Works
<b>HY/2014/04.1.1.3.1.3.2 Detailed Design Stage</b>	
30	Kick-off Meeting
31	Project Charter
32	Liaison with Building Contractors on civil provisions required and submission of Design
33	Interface and Coordination with interfacing contractor
35	Presentation of the workflow and system design to interested parties (C&ED, EMSD, HyD, etc.)
36	Preparation of AIP Submissions, including check by Independent Checking Engineer





■ Actual Level of Effort    ■ Remaining Work    ◆ Milestone  
■ Actual Work    ■ Critical Remaining Work    ▼ summary











Activity ID	Activity Name	2016												2017												2018											
		Dec	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	Dec	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	Dec	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N
	X-ray System Image Analysis Workstation																																				
	Radiation shielding sliding door controller																																				
	CCTV System																																				
	Public Address System																																				
	UPS for workstations, equipment and system																																				
	<b>HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.4 Image Interpretation Workstation</b>																																				
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				
	X-ray System Image Analysis Workstation																																				
	Printer																																				
	UPS for workstations, equipment and system																																				
	<b>HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.5 X-ray Examination System</b>																																				
	Server																																				
	Server rack																																				
	UPS for workstations, equipment and system																																				
	<b>HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.6 Driver's Waiting Room</b>																																				
	CCTV System																																				
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				
	Speaker																																				
	UPS for workstations, equipment and system																																				
	<b>HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.7 Training room</b>																																				
	Projector screen (Screen size 106")																																				
	Ceiling mounted projector																																				
	X-ray System Training Workstation																																				
	Radiation Monitoring and Alarm System																																				
	UPS for workstations, equipment and system																																				
	Training aids																																				
	Printer																																				
	<b>HY/2014/04.1.1.3.8 Section III - Cargo Examination Building</b>																																				
322	Construction Works - Section III Complete																																				
	<b>HY/2014/04.1.1.3.8.1.3.8.2 Outbound Cargo Examination Building</b>																																				
320	Cabling and cable containment																																				
321	Installation of X-ray System Image Analysis Workstations, UPS for workstations, equipment and system																																				
	<b>HY/2014/04.1.1.3.9 On-Site Testing &amp; Commissioning</b>																																				
335	Operability Test																																				
336	T&C Complete and Issurance of Certificate of Acceptance, Commissioning Complete																																				
345	Construction Works Complete																																				
	<b>HY/2014/04.1.1.3.9.1.3.10 Defect Liability Period for Construction Works</b>																																				
359	Defect Liability Period																																				
360	Submission of Warranty Completion Test Plan																																				
361	Warranty Completion Test																																				
362	DLP Complete and issuance of Defect Liability Certificate																																				
363	Commencement of Maintenance Services																																				
	<b>HY/2014/04.1.1.3.9.1.3.9.1 Integration Test</b>																																				
325	Submission of Integration Test Plan																																				
326	Integration Test																																				
327	Preparation, submission and acceptance of Integration Test report																																				
327.5	Complete Inegration Test (MS B.5 - 3 Mar 17)																																				
	<b>HY/2014/04.1.1.3.9.1.3.9.2 Site Acceptance Test</b>																																				
329	Submission of SAT Plan																																				

█ Actual Level of Effort   
 █ Remaining Work   
 █ Critical Remaining Work   
 ◆◆ Milestone   
 ▼ summary





# APPENDIX D

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## Event and Action Plan

## Event/Action Plan for Air Quality

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



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

## Event / Action Plan for Construction Noise Monitoring

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



# APPENDIX E

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## 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
<b>Air Quality</b>								
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	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 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$ , respectively)	√
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>• Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>• The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>• Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	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 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$ , 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	<ul style="list-style-type: none"> <li>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</li> <li>• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</li> </ul>	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 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$ , 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	<ul style="list-style-type: none"> <li>Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</li> <li>Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li> </ul>	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 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$ , 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	<ul style="list-style-type: none"> <li>Air Pollution Control (Construction Dust) Regulation</li> <li>To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 <math>\mu\text{g}\text{m}^{-3}</math> and 260 <math>\mu\text{g}\text{m}^{-3}</math>, respectively)</li> </ul>	√ (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	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:</p> <ul style="list-style-type: none"> <li>• Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>• All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>• Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>• The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>• All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>• All conveyor transfer points should be totally enclosed;</li> <li>• All access and route roads within the premises should be paved and wetted; and</li> <li>• Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.</li> </ul>	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	<ul style="list-style-type: none"> <li>• Air Pollution Control (Construction Dust) Regulation</li> <li>• To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are <math>500 \mu\text{g}\text{m}^{-3}</math> and <math>260 \mu\text{g}\text{m}^{-3}</math>, respectively)</li> </ul>	N/A
S5.5.2.7	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <ul style="list-style-type: none"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points.</li> </ul>	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
<b>Construction Noise (Air borne)</b>								
S6.4.10	N1	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	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	<ul style="list-style-type: none"> <li>Noise Control Ordinance</li> <li>Annex 5, TM-EIA</li> </ul>	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m <sup>2</sup> ), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	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	<ul style="list-style-type: none"> <li>Noise Control Ordinance</li> <li>Annex 5, TM-EIA</li> <li>75dB(A) for residential premises</li> <li>The movable barrier should achieve at least 5dB(A) and the full enclosure should be</li> </ul>	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	<ul style="list-style-type: none"> <li>Noise Control Ordinance &amp; its TM</li> <li>Annex 5, TM-EIA</li> </ul>	√
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	<ul style="list-style-type: none"> <li>Noise Control Ordinance</li> <li>Annex 5, TM-EIA</li> </ul>	√
/	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	<ul style="list-style-type: none"> <li>Noise Control Ordinance</li> <li>Annex 5, TM-EIA</li> <li>75dB(A) for residential premises</li> </ul>	√ (The noise monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02.)
<b>Sediment</b>								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> <li>ETW B TC 34/2002</li> </ul>	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
<b>Waste Management (Construction Waste)</b>								
S8.3.8	WM1	<p><u>Construction and Demolition Material</u></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>• Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>• Carry out on-site sorting;</li> <li>• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>• Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> <li>• Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>• Implement an enhanced Waste Management Plan similar to ETW BTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&amp;D materials and to minimize their generation during the course of construction.</li> <li>• In addition, disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation.</li> </ul>	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	<ul style="list-style-type: none"> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Waste Disposal Ordinance</li> <li>• ETW BTC 19/2005</li> </ul>	√

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	<p><u>C&amp;D Waste</u></p> <ul style="list-style-type: none"> <li>Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>	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	<ul style="list-style-type: none"> <li>Land (Miscellaneous Provisions) Ordinance</li> <li>Waste Disposal Ordinance</li> <li>ETWB TC 19/2005</li> </ul>	√
S8.2.12- S8.3.15	WM3	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</li> </ul>	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal (Chemical Waste) General) Regulation</li> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>	√

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
		<ul style="list-style-type: none"> <li>Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>						√
S8.3.16	WM4	<u>Sewage</u> <ul style="list-style-type: none"> <li>Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.</li> </ul>	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul>	√
S8.3.17	WM5	<u>General Refuse</u> <ul style="list-style-type: none"> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</li> <li>Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided.</li> <li>Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance</li> </ul>	√

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
<b>Water Quality (Construction Phase)</b>								
S.9.11.1.7	W2	<p><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:</p> <ul style="list-style-type: none"> <li>• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>• sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li>• storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;</li> <li>• silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>• temporary access roads should be surfaced with crushed stone or gravel;</li> <li>• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>• open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>• manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers;</li> <li>• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> </ul>	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	<ul style="list-style-type: none"> <li>• all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>• the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>• wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>• vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>• the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>• waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>• all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and</li> <li>• surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>	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
<b>Ecology (Construction Phase)</b>								
S10.7	E4	<ul style="list-style-type: none"> <li>Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater</li> </ul>	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	√
S10.7	E5	<ul style="list-style-type: none"> <li>Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time</li> </ul>	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction		√
S10.7	E8	<ul style="list-style-type: none"> <li>Control vessel speed</li> <li>Skipper training</li> <li>Predefined and regular routes for working vessels; avoid Brother Islands.</li> </ul>	Minimise marine traffic disturbance on dolphins	Contractor	Marine Traffic	During construction		N/A
<b>Fisheries</b>								
S11.7	F4	<ul style="list-style-type: none"> <li>Maritime Oil Spill Response Plan (MOSRP);</li> <li>Contingency plan.</li> </ul>	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
<b>Landscape &amp; Visual (Detailed Design Phase)</b>								
S14.3.3.1	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> <li>• Roadside planting and planting along the edge of the HKBCF Island is proposed;</li> <li>• Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;</li> <li>• Protection measures for the trees to be retained during construction activities;</li> <li>• Optimizing the sizes and spacing of the bridge columns; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations;</li> <li>• Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed;</li> <li>• Providing planting area around peripheral of HKBCF for tree planting screening effect;</li> <li>• Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;</li> <li>• For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and</li> <li>• Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF.</li> </ul>	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
<i>Landscape &amp; Visual (Construction Phase)</i>								
S14.3.3.3	LV2	<p>Mitigate both Landscape and Visual Impacts</p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p> <p>G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic.</p> <p>G3. Not applicable as this is for HKLR.</p> <p>G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect;</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall.</p> <p>G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.</p>	Minimise visual & landscape impact	Contractor	HKBCF	Construction stage		N/A
S14.3.3.3	LV3	<p><u>Mitigate Visual Impacts</u></p> <p>V1.Minimize time for construction activities during construction period.</p> <p>V2.Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKBCF construction.</p>						√ 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
<b>EM&amp;A</b>								
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		<ul style="list-style-type: none"> <li>EIAO Guidance Note No.4/2002</li> <li>TM-EIAO</li> </ul>	√
S15.5 - S15.6	EM2	<ol style="list-style-type: none"> <li>1) An Environmental Team needs to be employed as per the EM&amp;A Manual.</li> <li>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</li> <li>3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&amp;A Manual are fully complied with.</li> </ol>	Perform environmental monitoring & auditing	Contractor	All construction sites		<ul style="list-style-type: none"> <li>EIAO Guidance Note No.4/2002</li> <li>TM-EIAO</li> </ul>	√

Legends: √ = Implemented; X = Not implemented; N/A = Not applicable



# APPENDIX F

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## Site Audit Findings and Corrective Actions

## Appendix F – Site Audit Findings and Corrective Actions

1.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting period, thirteen site inspections were carried out on 7, 14, 21, and 28 June 2017, 3, 13, 17, and 24 July and 1, 7, 14, 25, 28 August 2017.

1.1.2 Particular observations during the site inspections are described in the table below.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
<b>For Contract No. HY/2014/05</b>			
31 May 2017	1. General refuses were observed on the ground at Building 023 work area.	1. The general refuse was being cleared at Building 023 work area. The Contractor was reminded to clear rubbish regularly at the temporary dumping area of Building 023 works area.	7 June 2017
7 June 2017	1. Oil product was stored in a plastic bottle and found without proper drip tray at Building 058.	1. The oil container was removed at Building 058.	14 June 2017
14 June 2017	1. Chemical containers were found without drip tray at Building 025 and Building 023. 2. General refuse and construction waste was found in the works area near Building 053.	1a. The chemical containers were removed at Building 025 and Building 023. 2. The general refuse and construction waste was removed in the works area near Building 053.	21 June 2017
21 June 2017	1. A chemical container was found without drip tray at Building 058.	1. The chemical container was removed at Building 058.	28 June 2017

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
<b>For Contract No. HY/2014/05</b>			
28 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 July 2017	1. No proper chemical labels and tray drips were provided for the chemical containers at Building 058.	1. The chemical containers at Building 058 were removed.	13 July 2017
13 July 2017	1. A stock of more than 20 bags of cement was not covered properly. 2. General refuses were observed on the ground between Buildings 022 and 058. 3. Stagnant water was accumulated at Building 023.	1. A stock of more than 20 bags of cement at Building 022 was removed. 2. General refuses on the ground between Buildings 022 and 058 were cleared. 3. Stagnant water accumulated at Building 023 was cleared.	17 July 2017
17 July 2017	1. A stock of more than 20 bags of cement was not covered properly at Building 044. 2. General refuses and empty cement bags were observed in the stagnant pool at Building 032. 3. No drip tray was provided for the chemical containers at Building 044.	1. A stock of more than 20 bags of cement at Building 044 was covered entirely. 2. General refuses and empty cement bags in the stagnant pool at Building 032 were cleared. 3. The chemical containers at Building 044 were removed.	24 July 2017
24 July 2017	1. A stock of more than 20 bags of cement outside Building 023 was not covered properly. 2. A stock of more than 20 bags of cement at Building 023 was not covered by impervious sheeting or place in an area sheltered on the top and 3 sides.	1. The Contractor was reminded to provide cover to cement bags outside Building 023. 2. The Contractor was reminded to provide cover to cement bags at Building 023.	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in August 2017.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
<b>For Contract No. HY/2014/05</b>			
1 August 2017	<ol style="list-style-type: none"> <li>1. A chemical container was found without drip tray at Building 025.</li> <li>2. A oil stain was found on the floor near Building 023.</li> <li>3. Some cement bags were found without properly cover at the G/F of Building 022.</li> </ol>	<ol style="list-style-type: none"> <li>1. The chemical container was removed at Building 025.</li> <li>2. The contaminated soil was treated as chemical waste, stored in the chemical waste store.</li> <li>3. Cement bags were removed at the G/F of Building 022.</li> </ol>	7 August 2017
7 August 2017	<ol style="list-style-type: none"> <li>1. Empty chemical containers were found in the general refuse skip near Building 022.</li> <li>2. Some cement bags were found without properly cover at Building 022.</li> </ol>	<ol style="list-style-type: none"> <li>1. An Empty chemical containers were removed from in the general refuse skip near Building 022.</li> <li>2. Some cement bags were properly covered at Building 022.</li> </ol>	14 August 2017
14 August 2017	<ol style="list-style-type: none"> <li>1. The opened cement bags were not covered at Building 045.</li> <li>2. General refuses were accumulated at the resting area of Building 023.</li> <li>3. Stagnant water was accumulated at Building 025.</li> </ol>	<ol style="list-style-type: none"> <li>1. Opened cement bags at Building 045 were removed.</li> <li>2. General waste accumulated at the resting area of Building 023 was disposed of and two enclosed bins were provided.</li> <li>3. Stagnant water accumulated at Building 025 was cleared</li> </ol>	25 August 2017
25 August 2017	<ol style="list-style-type: none"> <li>1. A stock of more than 20 bags of cement were not covered properly outside Building 044.</li> <li>2. No drip tray and chemical label were provided for a chemical container outside Building 023.</li> </ol>	<ol style="list-style-type: none"> <li>1. stock of more than 20 bags of cement outside Building 044 was covered properly.</li> <li>2. Chemical container was removed.</li> </ol>	28 August 2017
28 August 2017	<ol style="list-style-type: none"> <li>1. General refuse and stagnant water were observed at Building 023.</li> <li>2. No drip tray was provided for chemical containers outside Building 023.</li> </ol>	<ol style="list-style-type: none"> <li>1. The Contractor was reminded to clear the general refuse and stagnant water and keep the site tidiness.</li> <li>2. The Contractor was reminded to provided proper drip tray for the chemical containers.</li> </ol>	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in September 2017.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
<b>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</b>			
7 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
14 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
21 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
28 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
13 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
17 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
24 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
1 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
7 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
14 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
28 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
<b>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</b>			
7 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
14 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
21 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
28 June 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
13 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
17 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
24 July 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
1 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
7 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
14 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
28 August 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.





# APPENDIX G

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## Waste Flow Table

## Monthly Summary Waste Flow Table for 2017



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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
January	1.390	0.010	1.380	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.197
February	1.070	0.003	1.067	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.143
March	0.266	0.202	0.064	0.000	0.202	0.000	5.840	0.000	0.000	0.000	0.269
April	0.249	0.013	0.236	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.220
May	0.132	0.132	0.000	0.000	0.132	0.000	0.000	0.000	0.000	0.000	0.421
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.392
Sub-total	3.107	0.360	2.747	0.000	0.360	0.000	5.840	0.000	0.000	0.000	1.642
July	0.076	0.007	0.069	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.403
August	0.010	0.010	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.405
September											
October											
November											
December											
Total	3.193	0.377	2.816	0.000	0.377	0.000	5.840	0.000	0.000	0.000	2.450

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

Name of Department: Highways Department

Contract No.: HY/2014/05



- 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<sup>3</sup>.
  - (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<sup>3</sup>; soil = 2.0 tonnes/m<sup>3</sup>
    - excavated: rock = 2.0 tonnes/m<sup>3</sup>; soil = 1.8 tonnes/m<sup>3</sup>; broken concrete and bitumen = 2.4 tonnes/m<sup>3</sup>
    - C&D Waste = 0.9 tonnes/m<sup>3</sup>; bentonite slurry = 2.8 tonnes/m<sup>3</sup>
  - (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



ATAL Technologies Ltd.

Contract No. **HY/2013/06** HKBCF Automatic Vehicle Clearance Support System

Location: Artificial Island of HKBCF ( C8 Area)

Ver: 1st  
Date: Jan 2017

**Monthly Summary Waste Flow Table for 2017**

Month	Inert C&D Waste disposal / 鹽性廢物 (in tonnes) (see Note 1)						Non-inert C&D Waste disposal 非鹽性廢物 (in tonnes)		Waste to be recycled and returned / 可再循環利用或回收的廢物								Total Quantity Generated 總生產量			
	Reused in the Work Package (e.g. backfilling) 再用於工程 (如回填)		Reused in other Projects 再用於其他工程		Inert Waste (e.g. soil, broken concrete, rubble, fill material etc.) 鹽性廢物 (如泥, 石矢頭, 石, 填料等)		Others (e.g. general refuse, broken formwork etc) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物					
	(b)		(c)		(d)		(e)		(in tonnes)		(in tonnes)		(in tonnes)		(in litre)				(a)= (b+c+d+e)	
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量			Est. Qty. 估計數量	Act. Qty. 實際數量
January	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000	
February	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000	
March	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	
April	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	
May	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	
June	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	
July	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	
<b>August</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.002</b>	<b>0.002</b>	
September																				
October																				
November																				
December																				
<b>Total</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.015</b>	<b>0.015</b>	<b>0.015</b>	<b>0.015</b>	<b>0.000</b>	<b>0.000</b>	<b>0.004</b>	<b>0.004</b>	<b>0.000</b>	<b>0.000</b>	<b>0.015</b>	<b>0.015</b>		

Notes: (1) The quantiles of C&D Materials, in tonne, was calculated by multiply the estimated volume, in m3, with the density of the soil, which is 1.5 gcm<sup>-3</sup>.





# APPENDIX H

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## Environmental Licenses and Permits

Environmental License/ Permits /Notification Register

LCAL H2642

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

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						
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 15	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	<b>Billing Account</b> for disposal of construction waste	7024342	16 Feb 2016	N/A	EPD	-
5	All Areas	30 Dec 2015	RABF-LTR- EPD-000001	<b>Notification</b> that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	06 Jan 2016	N/A	EPD	-
6	All Areas	04 Jan 2016	RABF-LTR- EPD-000002	<b>Registration</b> 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

LCAL H2642

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

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	<b>CNP</b> 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	<b>CNP</b> 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 2016	18 Nov 2016	EPD	Superseded by GW-RS0666-16
9	All Areas	16 Jun 2016	RABF-LTR- EPD-000015	<b>CNP</b> 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-RS0666-16	04 Jul 2016	03 Jan 2017	EPD	Superseded by GW-RS0907-16
10	All Areas	18 Aug 2016	RABF-LTR- EPD-000018	<b>CNP</b> 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-RS0907-16	01 Sep 2016	28 Feb 2017	EPD	Superseded by GW-RS1195-16



Environmental License/ Permits /Notification Register

LCAL H2642

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

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						
11	All Areas	16 Nov 2016	RABF-LTR-EPD-000020	<b>CNP</b> 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-RS1195-16	30 Nov 2016	29 May 2017	EPD	Superseded by GW-RS1315-16
12	All Areas	08 Dec 2016	RABF-LTR-EPD-000023	<b>CNP</b> 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-RS1315-16	22 Dec 2016	21 Jun 2017	EPD	Superseded by GW-RS0131-17
13	WA3	13 Jan 2017	RABF-LTR-EPD-000026	<b>CNP</b> for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0070-17	27 Jan 2017	26 Jul 2017	EPD	Superseded by GW-RS0626-17
14	All areas	03 Feb 2017	RABF-LTR-EPD-000028	<b>CNP</b> 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-RS0131-17	17 Feb 2017	16 Aug 2017	EPD	Superseded by GW-RS0306-17

Environmental License/ Permits /Notification Register

LCAL H2642

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

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						
15	All areas	20 Mar 2017	RABF-LTR-EPD-000035	<b>CNP</b> 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-RS0306-17	05 Apr 2017	02 Oct 2017	EPD	Superseded by GW-RS0435-17
16	All areas	05 May 2017	RABF-LTR-EPD-000036	<b>CNP</b> 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-RS0435-17	20 May 2017	16 Nov 2017	EPD	Superseded by GW-RS0710-17
17	WA3	28 Jun 2017	RABF-LTR-EPD-000041	<b>CNP</b> for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0626-17	27 Jul 2017	26 Jan 2018	EPD	-
18	All areas	03 Aug 2017	RABF-LTR-EPD-000042	<b>CNP</b> 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-RS0710-17	21 Aug 2017	16 Feb 2018	EPD	-

Environmental License/ Permits /Notification Register

Contract No. HY/2013/06 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System

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						
1	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	-
2	Building 023, 025 and 032	31 Jul 2015	WFG14980	<b>Billing Account</b> for disposal of construction waste	7023015	20 Aug 2015	N/A	EPD	-
3	N/A	N/A	N/A	Registration as Chemical Waste Producer for disposal chemical waste	N/A	N/A	N/A	N/A	#
4	All Areas	4 May 2017	CNP-GW416290	<b>CNP</b> for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 00:00 and 00:00 to 07:00. (Non-designated area)	GW-RS0452-17	1 Jun 2017	30 Nov 2017	EPD	-

# The Contractor of Contract No. HY/2013/06 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations.

**Environmental License/ Permits /Notification Register**

**Contract No. HY/2014/04 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System**

Date: August 2017									
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						
1	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	-
2	All Areas	23 Aug 2016	N/A	<b>Billing Account</b> for disposal of construction waste	7025930	20 Sep 2016	N/A	EPD	(a)
3	N/A	N/A	N/A	Registration as Chemical Waste Producer for disposal chemical waste	N/A	N/A	N/A	N/A	(b)
4	Building 058 & 059	27 Jul 2017	-	<b>CNP</b> for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 00:00 and 00:00 to 07:00. (Non-designated area)	GW-RS0640-17	6 Aug 2017	4 Feb 2018	EPD	-

Remarks:

(a) As informed by the Contractor of Contract No. HY/2014/04 on 5 May 2017, the billing account for disposal of construction waste should be 7025930.

(b) The Contractor of Contract No. HY/2014/04 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations.



# APPENDIX I

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

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

For Contract No. HY/2014/05

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting period	2	0	0
From commencement date of contract to end of reporting period	4	0	0

For Contract No. HY/2013/06 within Contract No. HY/2014/05 work area

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 period	0	0	0

For Contract No. HY/2014/04 within Contract No. HY/2014/05 work area

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 period	0	0	0



## Complaint Register

For Contract No. HY/2014/05

Complaint No.	Complaint Received Date	Category	Complaint Details	Follow up Action /Recommendation	Status
001	22 September 2016	Water Quality	According to ENPO's email to the Environmental Team, Engineer's Representative and Contractor on 22 September 2016, it is noted that EPD received a complaint lodged by a member of the public regarding whitish effluent discharge from two flat top barges into the sea every day from 18:00 to 04:00 hours next to Cell No.54 and 55 of Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities Construction Site.	After investigation, contractor confirmed that they do not have any marine works. In addition, they do not have any flat top barge working for Contract No. HY/2014/05. No mitigation measures are required as the complaint is not related to Contract No. HY/2014/05.	Closed.
002	14 December 2016	Noise	According to ENPO's email to ET, Engineer's Representative and Contractor on 14 December 2016, it was noted that EPD had received a complaint regarding a noise complaint from a member of public. The complainant said that he/she was disturbed by hammering noise generated from construction sites in mid-night over the past month. He/She suspected that the noise was generated from HZMB Project. Based on further email from ENPO on 20 December 2016, it is noted that the complainant lives in Seaview Crescent (海堤灣畔). He sometimes hears noise created by impacting metals or metal/ground, particularly in December 2016.	According as the information provided by the Contractor, no construction works being done after 11p.m. in November 2016 and December 2016. Therefore, the noise nuisance is considered not related to Contract No. HY/2014/05 after investigation. No follow-up action is required	Closed.



003	28 March 2017	Noise and Water Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 28 March 2017, it was noted that EPD had received a complaint regarding a noise and water quality complaint from a resident of Century Link. The complaint content as extracted below:</p> <p>"作(昨)晚大約十時起，屋外間歇有非常響亮聲音，經觀察應該是從港珠澳大橋近人工島的工程發出，噪音一直至深夜。另今早發現住處對出海面受到一大遍污染（見相片）。以上都應該是大橋工程所造成的污染"</p>	<p>According to the information provided by the Contractor, there was no construction work (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area) being done after 10pm on 26 March 2017.</p> <p>No marine works and marine transportation were carried out under this Contract. Based on the investigation results, it is found that the noise and water quality complaint is not related to Contract No. HY/2014/05 (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action is required.</p>	Closed.
004	31 May 2017	Air Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 1 June 2017, it was noted that EPD had received a complaint regarding dust emission from the haul road near Buildings 044 and 045 . The complaint content as extracted below:</p> <p>"投訴港珠澳大橋人工島地盤近 044 及 045 大廈旁的車路，有大量車出入，工人沒有灑水，引致塵埃，造成嚴重滋擾"</p>	The complaint is under investigation and will be reported in the next reporting period.	Investigating