

8 March 2018

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**

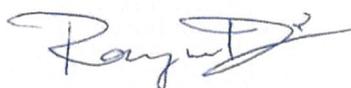
**Contract No. HY/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and
Facilities
Quarterly EM&A Report No.7 for September 2017 to November 2017**

Reference is made to the Environmental Team's submission of Quarterly Environmental Monitoring & Audit Report No.7 for September 2017 to November 2017 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC047/KC/RL" dated 8 March 2018) and provided to us via e-mail on 8 March 2018.

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 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/OC047/KC/RL

Date: 8 March 2018

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. 7**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Quarterly EM&A Report No. 7 (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. 7
(Covering the Period from 1 September 2017 to 30 November 2017)**

28 February 2018

Revision 1

Main Contractor



**Leighton - Chun Wo
Joint Venture**

Environmental Team

ATKINS

Member of the SNC-Lavalin Group

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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 seventh 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 September 2017 to 30 November 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/2013/01 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/2013/01 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		
September 2017	October 2017	November 2017
4, 13, 18 and 25	3, 11, 16, 23 and 30	6, 15, 20 and 27

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 September, October and November 2017) prepared by Contract No. HY/2011/03.

There was one AL exceedance of 24-hour TSP at ASM3B was recorded on 28 November 2017 by the Environmental Team of Contract No. HY/2013/01 during the reporting period, after investigation, the

exceedance was not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2013/01 during the reporting period. The IR was provided in **Appendix J**.

There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 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 were two complaints received in relation to the environmental impact during the reporting period.

The complaint which received by ET on 27 October 2017 was found that muddy water discharge from construction site of HKBCF and last for a week. After investigation, it 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.

Another complaint was received by ET on 23 November 2017 that was found dust emission from construction site of HKBCF on 23 November 2017. After investigation, it 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 Seventh 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 September 2017 to 30 November 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(*) Mr. Wu Yun Kau	3973 1806 9260 8341	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area				
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	---
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area				
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	---

Remark: Stephen Tsang was replaced by Mr. Wu Yun Kau from 17 November 2017

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

- ABWF & MEP works (Internal Finishes) of Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058, 059, 050A1, 050A2, 050H1 and 050H2
- Utilities and Drainage installation of Buildings 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
- PV Installation and curtain wall of Building 023
- Curtain wall of Buildings 044 and 045
- Canopy of Buildings 025, 053 and 059

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

- As confirmed by Contractor, construction works for Contract No. HY/2013/06 were not conducted within Contract No. HY/2014/05 works area during the reporting period

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

- Furniture delivery at Buildings 053 and 054
- Cabling Works at Buildings 058 and 059
- Installation of software at Buildings 053 and 054
- Radiation Testing at Buildings 058 and 059

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/2013/01 HZMB HKBCF – Passenger Clearance Building 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/2013/01 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 ⁽¹⁾	Dragonair/CNAC (Group) Building
	AMS7 ⁽¹⁾	Hong Kong SkyCity Marriott Hotel
Noise	NMS2 ⁽²⁾	Seaview Crescent
	NMS3B ^{(2),(3)}	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/2013/01 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 September, October and November 2017) prepared for Contract Nos. HY/2013/01 and HY/2011/03, 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 September, October and November 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/2013/01 during the reporting period.
- 3.1.4 There was one AL exceedance of 24-hour TSP at ASM3B was recorded on 28 November 2017 by the Environmental Team of Contract No. HY/2013/01 during the reporting period, after investigation, the exceedance was not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2013/01 during the reporting period. The IR was provided in Appendix J.

3.2 Noise Monitoring Results

- 3.2.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports (for September, October and November 2017) prepared for Contract No. HY/2013/01.
- 3.2.2 No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/01 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 September 2017, October 2017 and November 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/2013/01 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/2013/01 during the reporting period.
- 4.1.4 There was one AL exceedance of 24-hour TSP at ASM3B was recorded on 28 November 2017 by the Environmental Team of Contract No. HY/2013/01 during the reporting period, after investigation, the exceedance was not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2013/01 during the reporting period. The IR was provided in Appendix J.

4.2 Summary of Complaints, Notification of Summons and Successful Prosecution

- 4.2.1 There were two complaints received in relation to the environmental impact during this 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
005	27 October 2017	Water Quality
006	23 November 2017	Air Quality

Environmental Complaint No. 005 - Water Quality

- 4.2.2 According to ENPO's email to Environmental Team, Engineer's Representative and Contractor on 27 October 2017, it is noted that EPD had received a complaint regarding a water quality at C3 area.
- 4.2.3 According to the observation of weekly site inspections (3, 11, 16, 23 and 30 October 2017 and 6 November 2017) and confirmed by the Contractor, the wastewater generated from construction site is treated and reused in the site area. No site runoff within the Contract site was observed.
- 4.2.4 Based on the investigation results, it was found that the complaint regarding a water quality at C3 area 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 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 water quality impact during construction activities.

Environmental Complaint No. 006 - Air Quality

- 4.2.6 According to ENPO's email to ET, Engineer's Representative and Contractor on 23 November 2017, it was noted that EPD had received a complaint regarding dust emission from HZMB construction site.
- 4.2.7 Based on the Contractor information, the construction work on 23 November 2017 were: Architectural Builders Works and Finishes(ABWF) & Mechanical, Electrical, and Plumbing (MEP) works (Internal) of Buildings 022, 023, 025, 032, 044, 045, 050A1, 050A2, 050H1, 050H2 and Utilities and Drainage installation of Buildings 021, 022, 023, 025, 044 and 045.
- 4.2.8 No dusty activities are included in the above works.
- 4.2.9 According to site inspection which conducted on 6, 15 and 20 November 2017, no dusty activities and dry condition in haul road were observed.
- 4.2.10 Based on the investigation results, it is found that the nuisance of dust emission from haul road 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.
- 4.2.11 No notification of summons and prosecution was received during the reporting period.
- 4.2.12 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 was reminded to provide proper drip tray and chemical label for the chemical container.
 - The Contractor was reminded to clear the stagnant water from the drip tray.
 - The Contractor was reminded to cover the opened cement bags properly.
 - The Contractor was reminded to tidy up the site.
 - The Contractor was reminded to clear the stagnant water properly.
 - The Contractor was reminded to dispose of the general refuses into the enclosed general refuses bins and keep the site tidiness.
 - The Contractor was reminded to treat the oil stained soil as chemical waste and provide the impermeable sheet under the breaker during the maintenance activities.
 - The Contractor was reminded to display the NRMM label properly.
 - The Contractor was advised to cover the stock of cement bags properly by impervious sheeting to avoid dust emissions.
- 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 Seventh Quarterly EM&A Report which summarizes findings of the EM&A works during the reporting period from 1 September 2017 to 30 November 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 (September 2017, October 2017 and November 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/2013/01 during the reporting period.
- 5.3.4 There was one AL exceedance of 24-hour TSP at ASM3B was recorded on 28 November 2017 by the Environmental Team of Contract No. HY/2013/01 during the reporting period, after investigation, the exceedance was not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2013/01 during the reporting period. The IR was provided in Appendix J.
- 5.3.5 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 5.3.6 Environmental site inspections were carried out on 4, 13, 18, and 25 September 2017, 3, 11, 16, 23 and 30 October 2017 and 6, 15, 20 and 27 November 2017 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.
- 5.3.7 There were two complaints received in relation to the environmental impact during the reporting period. One complaint received on 27 October 2017 from ENPO that was regarding a water quality at C3 area. Based on the investigation results, it is found that the complaint is 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 is required. Another complaint was received on 23 November 2017 from ENPO that regarding air quality. Based on the investigation results, no follow up action by 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) was required.

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



FIGURES

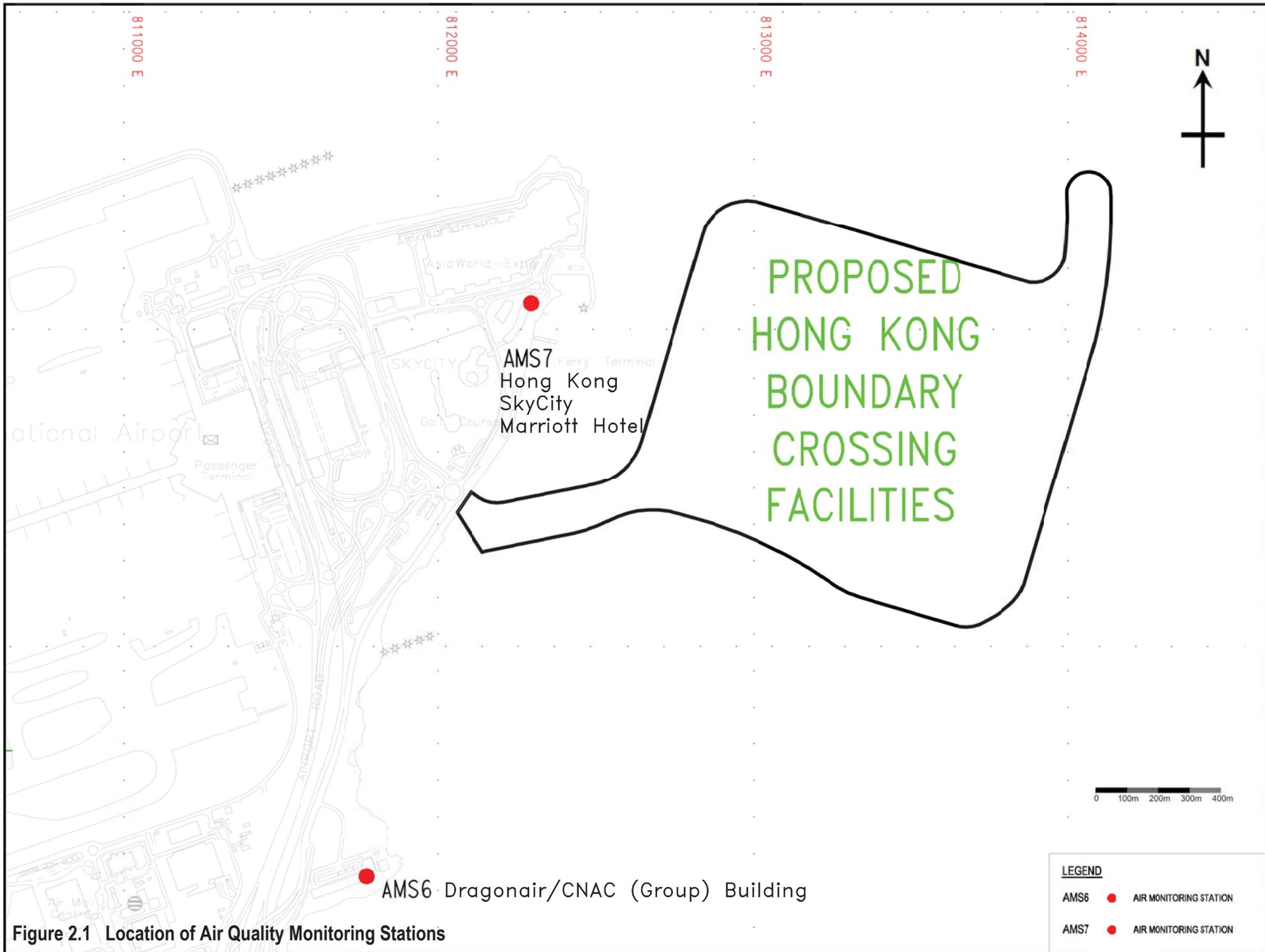


Figure 2.1 Location of Air Quality Monitoring Stations

LEGEND		
AMS6	●	AIR MONITORING STATION
AMS7	●	AIR MONITORING STATION

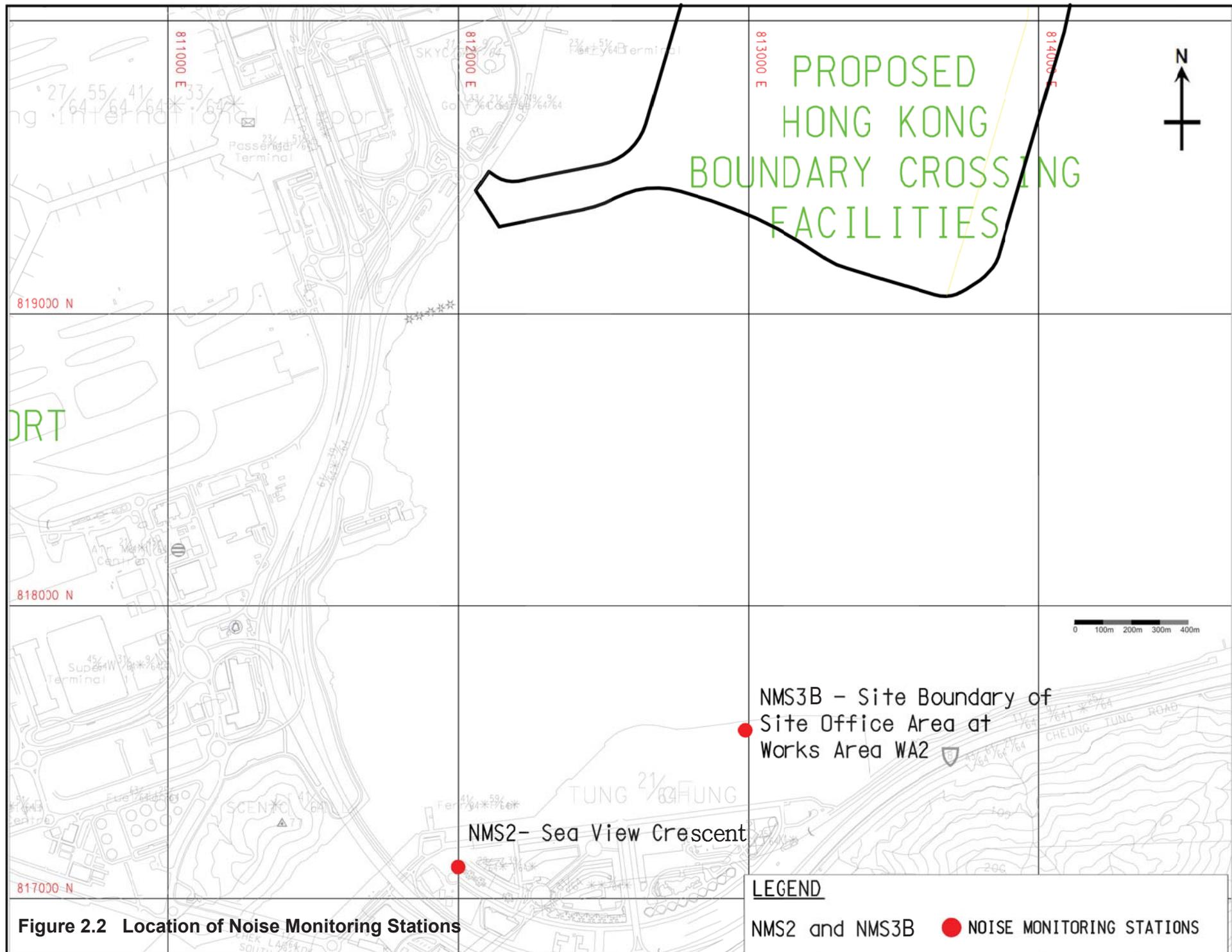


Figure 2.2 Location of Noise Monitoring Stations

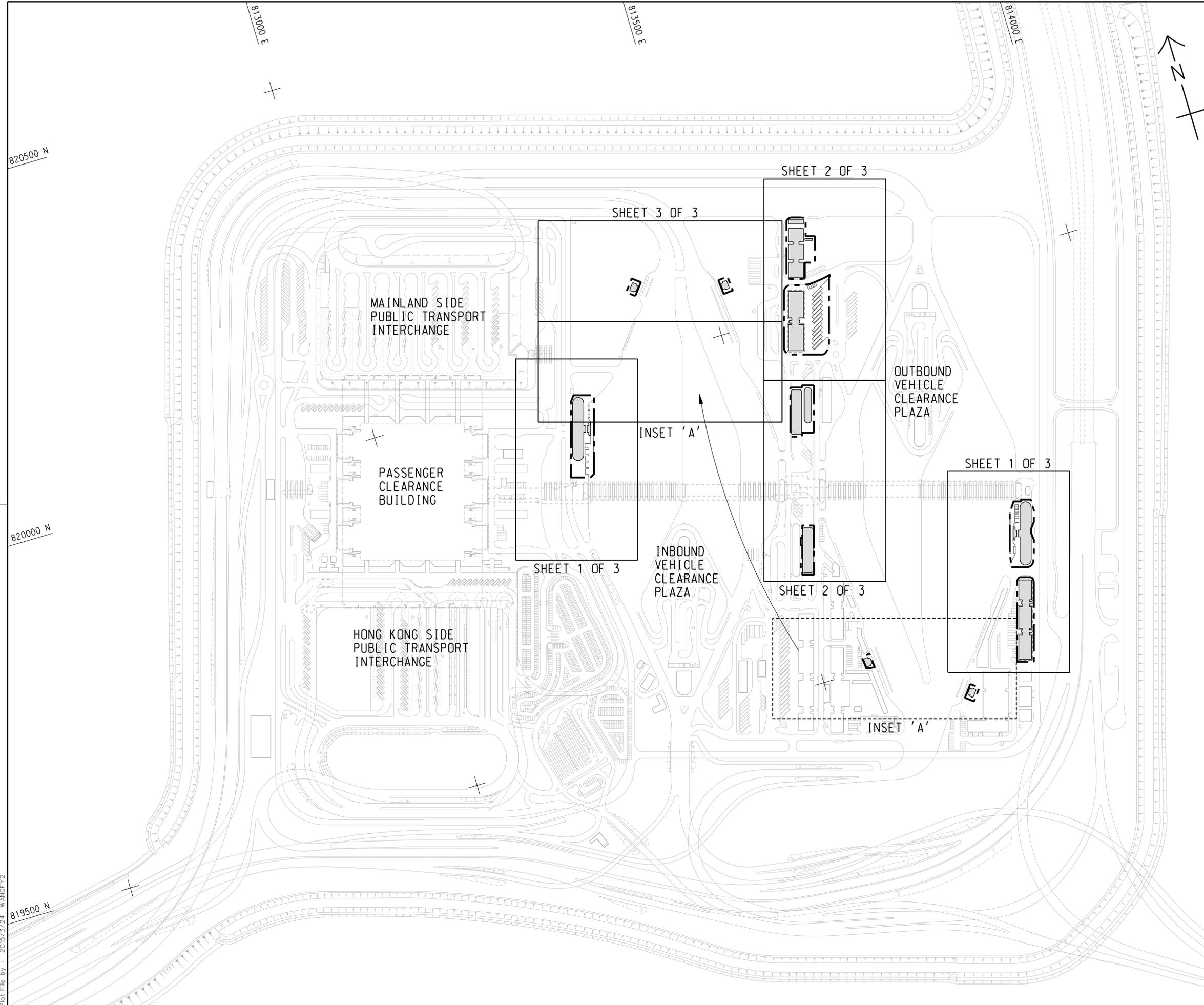
LEGEND

NMS2 and NMS3B ● NOISE MONITORING STATIONS



APPENDIX A

Location of Works Areas



820500 N

820000 N

819500 N

813000 E

813500 E

814000 E

Plot File by : 2015/3/24 WANGFY2

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

HIGHWAYS DEPARTMENT
 路政署
 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

KEY PLAN

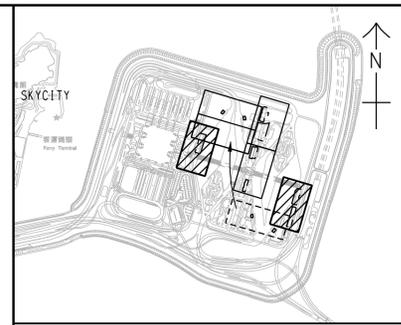
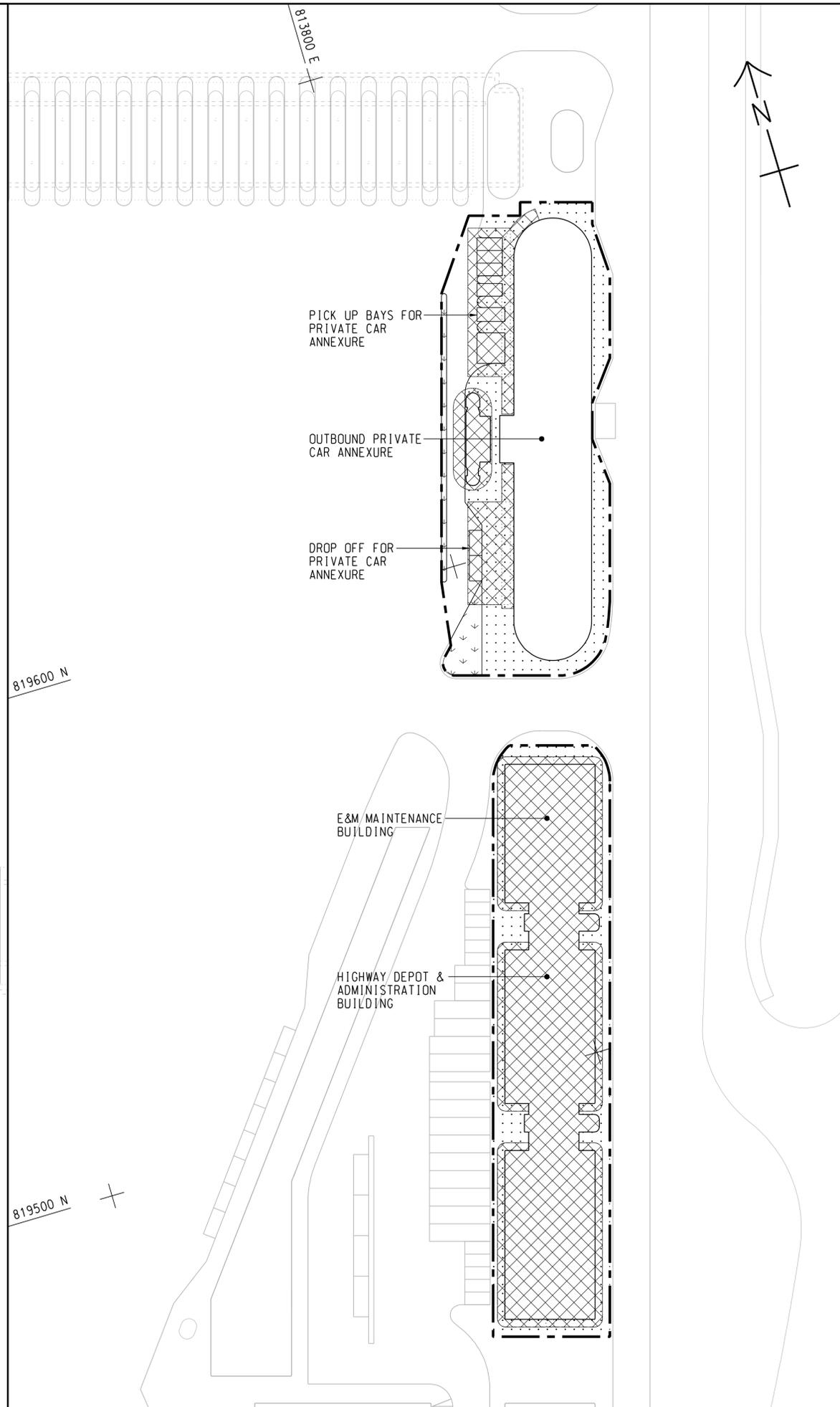
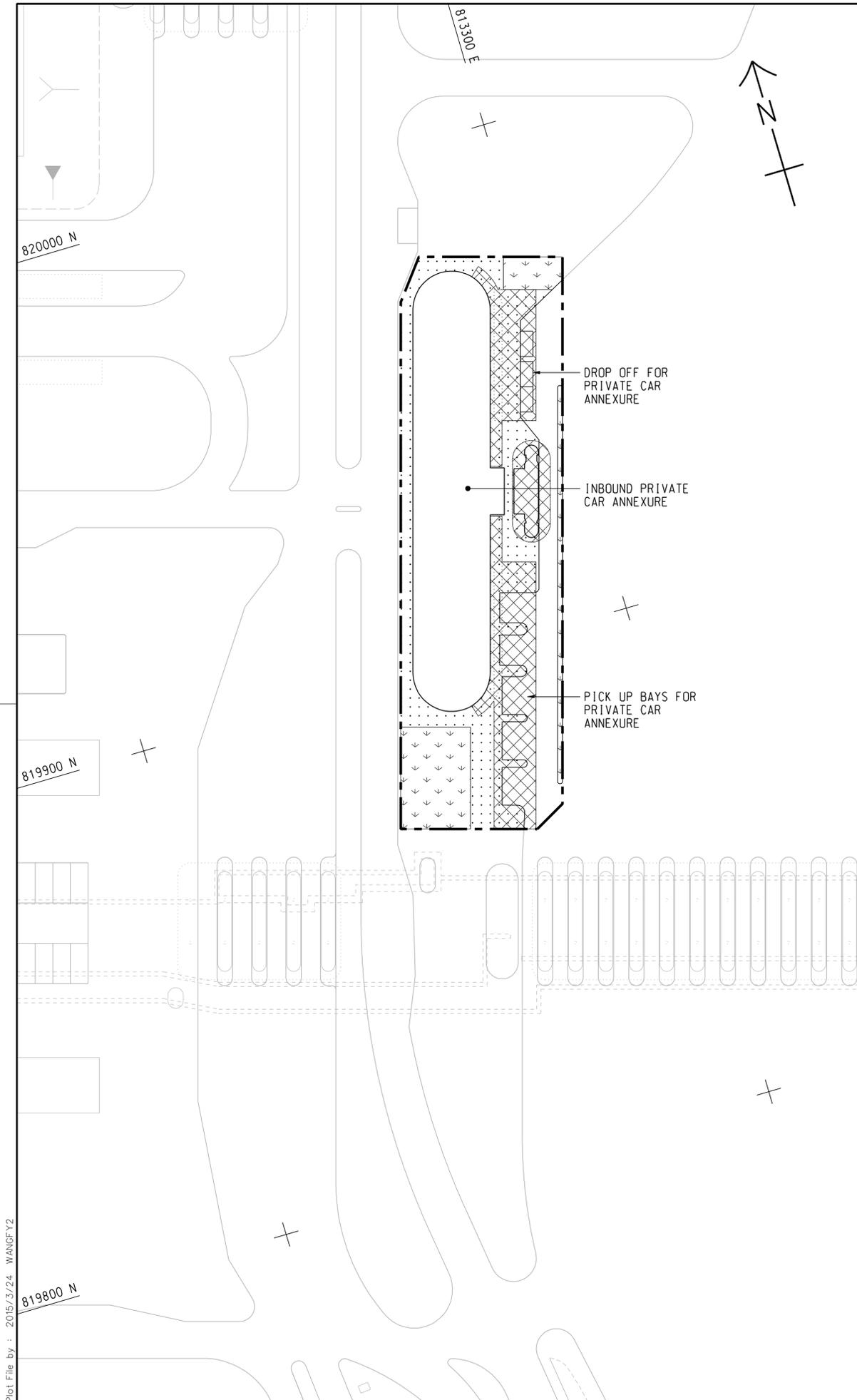
AECOM Aedas
 Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI

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

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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

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Rogers Stirk Harbour + Partners
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Aedas +

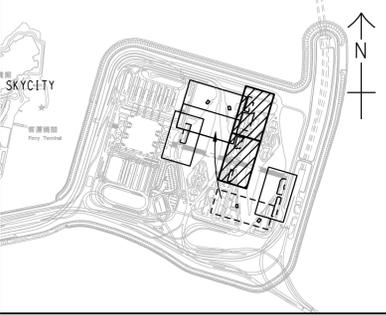
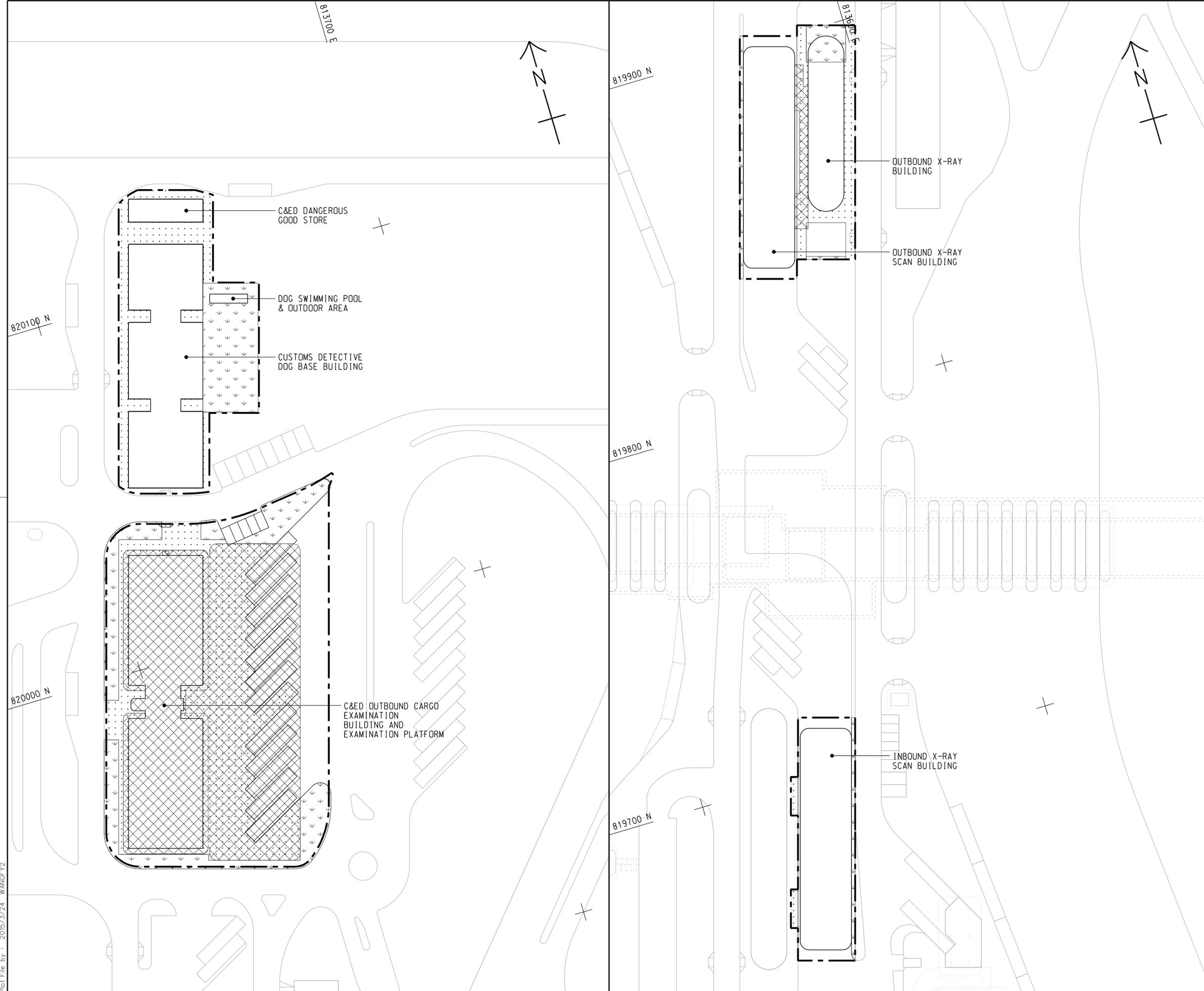
DRG.NO. / 圖紙編號: 60191048/C8/000/C00/1011

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

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 港珠澳大橋香港工程管理局
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HONG KONG-ZHUHAI-MACAO BRIDGE
 HONG KONG BOUNDARY CROSSING FACILITIES
 - REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

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Aedas
 Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI +

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

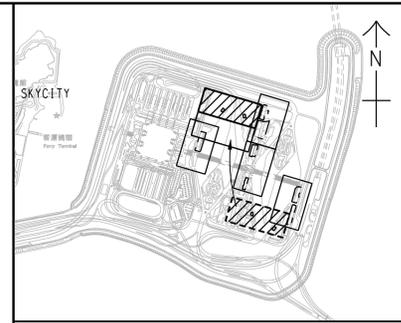
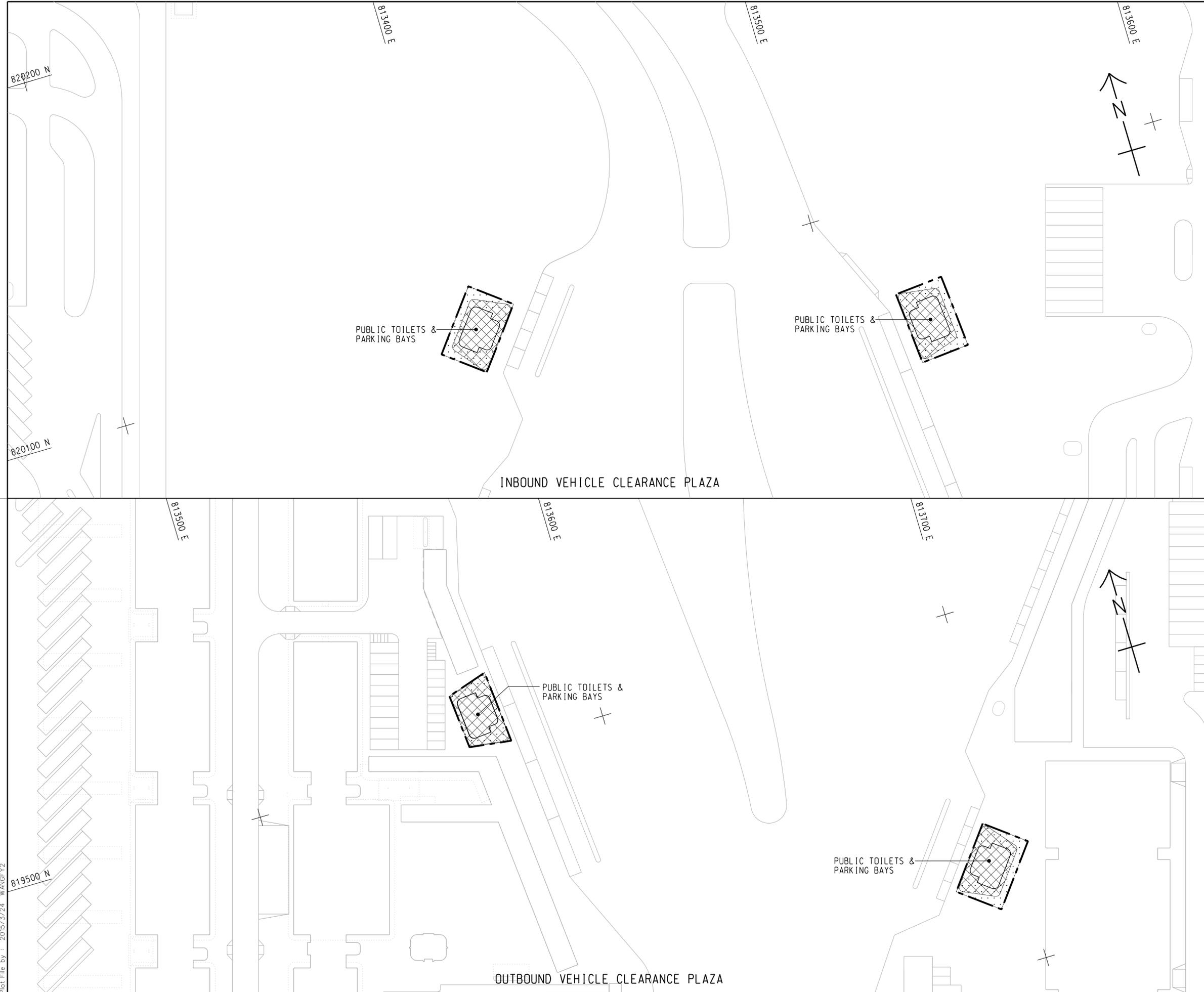
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 比例 A1 1 : 500

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-	TENDER DRAWING	MAR. 15



HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
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GENERAL LAYOUT PLAN

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圖紙編號

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BWCW	HY/2014/05	TKH

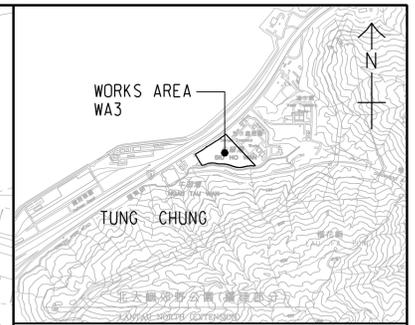
DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 比例 1 : 500
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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 ² (WHOLE)

TENDER DRAWING	BWCW SCI	MAR. 15
REV. 修改	DESCRIPTION 內容摘要	DATE 日期

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

WORKS AREA WA3

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

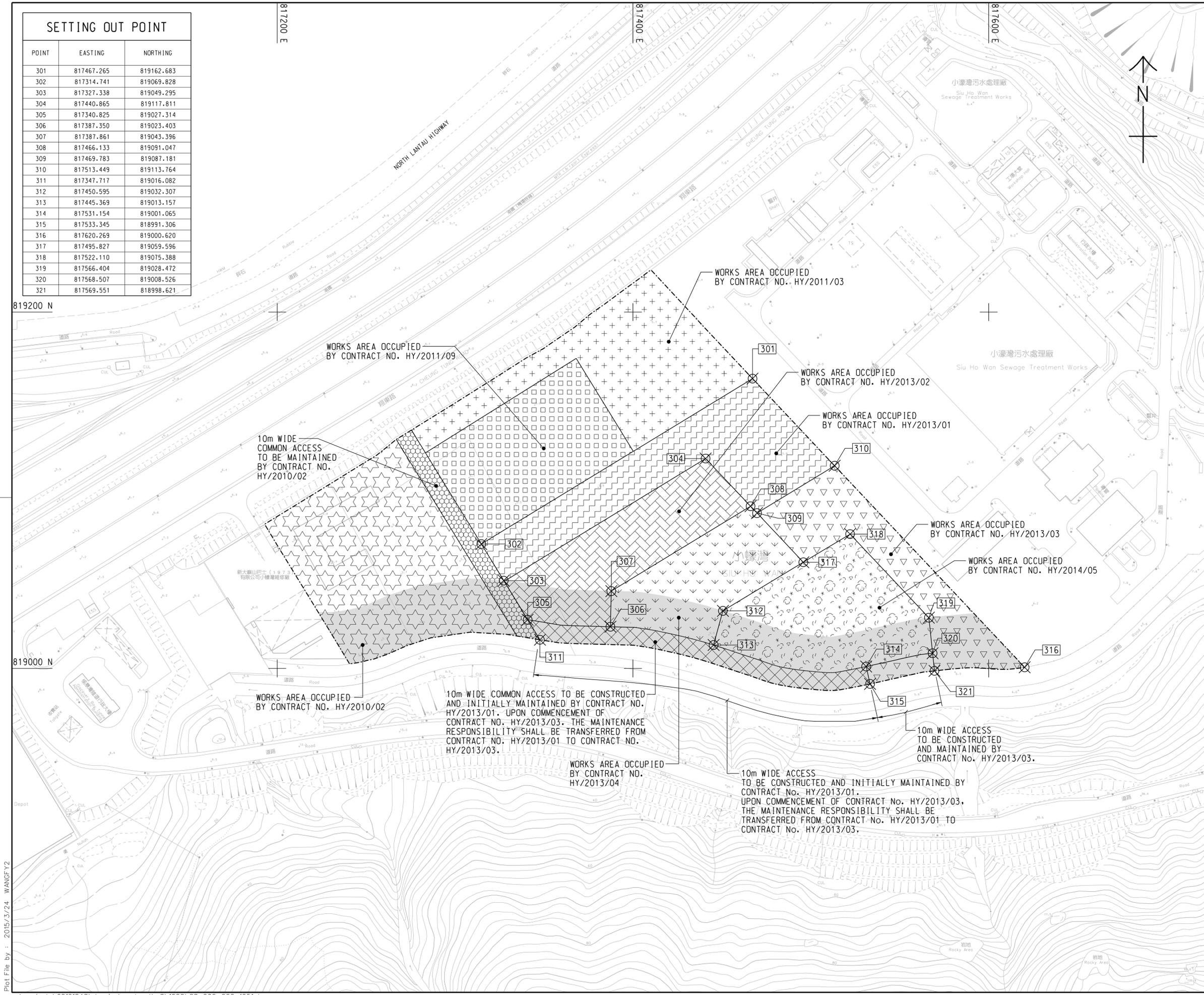
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 圖紙編號

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 : 1000

DIMENSIONS ARE IN METRES
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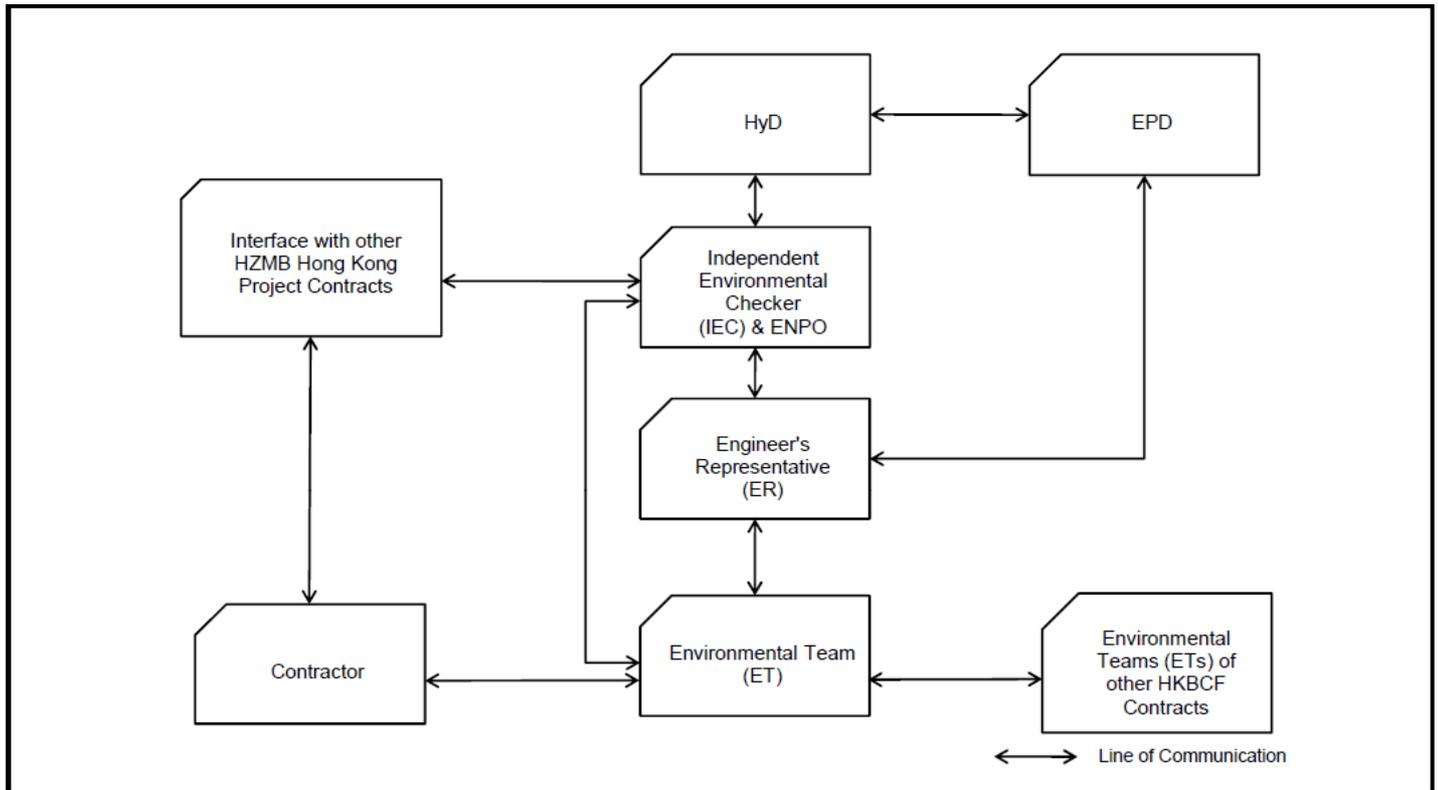
Plot File by : 2015/3/24 WANGFY2



APPENDIX B

Project Organization for Environmental Works

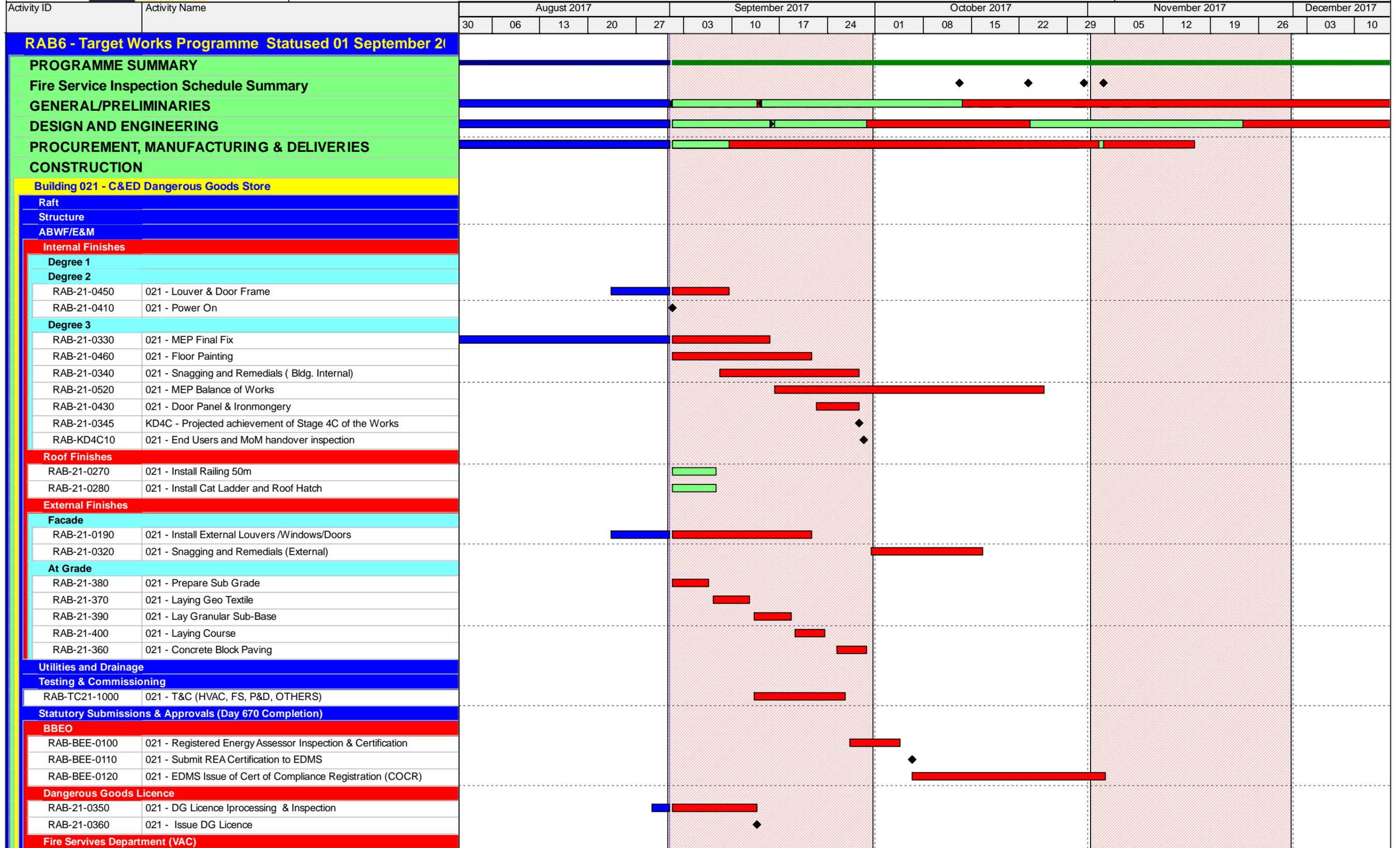
Project Organisation for Environmental Works





APPENDIX C

Construction Programme



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

3-Month Rolling Programme Update, 01 Sep. 2017

RAB6			
Date	Revision	Checked	Approved
01-Sep-17	3-Month Rolling Programme, 01 Sep-17 Update	SGJ	



Activity ID	Activity Name	August 2017					September 2017				October 2017					November 2017				December 2017	
		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
RAB-FSD-820	021 - Submit Form 501 to FSD																				
RAB-FSD-300	021 - FSD Inspection Period																				
RAB-FSD-310	021 - Fire Certificate Obtained (Form 172) Handover																				
Engineer (AECOM)																					
RAB-21-2190	021 - Submit As-Built Drawings to the Engineer																				
RAB-21-2200	021 - Engineer Inspection Period																				
Building 022 - Customs Detective Dog Base Building																					
Excavation																					
Raft Foundations																					
Structure																					
Walls & Columns																					
Roof Slab																					
North Structure																					
Cure and Strip																					
Middle Structure																					
Cure and Strip																					
South Structure																					
Cure and Strip																					
ABWF/E&M																					
Internal Finishes																					
North																					
Degree 1																					
RAB-22-8215	022 - Plastering/Rendering																				
RAB-22-8665	022 - Screeding																				
RAB-22-8285	022 - Undercoat																				
Degree 2																					
RAB-22-0885	022 - Door Frame & Louvers																				
RAB-22-0910	022 - Power On																				
RAB-22-0855	022 - Frame for Wall Panel & Cladding																				
Degree 3																					
RAB-22-8255	022 - Ceiling Finish Compl.																				
RAB-22-8535	022 - Floor Tiling + Floor Finishes (for Early Handover Rooms)																				
RAB-22-0865	022- Ceiling Frame																				
RAB-22-8395	022 - Wall Tiling & Painting																				
RAB-22-8275	022 - MEP Final Fix																				
RAB-22-8365	022 - Floor Finish Other Than Act. No. RAB-22-8535																				
RAB-22-8545	022 - Early Handover Rooms Ready for End Users***																				
RAB-22-8245	022 - Glazing																				
RAB-22-0870	022 - MEP Balance of Works																				
RAB-22-8295	022 - Snagging and Remedials (Bldg. Internal)																				
RAB-22-8265	022 - Door Panel & Ironmongery																				
RAB-22-0980	022 - End Users and MOM Handover Inspection																				
RAB-22-0950	022 - ABWF and MEP works to Degree 3 (KD5C)																				
External Finishes																					
Facade																					
RAB-22-0470	022 - External Painting, Tiling & Cladding																				
RAB-22-0710	Snag Listing - Bldg. External & External Works																				
At Grade																					
RAB-22-2100	022 - Prepare Sub Grade																				
RAB-22-2170	022 - Landscaping for Outdoor Excise Lawn																				
RAB-22-2110	022 - Laying Geo Textile																				
RAB-22-2120	022 - Lay Granular Sub-Base																				

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

3-Month Rolling Programme Update, 01 Sep. 2017

RAB6			
Date	Revision	Checked	Approved
01-Sep-17	3-Month Rolling Programme, 01 Sep-17 Update	SGJ	



Activity ID	Activity Name	August 2017					September 2017				October 2017					November 2017				December 2017	
		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
RAB-22-2130	022 - Laying Course																				
Roof Finishes - North																					
RAB-22-0530	022 - Install Railing																				
RAB-22-0540	022 - Install Cat Ladder and Roof Hatch																				
RAB-22-0720	022 - Make good external surfaces																				
Specialist Installations																					
RAB-22-0990	022 - Kennels Installation (42No)																				
RAB-22-0550	022 - Small Glass Canopy South Entrance																				
Window Wall																					
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																				
Dog Swimming Pool																					
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																				
Utilities and Drainage																					
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																				
Testing & Commissioning																					
RAB-TC22-1000	022 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BBEO																					
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)																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
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																				
Fire Services Department (VAC)																					
RAB-FSD-860	022 - Submit Form 501																				
Fire Services Water (FS)																					
Commencement																					
Completion																					
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-994	022 - Submit Form 314																				
RAB-FSD-330	022 - FSD Inspection Period, FS																				
Engineer (AECOM)																					
RAB-22-2220	022 - Submit Building 022 As Built Drawings to Engineer																				
Building 023 - C&ED Outbound Cargo Examination Building and Examination PI																					

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

3-Month Rolling Programme Update, 01 Sep. 2017

RAB6			
Date	Revision	Checked	Approved
01-Sep-17	3-Month Rolling Programme, 01 Sep-17 Update	SGJ	



Activity ID	Activity Name	August 2017					September 2017				October 2017					November 2017				December 2017	
		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
Excavation																					
Raft Foundations - Inspection Platform																					
Raft Foundations - Main Building																					
Structure																					
Ground Floor																					
Planters																					
RAB-23-6140	023 - Construct North Planter Box and Ramp						████████████████████														
RAB-23-6230	023 - Construct South Planter Box and Ramp										████████████████████										
Supporting Walls and Columns to +12.85mPD																					
First Floor																					
Cure and Strip																					
Supporting Walls and Columns to +17.1mPD																					
Roof																					
Cure and Strip																					
Supporting Walls and Columns to +19.1mPD																					
Lift Doghouse																					
Cure and Strip																					
ABWF/E&M																					
Internal Finishes																					
Ground Floor																					
Degree 1																					
RAB-23-5420	023 - Construct Blockwork Walls to G/F	████████████████████																			
RAB-23-5430	023 - Plastering & Undercoat, G/F	████████████████████					████████████████████														
023 -23-5430	023 - Screeding, G/F	████████████████████																			
Degree 2																					
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	████████████████████					◆														
RAB-23-5790	023 - ABWF and MEP works to Degree 2 for others (KD3B) G/F	████████████████████					◆														
Degree 3																					
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-23-5760	023 - Ceiling Frame, G/F	████████████████████					████████████████████														
RAB-23-6380	023 - MEP Final Fix, G/F	████████████████████					████████████████████														
RAB-23-6080	023 - Glazing, 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	████████████████████					◆														
First Floor																					
Degree 1																					
RAB-23-8055	023 - Construct Blockwork Walls, G/F - 1/F North (932m³), 1/F	████████████████████					████████████████████														
RAB-23-8065	023 - Plastering & Undercoat, 1/F	████████████████████					████████████████████														
RAB-23-8215	023 - Screeding, 1/F	████████████████████					████████████████████														
Degree 2																					
RAB-23-8125	023 - MEP 2nd Fix, 1/F	████████████████████					████████████████████														
RAB-23-8085	023 - Frame for Wall Panel & Cladding + Louver, 1/F	████████████████████					████████████████████														
RAB-23-8235	023 - Power On	████████████████████					◆														
RAB-23-8115	023 - Access for C3 for Equip. Instln***, 1/F, KD3D Target to Achieve	████████████████████					◆														
Degree 3																					
RAB-23-8135	023 - Ceiling Paint Finish, 1/F	████████████████████					████████████████████														

█ Remaining Level of Effort
 █ Actual Work
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		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
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-23-8195	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-23-8265	023 - MEP Balance of Works																				
RAB-23-5970	023 - ABWF and MEP works to Degree 3 (KD3E)																				
RAB-23-2290	023 - Snag Listing & Remedial Works - Building Internal																				
RAB-23-6040	023 - End Users and MOM Handover Inspection																				
RAB-23-8225	023 - Handover Rooms Ready to End Users***, KD3C Target to Ach																				
RAB-23-8255	023 - ABWF and MEP works to Degree 3 - Remaining Area- 1/F																				
Roof Level Dog House																					
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																				
External Finishes																					
Facade																					
RAB-23-5560	023 - External Render																				
RAB-23-5590	023 - External Tiling																				
RAB-23-5650	023 - External Painting																				
RAB-23-5990	023 - Dismantle Scaffolding																				
At Grade																					
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																				
Window Wall																					
East																					
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																				
West																					
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																				
Roof Finishes																					
RAB-23-5550	023 - Waterproof membrane																				
RAB-23-5620	023 - Top Screed																				
RAB-23-5640	023 - Roof Tiling																				
RAB-23-5920	023 - Install Railing																				
Green Roof																					
RAB-23-5720	023 - Install green Roof Irrigation Systems																				
RAB-23-5900	023 - Complete Green Roofing Works																				
Specialist Installations																					
RAB-23-6270	023 - Install Lift (1 nos)																				
RAB-23-6010	023 - Installation of Roller Shutter Header Boxes (x 3)																				

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		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
RAB-23-7310	023 - Install Glazed Entrance Canopy																				
RAB-23-6250	023 - Installation of Roller Shutter Curtain (x3)																				
PV Installation																					
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																				
Steel Canopy																					
RAB-23-6240	023 - Install Secondary Steelwork																				
RAB-23-6290	023 - Install Metal Cladding Panels																				
RAB-23-6310	023 - Install Misc Metalworks																				
Utilities and Drainage																					
RAB-23-7975	023 - Construct Permanent Drainage, Manholes & Draw Pits																				
RAB-23-7985	023 - Utilites 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																				
Testing & Commissioning																					
RAB-TC23-1000	023 - T&C (HVAC, FS, P&D, OTHERS)																				
RAB-TC23-1010	023 - T&C (Lift)																				
Statutory Submissions & Approvals (Day 610 Completion)																					
BEE																					
RAB-BEE-150	023 - Registered Energy Assessor Inspection & Certification																				
EMSD - Building 023 Lift Inspection																					
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																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-774	023 - Submit WWO 46 Pt. IV for Building 023																				
RAB-WSD-107	023 - WSD Inspection/Meter Connection																				
Fire Services Department (VAC)																					
RAB-FSD-890	023 - Submit Form 314																				
RAB-FSD-900	023 - Submit Form 501																				
Fire Services Department (FSD)																					
Commencement																					
Completion																					
RAB-FSD-108	023 - Submit WWO 46 Pt. IV for Building 023																				
RAB-FSD-112	023 - Issue WWO 46 Part V																				
Engineer (AECOM)																					
RAB-23-2250	023 - Submit Building 023 As Built Drawings to Engineer																				
Building 025 - Inbound Private Car Annexure																					
Excavation																					
Raft Foundations																					
Structure																					
Walls & Columns																					
Roof Slab																					
Cure and Strip																					
ABWF/E&M INTERNAL FINISHES																					
INTERNAL FINISHING WORKS																					
Degree 1																					
RAB-25-7400	025 - MEP 1st Fix																				

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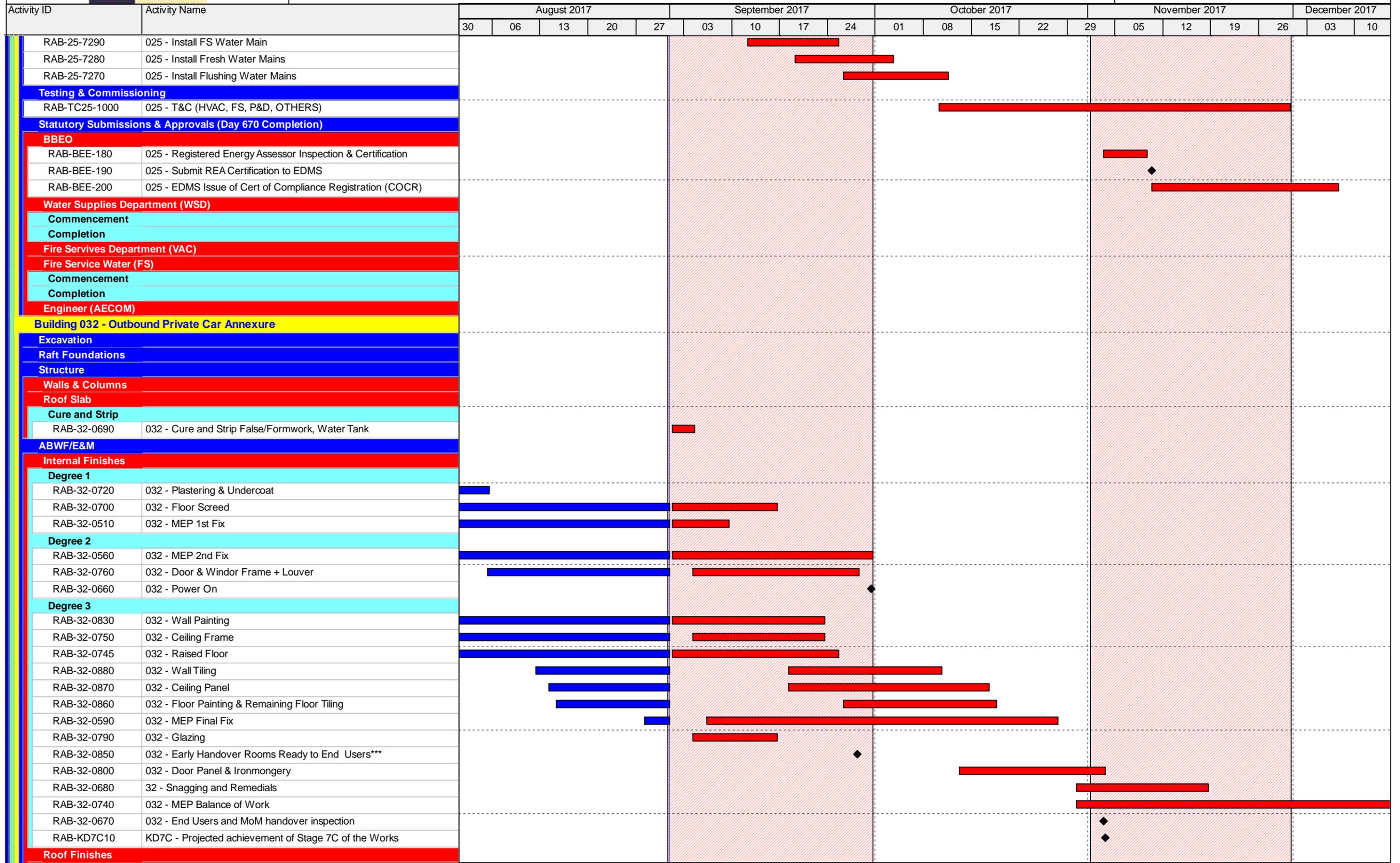


Activity ID	Activity Name	August 2017					September 2017				October 2017					November 2017				December 2017	
		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
Degree 2																					
RAB-25-7430	025 - MEP 2nd Fix	[Actual Work]					[Critical Remaining]														
RAB-25-7570	025 - Raised Floor Pedestal	[Actual Work]					[Critical Remaining]														
RAB-25-7450	025 - Frame for Wall Panel & Cladding	[Actual Work]					[Critical Remaining]														
RAB-25-7560	025 - Access C3, C6 & C7 Equip. Installation***						[Critical Remaining]														
RAB-25-7350	025 - Power On Available						[Critical Remaining]														
Degree 3																					
RAB-25-7470	025 - Ceiling Painting & Ceiling Sub-Frame	[Actual Work]					[Critical Remaining]														
RAB-25-7620	025 - Ceiling Panel	[Actual Work]					[Critical Remaining]														
RAB-25-7600	025 - Wall Paint Finish Coat	[Actual Work]					[Critical Remaining]														
RAB-25-7610	025 - Wall Tiling	[Actual Work]					[Critical Remaining]														
RAB-25-7480	025 - Floor Tiling	[Actual Work]					[Critical Remaining]														
RAB-25-7460	025 - MEP Final Fix	[Actual Work]					[Critical Remaining]														
RAB-25-7440	025 - Door Frame/Wall Panel	[Actual Work]					[Critical Remaining]														
RAB-25-7580	025 - Floor Painting	[Actual Work]					[Critical Remaining]														
RAB-25-7370	025 - Snagging and Remedials	[Actual Work]					[Critical Remaining]														
RAB-25-7550	025 - MEP Balance of Works	[Actual Work]					[Critical Remaining]														
RAB-25-7520	025 - Glazing	[Actual Work]					[Critical Remaining]														
RAB-25-7630	025 - Early Handover Rooms Ready to End Users***, Target to Achieve						[Critical Remaining]														
RAB-25-7590	025 - Floor Carpet						[Critical Remaining]														
RAB-25-7375	KD6C - Projected achievement of Stage 6C of the Works						[Critical Remaining]														
RAB-KD6C10	025 - End Users and MoM handover inspection						[Critical Remaining]														
RAB-25-7510	025 - Plaster Board						[Critical Remaining]														
External Finishes																					
Facade																					
RAB-25-0570	025 - Dismantle Scaffolding	[Actual Work]																			
RAB-25-0360	025 - Install External Louvers /Windows/Doors	[Actual Work]					[Remaining Work]														
RAB-25-0580	025 - Make good external surfaces	[Actual Work]					[Remaining Work]														
At Grade																					
RAB-25-6400	025 - Prepare Sub Grade										[Critical Remaining]										
RAB-25-6390	025 - Laying Geo Textile										[Critical Remaining]										
RAB-25-6410	025 - Lay Granular Sub-Base										[Critical Remaining]										
Roof Finishes																					
RAB-25-0550	025 - Install Railing (222m)						[Critical Remaining]														
RAB-25-0540	025 - Install Cat Ladders and Roof Hatch						[Critical Remaining]														
Green Roof																					
RAB-25-0700	025 - Install Green Roof Irrigation Systems						[Critical Remaining]														
RAB-25-0710	025 - Complete Green Roof Works						[Critical Remaining]														
Specialist Installations																					
Glazed Canopy																					
RAB-25-0490	025 - Install Primary Steelwork	[Actual Work]																			
RAB-25-0500	025 - Install Secondary Steelwork						[Remaining Work]														
RAB-25-0520	025 - Install Glazed Panels						[Remaining Work]														
IMMD Kiosk																					
RAB-25-0380	025 - Internal ABWF and MEP of IMMD Kiosk	[Actual Work]					[Critical Remaining]														
RAB-25-0350	025 - External Finishes to IMMD Kiosk						[Critical Remaining]														
RAB-25-0430	025 - Erect Kiosk Canopy @ +10.17mPD						[Critical Remaining]														
Utilities and Drainage																					
RAB-25-7250	025 - Construct Permanent Drainage, Manholes & Draw Pits	[Actual Work]					[Critical Remaining]														
RAB-25-7260	025 - Utilities and Common Telecom Ducting	[Actual Work]																			

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RAB-32-0550	032 - Install Railing																				
RAB-32-0540	032 - Install Cat Ladders and Roof Hatch																				
Green Roof																					
RAB-32-0620	032 - Install Green Roof Irrigation Systems																				
RAB-32-0650	032 - Complete Green Roof Works																				
External Finishes																					
Facade																					
RAB-32-0400	032 - External Render																				
RAB-32-0360	032 - Install External Louvers /Windows/Doors																				
RAB-32-0420	032 - External Tiling																				
RAB-32-0450	032 - External Painting																				
RAB-32-0580	032 - Make good external surfaces																				
RAB-32-0570	032 - Dismantle Scaffolding																				
At Grade																					
RAB-32-6460	032 - Prepare Sub Grade																				
RAB-32-6450	032 - Laying Geo Textile																				
RAB-32-6470	032 - Lay Granular Sub-Base																				
Specialist Installations																					
RAB-32-630	032 - Construct Immigration Counters x 3																				
RAB-32-640	032 - Construct Health Department Screening Station X 1																				
IMMD Kiosk																					
RAB-32-0380	032 - Internal ABWF and MEP of IMMD Kiosk																				
RAB-32-0350	032 - External Finishes to IMMD Kiosk																				
RAB-32-0430	032 - Erect Kiosk Canopy @ +10.17mPD																				
Glazed Canopy																					
RAB-32-0480	032 - Install Steel Support Columns (14 No)																				
RAB-32-0490	032 - Install Primary Steelwork																				
RAB-32-0500	032 - Install Secondary Steelwork																				
Utilities and Drainage																					
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																				
Testing & Commissioning																					
RAB-TC32-1000	032 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BBE0																					
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
Fire Services Department (HVAC)																					
RAB-FSD-960	032 - Submit Form 314, HVAC																				
Fire Water Service (FS)																					
Commencement																					
Completion																					
RAB-FSD-380	032 - Submit WWO 46 Pt. IV, FS																				
Engineer (AECOM)																					
RAB-32-7250	032 - Submit Building 032 As Built Drawings to Engineer																				
Building 044 - E&M Maintenance Building																					
Excavation																					
Raft																					

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		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
Structure																					
Walls & Columns																					
Ground to First Floor																					
First Floor																					
Cure and Strip																					
First Floor to Second Floor																					
Second Floor																					
Cure and Strip																					
Second Floor to Roof																					
Roof Level																					
Cure and Strip																					
ABWF/E&M																					
Ground Floor																					
Degree 1																					
RAB-44-1180	044 - Plastering & Undercoat - G/F																				
RAB-44-1185	044 - MEP 1st Fix - G/F																				
RAB-44-1170	044 - Screed - G/F																				
Degree 2																					
RAB-44-9175	044 - MEP 2nd Fix - G/F																				
RAB-44-0760	044 - Door & Window Frame + Louver - G/F																				
Degree 3																					
RAB-44-9285	044 - Wall Finish, Paint & Tile - G/F																				
RAB-44-9255	044 - Ceiling Paint - G/F																				
RAB-44-9235	044 - Ceiling Panel Frame - G/F																				
RAB-44-9245	044 - Ceiling Plaster Board Frame																				
RAB-44-9265	044 - Floor Tile Finish - G/F																				
RAB-44-9295	044 - Door Panel & Ironmongery - 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																				
First Floor																					
Degree 1																					
RAB-44-9315	044 - Construct Blockwork Walls - 1/F																				
RAB-44-9305	044 - MEP 1st Fix - 1/F																				
RAB-44-9335	044 - Plastering & Undercoat - 1/F																				
RAB-44-9325	044 - Screed - 1/F																				
Degree 2																					
RAB-44-9365	044 - MEP 2nd Fix - 1/F																				
RAB-44-9455	044 - Door & Window Frame + Louver - 1/F																				
Degree 3																					
RAB-44-9555	044 - Wall Finish, Paint & Tile - 1/F																				
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-44-9505	044 - Door Panel & Ironmongery - 1/F																				
RAB-44-9565	044 - Floor Tile Finish - 1/F																				
RAB-44-9705	044 - Ceiling Plaster Board																				
RAB-44-9375	044 - MEP Final Fix - 1/F																				
RAB-44-9495	044 - Ceiling Panel - 1/F																				

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RAB-44-9485	044 - Glazing - 1/F																				
RAB-44-9475	044 - Floor Paint Finish - 1/F																				
Second Floor																					
Degree 1																					
RAB-44-9525	044 - Construct Blockwork Walls - 2/F																				
RAB-44-9545	044 - Plastering & Undercoat - 2/F																				
RAB-44-9515	044 - MEP 1st Fix - 2/F																				
RAB-44-9535	044 - Screed - 2/F																				
Degree 2																					
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																				
Degree 3																					
RAB-44-9595	044 - Wall Finish, Paint & Tile - 2/F																				
RAB-44-9635	044 - Ceiling Paint Finish - 2/F																				
RAB-44-9725	044 - Ceiling Plaster Board Frame - 2/F																				
RAB-44-9735	044 - Ceiling Plaster Board																				
RAB-44-9585	044 - MEP Final Fix - 2/F																				
RAB-44-9675	044 - Glazing - 2/F																				
RAB-44-9715	044 - Door Panel & Ironmongery - 2/F																				
RAB-44-9795	044 - MEP Balance of Works																				
RAB-44-9685	044 - Floor Tile Finish & Floor Finish to Early handover Rooms - 2/F																				
RAB-44-9645	044 - Ceiling Panel Frame - 2/F																				
RAB-44-9745	044 - Ceiling Panel - 2/F																				
Roof Finishes																					
RAB-44-0420	044 - Leveling screed - (242m ²)																				
RAB-44-0450	044 - Waterproof membrane - (242m ²)																				
RAB-44-1150	044 - Insulation Board - (242m ²)																				
RAB-44-0480	044 - Top Screed - (242m ²)																				
RAB-44-0520	044 - Install Roof Tiles - (242m ²)																				
RAB-44-0540	044 - Install Railing																				
RAB-44-0550	044 - Install Cat Ladder and Roof Hatch																				
Green Roof																					
RAB-44-0350	044 - Leveling screed - (242m ²)																				
RAB-44-0360	044 - Waterproof membrane - (242m ²)																				
RAB-44-0390	044 - Top Screed - (242m ²)																				
RAB-44-0400	044 - Install green Roof Irrigation Systems																				
External Finishes																					
Facade																					
RAB-44-0470	044 - External Render																				
RAB-44-0530	044 - External Painting																				
RAB-44-0490	044 - External Tiling																				
RAB-44-0430	044 - Install External Louvers /Windows/Doors																				
RAB-44-0570	044 - Dismantle Scaffolding																				
At Grade																					
RAB-44-6520	044 - Prepare Sub Grade																				
RAB-44-6510	044 - Laying Geo Textile																				
RAB-44-6530	044 - Lay Granular Sub-Base																				
RAB-44-6540	044 - Laying Course																				

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RAB-44-6500	044 - Concrete Block Paving																				
Specialist Installations																					
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																				
Curtain Wall																					
East																					
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																				
West																					
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																				
Utilities and Drainage																					
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																				
RAB-44-7905	044 - Utilites and Common Telecom Ducting																				
Testing & Commissioning																					
RAB-TC44-1010	044 - T&C, Lift																				
RAB-TC44-1000	044 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals																					
BEO																					
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)																				
EMSD - Building 044 Lift Inspection																					
RAB-FSD-200	044 - Submit EMSD Form 3 (Commencement of Lift Installation)																				
RAB-FSD-210	044 - Submit EMSD Form 5 (Completion of Lift Installation)																				
RAB-FSD-220	044 - EMSD Lift Inspection																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-684	044 - Submit WWO 46 Pt. IV																				
RAB-WSD-314	044 WSD Inspection/Meter Connection																				
Fire Services Department (HVAC)																					
RAB-FSD-1020	044 - Submit Form 314 to FSD, HVAC																				
RAB-FSD-1040	044 - Submit Form 501 to FSD, HVAC																				
Fire Water Services (FS)																					
Commencement																					
Completion																					
RAB-FSD-116	044 - Submit WWO 46 Pt. IV, FS																				
RAB-FSD-120	044 WSD Issue WWO Part V																				
RAB-FSD-128	044 - Submit Form 501, FS																				
RAB-FSD-126	044 - Submit Form 314 to FSD, FS																				
Engineer (AECOM)																					
RAB-44-7280	044 - Submit Building 044 As Built Drawings to Engineer																				

█ Remaining Level of Effort
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		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10		
Building 045 - Highways Depot & Administration Building																							
Raft Foundation																							
Diesel Fuel Chamber																							
Structure G/F to R/F																							
G/F to 1/F Walls & Columns																							
1/F Slab																							
Cure and Strip																							
1/F to 2/F Walls & Columns																							
2/F Slab																							
Cure and Strip																							
2/f to R/F Walls & Columns																							
Roof Level Slab																							
Cure and Strip																							
ABWF/E&M																							
Ground Floor, South - G/F																							
Degree 1, G/F																							
RAB-45-9725	045 - MEP 1st Fix - G/F	[Actual Work]																					
RAB-45-9765	045 - Screed - G/F	[Actual Work]																					
Degree 2, G/F																							
RAB-45-9805	045 - MEP 2nd Fix - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-9895	045 - Door & Windor Frame + Louver - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-9905	045 - Access for C3 to Install Equipment	[Actual Work]					[Critical Remaining]				◆												
RAB-45-10075	045 - Projeted achievement of Stage 8B of the Works - G/F	[Actual Work]					[Critical Remaining]				◆												
Degree 3, G/F																							
RAB-45-9935	045 - Wall Finish, Paint & Tile - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-10005	045 - Ceiling Paint - G/F	[Actual Work]																					
RAB-45-9915	045 - Floor Finish (Paint & Tile) - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-9945	045 - Door Panel & Ironmongery - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-10035	045 - Ceiling Plaster Board Frame & Ceiling Panel Frame - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-9815	045 - MEP Final Fix - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-9925	045 - Glazing - G/F	[Actual Work]					[Critical Remaining]																
RAB-45-10055	045 - Ceiling Plaster Board & Ceiling Panel- G/F	[Actual Work]					[Critical Remaining]																
First Floor, 1/F																							
Degree 1, 1/F																							
RAB-45-9975	045 - Screed - 1/F	[Actual Work]																					
RAB-45-9955	045 - MEP 1st Fix - 1/F	[Actual Work]																					
Degree 2, 1/F																							
RAB-45-10015	045 - MEP 2nd Fix - 1/F	[Actual Work]					[Remaining Work]																
RAB-45-10105	045 - Door & Windor Frame + Louver - 1/F	[Actual Work]					[Remaining Work]																
RAB-45-10065	045 - Access to C3 Equipment Instalation***	[Actual Work]					[Remaining Work]				◆												
Degree 3, 1/F																							
RAB-45-10175	045 - Ceiling Paint - 1/F	[Actual Work]																					
RAB-45-10145	045 - Wall Finish, Paint & Tile - 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10125	045 - Floor Finish (Paint & Tile) - 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10155	045 - Door Panel & Ironmongery - 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10205	045 - Ceiling Plaster Board Frame Ceiling Panel Frame- 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10025	045 - MEP Final Fix - 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10245	045 - Ceiling Plaster Board & Ceiling Panel - 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10285	045 - Glazing - 1/F	[Actual Work]					[Critical Remaining]																
RAB-45-10275	045 - Handover to End users***	[Actual Work]					[Critical Remaining]				◆												
Second Floor, 2/F																							
Degree 1, 2/F																							

█ Remaining Level of Effort
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		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
RAB-45-0810	045 - Construct Blockwork Walls - 2/F	[Actual Work]																			
RAB-45-10195	045 - Plastering & Undercoat - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10185	045 - Screed - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10165	045 - MEP 1st Fix - 2/F			[Actual Work]			[Remaining Work]														
Degree 2, 2/F																					
RAB-45-10225	045 - MEP 2nd Fix - 2/F			[Actual Work]			[Remaining Work]														
RAB-45-10315	045 - Door & Window Frame + Louver - 2/F						[Remaining Work]														
RAB-45-10295	045 - Access for C3 Equip. Installation, 2/F***						[Remaining Work]														
RAB-45-0950	KD8B - Projected achievement of Stage 8B of the Works - 2/F, 045																				
RAB-45-10255	045 - Power On - 2/F																				
Degree 3, 2/F																					
RAB-45-10395	045 - Ceiling Paint - 2/F	[Actual Work]																			
RAB-45-10355	045 - Wall Finish, Paint & Tile - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10335	045 - Floor Finish (Paint & Tile) - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10375	045 - Ceiling Plaster Board Frame & Ceiling Panel Frame - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10235	045 - MEP Final Fix - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10345	045 - Glazing - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10385	045 - Ceiling Plaster Board & Ceiling Panel - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-0980	045 - Snagging and Remedials - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10365	045 - Door Panel & Ironmongery - 2/F	[Actual Work]					[Critical Remaining]														
RAB-45-10305	045 - MEP Balance of Works	[Actual Work]					[Critical Remaining]														
RAB-45-10265	045 - End Users and MoM handover inspection	[Actual Work]					[Critical Remaining]														
RAB-45-0970	KD8C - Projected achievement of Stage 8C of the Works - 2/F, 045	[Actual Work]					[Critical Remaining]														
External Finishes																					
Bldg. External Finishes																					
Facade																					
RAB-45-0630	045 - External Render	[Actual Work]																			
RAB-45-0620	045 - Install External Louvers /Windows/Doors						[Remaining Work]														
RAB-45-0690	045 - External Painting						[Remaining Work]														
RAB-45-0720	045 - Dismantle Scaffolding						[Remaining Work]														
RAB-45-0760	045 - Make good external surfaces						[Remaining Work]														
At Grade																					
RAB-45-6580	045 - Prepare Sub Grade						[Critical Remaining]														
RAB-45-6570	045 - Laying Geo Textile						[Critical Remaining]														
RAB-45-6590	045 - Lay Granular Sub-Base						[Critical Remaining]														
RAB-45-6600	045 - Laying Course						[Critical Remaining]														
RAB-45-6560	045 - Concrete Block Paving						[Critical Remaining]														
Roof Finishes -																					
RAB-45-0820	045 - Leveling screed	[Actual Work]																			
RAB-45-0860	045 - Waterproof membrane			[Actual Work]			[Critical Remaining]														
RAB-45-0880	045 - Top Screed						[Critical Remaining]														
RAB-45-0910	045 - Install Roof Tiles						[Critical Remaining]														
RAB-45-0920	045 - Install Railing						[Critical Remaining]														
RAB-45-0930	045 - Install Cat Ladder and Roof Hatch						[Critical Remaining]														
Green Roof - Noth Side, 2/F Level																					
RAB-45-0600	045 - Leveling screed						[Critical Remaining]														
RAB-45-0650	045 - Waterproof membrane						[Critical Remaining]														
RAB-45-1210	045 - Insulation Board						[Critical Remaining]														
RAB-45-0670	045 - Top Screed						[Critical Remaining]														
RAB-45-0680	045 - Install green Roof Irrigation Systems						[Critical Remaining]														

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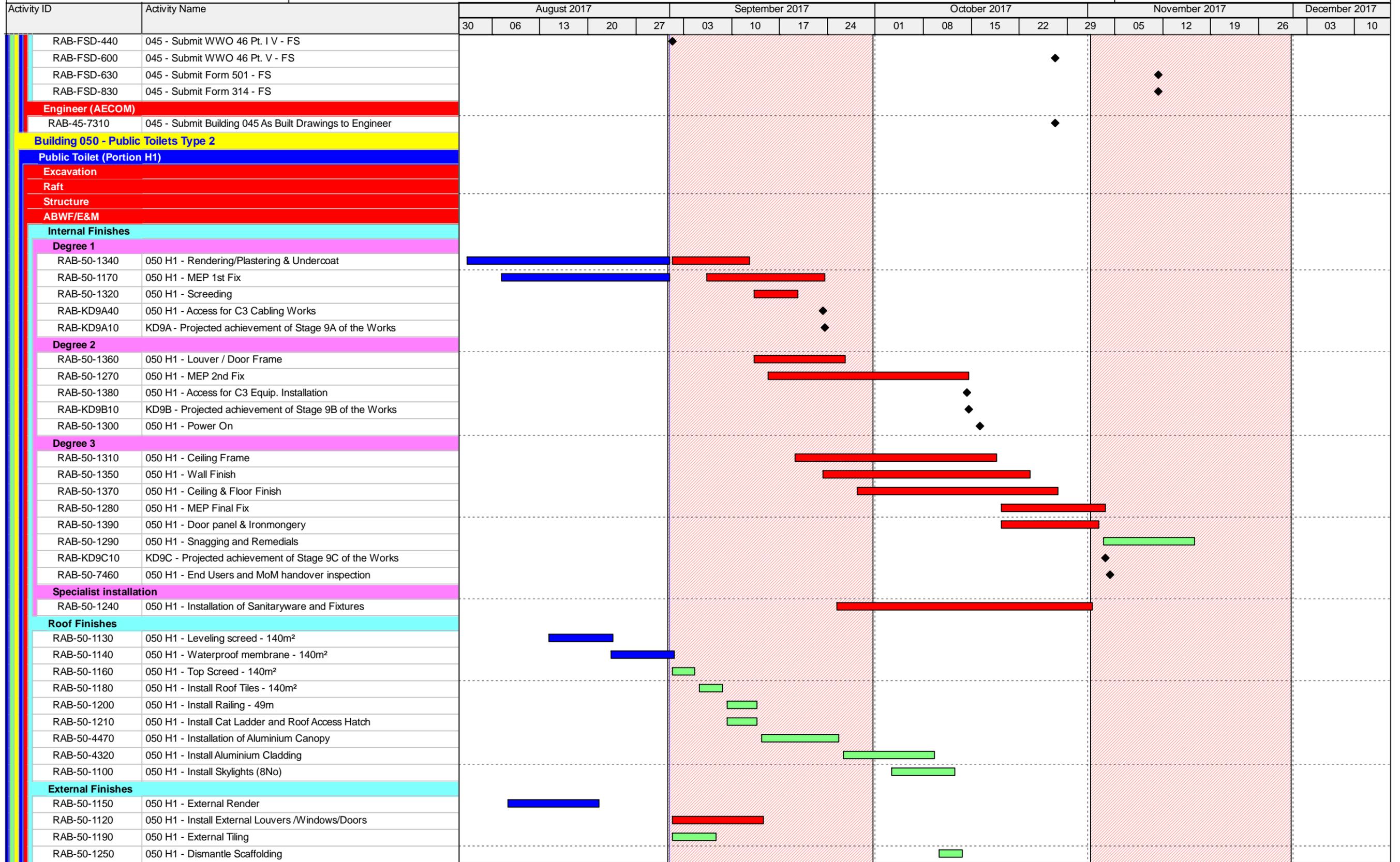


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		30	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19	26	03	10
RAB-45-0740	045 - Complete Green Roofing Works																				
Specialist Installations																					
RAB-45-0590	045 - Install Lift (1 nos)																				
RAB-45-1125	045 - Install Genset and switch board G/F																				
Window Wall																					
East																					
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																				
West																					
RAB-45-6990	045 - Install Primary Steelwork for Window Wall																				
Utilities and Drainage																					
RAB-45-7935	045 - Construct Permanent Drainage and Manholes (Approx 180m)																				
RAB-45-7945	045 - Utilites and Common Telecom Ducting																				
RAB-45-7955	045 - Install Flushing Water Mains																				
RAB-45-7965	045 - Install Fresh Water Mains																				
RAB-45-7975	045 - Install FS Water Main																				
Testing & Commissioning																					
RAB-TC45-1030	045 - T&C, Lift																				
RAB-TC45-1020	045 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BBEO																					
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)																				
EMSD - Building 045 Lift Inspection																					
RAB-FSD-240	045 - Submit EMSD Form 5 (Completion of Lift Installation)																				
RAB-FSD-250	045 - EMSD Lift Inspection																				
Fuel Tank - DG License																					
RAB-FSD-660	045 - FSD Inspection & Approval																				
RAB-FSD-680	045 - FSD Issue License																				
Generator Set - EPD Permit																					
RAB-EPD-0130	045 - Submission Form 501to EPD																				
RAB-EPD-0140	045 - EPD Approval																				
Generator Set - DG Licence																					
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																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-654	045 - Submit WWO 46 Pt. IV																				
RAB-WSD-284	045 - WSD's Processing/Inspection/Meter Connection																				
HVAC																					
RAB-FSD-990	045 - Submit Form 314																				
RAB-FSD-1000	045 - Submit Form 501																				
FSD																					
Commencement																					
Completion																					

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RAB-50-1260	050 H1 - Make good external surfaces																				
Utilities and Drainage																					
RAB-50-8015	050 H1 - Construct Permanent Drainage and Manholes (Approx 20m)																				
RAB-50-8035	050 H1 - Install Flushing Water Mains																				
RAB-50-8045	050 H1 - Install Fresh Water Mains																				
RAB-50-8025	050 H1 - Utilities and Common Telecom Ducting																				
Testing & Commissioning																					
RAB-TC50-1000	050 H1 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BEE																					
RAB-BEE-300	050 H1 - Registered Energy Assessor Inspection & Certification																				
RAB-BEE-310	050 H1 - Submit REA Certification to EDMS																				
RAB-BEE-320	050 H1 - EDMS Issue of Cert of Compliance Registration (COCR)																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-454	050 H1 - Submit WWO 46 Pt. IV																				
RAB-WSD-464	050 H1 - WSD Inspection/Meter Connection for Building 050																				
RAB-WSD-474	050 H1 - WSD Issue WWO 046 Part V, Cert Plumbing Inst'n Compl																				
Fire Services Department (VAC)																					
RAB-FSD-1080	050 H1 - Submit Form 314																				
RAB-FSD-1090	050 H1 - Submit Form 501																				
Engineer (AECOM)																					
RAB-50-7340	050 H1 - Submit Building 050 H1 As Built Drawings to Engineer																				
Public Toilet (Portion H2)																					
Excavation																					
Raft																					
Structure																					
RAB-50-2080	050 H2 - Cure and Strip False/Formwork																				
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
RAB-50-2330	050 H2 - Plastering/Rendering & Undercoat																				
RAB-50-2170	050 H2 - MEP 1st Fix																				
RAB-KD10A10	050 H2 - Projected achievement of Stage 10A of the Works																				
RAB-50-2390	050 H2 - Access for C3 Cabling Works																				
RAB-50-2310	050 H2 - Screeding																				
Degree 2																					
RAB-50-2360	050 H2 - Louver / Door Frame																				
RAB-50-2270	050 H2 - MEP 2nd Fix																				
RAB-50-2300	050 H2 - Power On																				
RAB-KD10B10	050 H2 - Projected achievement of Stage 10B of the Works																				
RAB-KD10B40	050 H2 - Access for C3 Equip. Installation																				
Degree 3																					
RAB-50-2340	050 H2 - Ceiling Frame																				
RAB-50-2350	050 H2 - Wall Finish																				
RAB-50-2370	050 H2 - Ceiling & Floor Finish																				
RAB-50-2280	050 H2 - MEP Final Fix																				
RAB-50-2380	050 H2 - Door panel & Ironmongery																				
RAB-50-7470	050 H2 - End Users and MoM handover inspection																				
RAB-KD10C10	050 H2 - Projected achievement of Stage 10C of the Works																				

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RAB-50-2290	050 H2 - Snagging and Remedials																				
Specialist installation																					
RAB-50-2240	050 H2 - Installation of Sanitaryware and Fixtures																				
Roof Finishes																					
RAB-50-2130	050 H2 - Leveling screed - 140m ²																				
RAB-50-2140	050 H2 - Waterproof membrane - 140m ²																				
RAB-50-2160	050 H2 - Top Screed - 140m ²																				
RAB-50-2180	050 H2 - Install Roof Tiles - 140m ²																				
RAB-50-2200	050 H2 - Install Railing - 49m																				
RAB-50-2210	050 H2 - Install Cat Ladder and Roof Access Hatch																				
RAB-50-2230	050 H2 - Installation of Aluminium Canopy																				
RAB-50-4360	050 H2 - Install Aluminium Cladding																				
RAB-50-2100	050 H2 - Install Skylights (8No)																				
External Finishes																					
RAB-50-2150	050 H2 - External Render																				
RAB-50-2120	050 H2 - Install External Louvers /Windows/Doors																				
RAB-50-2190	050 H2 - External Tiling																				
RAB-50-2220	050 H2 - External Painting																				
RAB-50-2250	050 H2 - Dismantle Scaffolding																				
RAB-50-2260	050 H2 - Make good external surfaces																				
Utilities and Drainage																					
RAB-50-7895	050 H2 - Construct Permanent Drainage and Manholes (Approx 20m)																				
RAB-50-7905	050 H2 - Utilites and Common Telecom Ducting																				
RAB-50-7915	050 H2 - Install Flushing Water Mains																				
RAB-50-7925	050 H2 - Install Fresh Water Mains																				
Testing & Commissioning																					
RAB-TC50-1010	050 H2 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BEO																					
RAB-BEE-330	050 H2 - Registered Energy Assessor Inspection & Certification																				
RAB-BEE-340	050 H2 - Submit REA Certification to EDMS																				
RAB-BEE-350	050 H2 - EDMS Issue of Cert of Compliance Registration (COCR)																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-594	050 H2 - Submit WWO 46 Pt. IV																				
RAB-WSD-434	050 H2 - WSD Inspection/Meter Connection for Building 050																				
Fire Servives Department (VAC)																					
RAB-FSD-1110	050 H2 - Submit Form 314																				
RAB-FSD-1120	050 H2 - Submit Form 501																				
Engineer (AECOM)																					
RAB-50-7370	050 H2 - Submit Building 050 H1 As Built Drawings to Engineer																				
Public Toilet (Portion A1)																					
Excavation																					
Raft																					
RAB-50-3050	050 A1 - Ground Slab																				
Structure																					
RAB-50-3080	050 A1 - Cure and Strip False/Formwork																				
ABWF/E&M																					
Internal Finishes																					
Degree 1																					

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RAB-50-3310	050 A1 - Plastering/Rendering & Undercoat																				
RAB-50-3170	050 A1 - MEP 1st Fix																				
RAB-50-3320	050 A1 - Screeding																				
RAB-50-3330	050 A1 - Access for C3 for Cabling Works																				
RAB-KD11A10	KD11A - Projected achievement of Stage 11A of the Works																				
Degree 2																					
RAB-50-3270	050 A1 - MEP 2nd Fix																				
RAB-50-3360	050 A1 - Louver / Door Frame																				
RAB-50-3390	050 A1 - Access for C3 for Equip. Installation																				
RAB-KD11B10	KD11B - Projected achievement of Stage 11B of the Works																				
RAB-50-3300	050 A1 - Power On																				
Degree 3																					
RAB-50-3340	050 A1 - Ceiling Frame																				
RAB-50-3350	050 A1 - Wall Finish																				
RAB-50-3370	050 A1 - Ceiling & Floor Finish																				
RAB-50-3280	050 A1 - MEP Final Fix																				
RAB-50-3380	050 A1 - Door panel & Ironmongery																				
RAB-50-3290	050 A1 - Snagging and Remedials																				
RAB-KD11C10	KD11C - Projected achievement of Stage 11C of the Works																				
RAB-50-7480	050 A1 - End Users and MoM handover inspection																				
Specialist installation																					
RAB-50-3240	050 A1 - Installation of Sanitaryware and Fixtures																				
Roof Finishes																					
RAB-50-3130	050 A1 - Leveling screed - 140m ²																				
RAB-50-3140	050 A1 - Waterproof membrane - 140m ²																				
RAB-50-3160	050 A1 - Top Screed - 140m ²																				
RAB-50-3180	050 A1 - Install Roof Tiles - 140m ²																				
RAB-50-3200	050 A1 - Install Railing - 49m																				
RAB-50-3210	050 A1 - Install Cat Ladder and Roof Access Hatch																				
RAB-50-3230	050 A1 - Installation of Aluminium Canopy																				
RAB-50-4370	050 A1 - Install Aluminium Cladding																				
RAB-50-3100	050 A1 - Install Skylights (8No)																				
External Finishes																					
RAB-50-3150	050 A1 - External Render (From Bldg 050 H2)																				
RAB-50-3120	050 A1 - Install External Louvers /Windows/Doors																				
RAB-50-3190	050 A1 - External Tiling																				
RAB-50-3220	050 A1 - External Painting																				
RAB-50-3250	050 A1 - Dismantle Scaffolding																				
RAB-50-3260	050 A1 - Make good external surfaces																				
Utilities and Drainage																					
RAB-50-7935	050 A1 - Construct Permanent Drainage and Manholes																				
RAB-50-7965	050 A1 - Install Fresh Water Mains																				
RAB-50-7945	050 A1 - Utilities and Common Telecom Ducting																				
RAB-50-7955	050 A1 - Install Flushing Water Mains																				
Testing & Commissioning																					
RAB-TC50-1020	050 A1 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BBE0																					
RAB-BEE-360	050 A1 - Registered Energy Assessor Inspection & Certification																				
RAB-BEE-370	050 A1 - Submit REA Certification to EDMS																				

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RAB-BEE-380	050 A1 - EDMS Issue of Cert of Compliance Registration (COCR)																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-394	050 A1 - Submit WWO 46 Pt. IV																				
RAB-WSD-404	050 A1 - WSD Inspection/Meter Connection																				
RAB-WSD-414	050 A1 - WSD Issue WWO 046 Part V, Plumbing Inst'n Compl & Wz																				
Fire Services Department (VAC)																					
RAB-FSD-1050	050 A1 - Submit Form 314																				
RAB-FSD-1060	050 A1 - Submit Form 501																				
Engineer (Aecom)																					
RAB-50-7400	050 A1 - Submit Building 050 A1 As Built Drawings to Engineer																				
Public Toilet (Portion A2)																					
Excavation																					
Raft																					
Structure																					
RAB-50-4080	050 A2 - Cure and Strip False/Formwork																				
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
RAB-50-4170	050 A2 - MEP 1st Fix																				
RAB-50-4420	050 A2 - Plastering/Rendering & Undercoat																				
RAB-KD12A10	KD12A - Projected achievement of Stage 12A of the Works																				
RAB-50-4410	050 A2 - Access for C3 Cabling Works																				
RAB-50-4400	050 A2 - Screeding																				
Degree 2																					
RAB-50-4440	050 A2 - Louver / Door Frame																				
RAB-50-4270	050 A2 - MEP 2nd Fix																				
RAB-KD12B10	KD12B - Projected achievement of Stage 12B of the Works																				
RAB-50-4480	050 A2 - Access for C3 Equip. Installation																				
RAB-50-4300	050 A2 - Power On																				
Degree 3																					
RAB-50-4390	050 A2 - Ceiling Frame																				
RAB-50-4280	050 A2 - MEP Final Fix																				
RAB-50-4430	050 A2 - Wall Finish																				
RAB-50-4450	050 A2 - Ceiling & Floor Finish																				
RAB-50-4290	050 A2 - Snagging and Remedials																				
RAB-50-4460	050 A2 - Door panel & Ironmongery																				
Specialist installation																					
RAB-50-4240	050 A2 - Installation of Sanitaryware and Fixtures																				
Roof Finishes																					
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-50-4230	050 A2 - Installation of Aluminium Canopy																				
RAB-50-4380	050 A2 - Install Aluminium Cladding																				
RAB-50-4100	050 A2 - Install Skylights (8No)																				
External Finishes																					

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RAB-50-4150	050 A2 - External Render																				
RAB-50-4120	050 A2 - Install External Louvers /Windows/Doors																				
RAB-50-4190	050 A2 - External Tiling																				
RAB-50-4220	050 A2 - External Painting																				
RAB-50-4250	050 A2 - Dismantle Scaffolding																				
RAB-50-4260	050 A2 - Make good external surfaces																				
Utilities and Drainage																					
RAB-50-7975	050 A2 - Construct Permanent Drainage and Manholes (Approx 20m																				
RAB-50-7985	050 A2 - Utilites and Common Telecom Ducting																				
RAB-50-7995	050 A2 - Install Flushing Water Mains																				
RAB-50-8005	050 A2 - Install Fresh Water Mains																				
Testing & Commissioning																					
RAB-TC50-1030	050 A2 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BBE0																					
RAB-BEE-390	050 A2 - Registered Energy Assessor Inspection & Certification																				
RAB-BEE-400	050 A2 - Submit REA Certification to EDMS																				
RAB-BEE-410	050 A2 - EDMS Issue of Cert of Compliance Registration (COCR)																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-124	050 A2 - Submit WWO 46 Pt. IV																				
RAB-WSD-134	050 A2 - WSD Inspection/Meter Connection for Building 050																				
Fire Services Department (VAC)																					
RAB-FSD-260	050 A2 - Submit Form 314																				
RAB-FSD-270	050 A2 - Submit Form 501																				
Engineer (AECOM)																					
RAB-50-7430	050 A2 - Submit Building 050 H1 As Built Drawings to Engineer																				
Building 053 - Outbound X-Ray Building																					
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																				
RAB-53-7895	053 - Frame for Wall Panel & Cladding, G/F																				
Degree 3 - G/F																					
RAB-53-0660	053 - Wall Tiling & Wall Painting Final Coat (2), G/F																				
RAB-53-0730	053 - MEP Final Fix, G/F																				

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RAB-53-8205	053 - Floor Painting & Tiling, G/F																				
RAB-53-7915	053 - Ceiling Plaster Board, G/F																				
RAB-53-0710	053 - Door Panel & Ironmongery, G/F																				
RAB-53-0700	053 - Glazing, G/F																				
First Floor																					
Degree 1 - 1/F																					
Degree 2 - 1/F																					
RAB-53-8035	053 - MEP 2nd Fix, 1/F																				
RAB-53-8045	053 - Projected Achievement of Stage 1B																				
RAB-53-8005	053 - Access to C3 equipment Installatrion***																				
RAB-53-8015	053 - Frame for Wall Panel & Cladding, 1/F																				
RAB-53-8065	053 - Power On, 1/F																				
Degree 3 - 1/F																					
RAB-53-8155	053 - Wall Tiling & Wall Painting Final Coat (2), 1/F																				
RAB-53-8105	053 - MEP Final Fix, 1/F																				
RAB-53-7985	053 - Ceiling Plaster Board Sub-Frame, 1/F																				
RAB-53-8185	053 - Early handover to End Users***																				
RAB-53-8215	053 - Floor Painting & Tiling, 1/F																				
RAB-53-7995	053 - Ceiling Plaster Board, 1/F																				
RAB-53-8085	053 - Door Panel & Ironmongery, 1/F																				
RAB-53-8075	053 - Glazing, 1/F																				
RAB-53-8125	053 - Snagging and Remedials, 1/F																				
RAB-53-8195	053 - MEP Balance of Works																				
RAB-53-8095	053 - Projected Achievement of Stage 1C, 1/F																				
External Finishes																					
External Facade																					
RAB-53-0440	053 - Install External Louvers /Windows/Doors																				
RAB-53-0500	053 - External Painting																				
RAB-53-0570	053 - Dismantle Scaffolding																				
RAB-53-0640	053 - Make good external surfaces																				
At Grade																					
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																				
Roof Finishes																					
RAB-53-0460	053 - Waterproof Membrane - (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																				
Spacialist Installations																					
RAB-53-0600	053 - Install Lift (1 nos)																				
Glazed Canopy																					
RAB-53-0620	053 - Construct high level Canopy at +9.95mPD																				
Utilities and Drainage																					
RAB-53-7595	053 - Construct Permanent Drainage and Manholes (Approx 135m)																				
RAB-53-7605	053 - Utilites and Common Telecom Ducting																				
RAB-53-7655	053 - Install FS Water Main																				
RAB-53-7610	053 - Install Flushing Water Mains																				

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RAB-53-7620	053 - Install Fresh Water Mains																				
Testing & Commissioning																					
RAB-TC53-1040	053 - T&C (HVAC, FS, P&D, OTHERS)																				
RAB-TC53-1050	053 - T&C, Lift																				
Statutory Submissions & Approvals (Day 470 Completion)																					
BBE0																					
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)																				
EMSD - Building 053 Lift Inspection																					
RAB-FSD-150	053 - Submit EMSD Form 5 (Completion of Lift Installation)																				
RAB-FSD-160	053 - EMSD Lift Inspection																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-100	053 - Submit WWO 46 Pt. IV																				
RAB-WSD-102	053 - WSD's Processing/Inspection/Meter Connection																				
RAB-WSD-104	053 - WSD Issue WWO 046 Part V, Plumbing Compl. Cert & Water																				
VAC																					
RAB-FSD-1140	053 - Submit Form 314																				
RAB-FSD-1150	053 - Submit Form 501																				
FSD																					
Commencement																					
Completion																					
RAB-FSD-410	053 - Submit WWO 46 Pt. I V																				
RAB-FSD-670	053 - Submit Form 501																				
RAB-FSD-420	053 - FSD Inspection Period																				
Engineer (AECOM)																					
RAB-53-7460	053 - Submit Building 053 As Built Drawings to Engineer																				
Building 058 - Outbound X-Ray Scan Tunnel																					
Excavation																					
Raft																					
Structure																					
Walls																					
South																					
North																					
Roof Slabs																					
Cure and Strip																					
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
Degree 2																					
RAB-58-0630	058 - MEP 2nd Fix																				
RAB-58-0640	058 - Power On																				
Degree 3																					
RAB-58-0650	058 - MEP Final Fix																				
RAB-58-0700	058 - Floor Finish (Epoxy Paint)																				
RAB-58-0710	058 - Door Panel (By other)																				
RAB-58-7520	058 - End Users and MoM handover inspection																				
RAB-58-0660	058 - Snagging and Remedials, Bldg. Internal																				
Roof Finishes																					
RAB-58-0510	058 - Install Roof Tiles - 885m²																				

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RAB-58-0540	058 - Install Railing - 152m																					
RAB-58-0530	058 - Install Cat Ladder and Roof Hatch																					
External Finishes																						
Facade																						
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																					
At Grade																						
Glazed Canopy																						
Utilities and Drainage																						
RAB-58-7590	058 - Install FS Water main																					
RAB-58-7570	058 - Install Flushing Water Mains																					
RAB-58-7580	058 - Install Fresh Water Mains																					
Testing & Commissioning																						
RAB-TC58-1060	058 - T&C (HVAC, FS, P&D, OTHERS)																					
Statutory Submissions & Approvals (Day 470 Completion)																						
BBE0																						
RAB-BEE-450	058 - Registered Energy Assessor Inspection & Certification																					
RAB-BEE-460	058 - Submit REA Certification to EDMS																					
RAB-BEE-470	058 - EDMS Issue of Cert of Compliance Registration (COCR)																					
VAC (FSD)																						
Commencement																						
Completion																						
RAB-FSD-0280	058 - Submit Form 314																					
RAB-FSD-370	058 - Submit Form 046 Part IV																					
RAB-FSD-500	058 - Submit Form 046 Part V																					
RAB-FSD-100	058 - Submit Form 501 to FSD																					
Engineer (AECOM)																						
RAB-58-7490	058 - Submit Building 058 As Built Drawings to Engineer																					
Building 059 - Inbound X-Ray Scan Tunnel																						
Excavation																						
Raft Foundations																						
Structure																						
Walls																						
West																						
East																						
Roof Slabs																						
Cure and Strip																						
ABWF/E&M																						
Internal Finishes																						
Degree 1																						
Degree 2																						
RAB-59-0630	059 - MEP 2nd Fix																					
RAB-59-0640	059 - Power On																					
Degree 3																						
RAB-59-0660	059 - MEP Final Fix																					
RAB-59-0700	059 - Floor Finish (Epoxy Paint)																					
RAB-59-7550	059 - End Users and MoM handover inspection																					
RAB-59-7560	059 - Snagging and Remedials																					
Roof Finishes																						
RAB-59-0540	059 - Install Roof Tiles - 885m²																					

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RAB-59-0560	059 - Install Railing - 152m																					
RAB-59-0550	059 - Install Cat Ladder and Roof Hatch																					
External Finishes																						
Facade																						
RAB-59-0480	059 - External Painting																					
RAB-59-0650	059 - Make good external surfaces																					
RAB-59-0590	059 - Dismantle Scaffolding																					
At Grade																						
RAB-59-6700	059 - Prepare Sub Grade																					
RAB-59-6690	059 - Laying Geo Textile																					
RAB-59-6710	059 - Lay Granular Sub-Base																					
RAB-59-6720	059 - Laying Course																					
RAB-59-6680	059 - Concrete Block Paving																					
RAB-59-0670	059 - Snagging and Remedials																					
Glazed Canopy																						
RAB-59-0610	059 - Construct high level glazed canopy at +13.406mPD North																					
RAB-59-0620	059 - Construct high level glazed canopy at +13.231mPD South																					
Utilities and Drainage																						
RAB-59-7370	059 - Install FS Water Main																					
RAB-59-7350	059 - Install Flushing Water Mains																					
RAB-59-7360	059 - Install Fresh Water Mains																					
Testing & Commissioning																						
RAB-TC59-1000	059 - T&C (HVAC, FS, P&D, OTHERS)																					
Statutory Submissions & Approvals (Day 470 Completion)																						
BBEO																						
RAB-BEE-480	059 - IRegistered Energy Assessor Inspection & Certification																					
RAB-BEE-490	059 - ISubmit REA Certification to EDMS																					
RAB-BEE-500	059 - IEDMS Issue of Cert of Compliance Registration (COCR)																					
VAC																						
RAB-FSD-550	059 - Submit Form 314																					
RAB-FSD-560	059 - Submit Form 501																					
Fire Services Department (FSD)																						
Commencement																						
Completion																						
Bldg. 059 Ready for FS Inspection (C8 Requirement)																						
RAB-FSD-530	059 - Submit Form WWO 46 Part IV																					
RAB-FSD-540	059 - Submit Form WWO 46 Part V																					
RAB-FSD-760	059 - Submit Form 501 to FSD for FS Inspection For Building 059																					
RAB-FSD-740	059 - FSD Inspection Period For Building 059																					
RAB-FSD-750	059 - Fire Certificate Obtained (Form 172) Handover For Building 059																					
Bldg. 059 for FS Inspection (Due to C3 Work Interface)																						
RAB-FSD-470	059 - Submit Form 501 to FSD for FS Inspection For Building 059																					
Engineer (AECOM)																						
RAB-59-7520	059 - Submit Building 059 As Built Drawings to Engineer																					
Bldg. 059 Ready for Engineer Inspection (C8 Requirement)																						
Bldg. 059 Ready for Engineer Inspection (Due to C3 Work Interface)																						

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		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Hong Kong-Zhuhai_Macao Bridge Hong Kong Boundary Crossing F		<p>22-Oct-17, Hong Kong-Zhuhai_Macao Bridge</p> <p>23-Jun-17, Site and Facility Inspection:</p> <p>24-Aug-17, Access Dates</p>																	
Key Dates																			
Interface Activities																			
Site and Facility Inspection																			
JS1200	Pre Site and Facility Inspection by Contractor at Location 4 - Deg2																		
JS1210	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2																		
JS1620	Pre Site and Facility Inspection by Contractor at Location 14 - Deg2																		
JS1630	Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2																		
JS1760	Pre Site and Facility Inspection by Contractor at Location 18 - Deg1																		
JS1770	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1																		
JS1780	Pre Site and Facility Inspection by Contractor at Location 18 - Deg2																		
JS1790	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2																		
Access Dates																			
AD1000	Location 1(PCB (001) Basement)-Deg1 (270d)																		
AD1010	Location 1(PCB (001) Basement)-Deg2 (380d)																		
AD1020	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d)																		
AD1030	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d)																		
AD1040	Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d)																		
AD1050	Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d)																		
AD1060	Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (330d)																		
AD1070	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d)																		
AD1080	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg1 (330d)																		
AD1090	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg2 (380d)																		
AD1130	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d)																		
AD1150	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14)																		
AD1170	Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d)																		
AD1190	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d)																		
AD1200	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room) - For Server installation - Deg2 (480d)																		
AD1220	Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d)																		
AD1240	Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)																		
AD1270	Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)																		
AD1290	Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)																		
AD1300	Location 8(Inbd Private Car Annex (025))-Deg1 (430d)																		
AD1310	Location 8(Inbd Private Car Annex (025))-Deg2 (580d)																		
AD1320	Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)																		
AD1330	Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d)																		
AD1340	Location 9(Outbd Private Car Annex (032))-Deg1 (520d)																		
AD1350	Location 9(Outbd Private Car Annex (032))-Deg2 (660d)																		
AD1360	Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)																		
AD1370	Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)																		
AD1501	Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d) Phase 2																		
AD1510	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1																		
AD1511	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2																		
AD1521	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2																		

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█ 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	2015			2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
AD1530	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 1																		
AD1531	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 2																		
AD1540	Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 1																		
AD1541	Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 2																		
AD1550	Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 1																		
AD1551	Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 2																		
AD1560	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 1																		
AD1561	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 2																		
AD1570	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 1																		
AD1571	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 2																		
AD1580	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 1																		
AD1581	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 2																		
AD1590	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 1																		
AD1591	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 2																		
AD1600	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 1																		
AD1601	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 2																		
AD1610	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 1																		
AD1611	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 2																		
AD1620	Location 13(Outbd Private Car Kiosks (030))-Deg1 (480d) Phase 1																		
AD1630	Location 13(Outbd Private Car Kiosks (030))-Deg2 (550d) Phase 1																		
AD1640	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (480d) Phase 1																		
AD1650	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (550d) Phase 1																		
AD1660	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg1 (610d)																		
AD1670	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg2 (680d)																		
AD1700	Location 16(Outbd Traffic Control Kiosk (101))-Deg1 (400d)																		
AD1710	Location 16(Outbd Traffic Control Kiosk (101))-Deg2 (480d)																		
AD1740	Location 18(Outbd Private Car Exam Bldg(024))-Deg1 (-)																		
AD1750	Location 18(Outbd Private Car Exam Bldg(024))-Deg2 (670d)																		
AD1780	(by C03) Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (0																		
AD1790	(by C03) (UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo C																		
AD1800	(by C03) (UUD2) between Inbd Cargo Exam Bldg North (037[N]) and Inbd Vehicle Cle																		
AD1810	(by C03) (UUD9.1) btw Inbd Cargo Exam Bldg S.(037[S]) & Inbd PC Exam Bldg(033) &																		
AD1820	(by C03) (UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear																		
AD1830	(by C03) (UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear																		
AD1840	(by C03) Underground Ducting (UUD3.1) between CUE to Outbd Cargo Exam Bldg (0																		
AD1850	(by C03) (UUD3.2) btw Outbd Car Exam Bldg (023) and Outbd PC Exam Bldg (024) a																		
AD1860	(byC03) (UUD4.1) between Outbd Private Car Exam Bldg (024) and Outbd Vehicle Cle																		
AD1870	(byC03) (UUD5) between Outbd Car Exam Bldg South (023[S]) and Outbd Vehicle Cle																		
AD1880	(by C03) Underground Ducting (UUD8) between CUE and Outbd PCA (032)																		
AD1910	(by C03) Inbound Vehicle Clearance Plaza																		
AD1920	(by C03) Outbound Vehicle Clearance Plaza																		

- Interfaces Provisions
- Mobilization Provisions
- WA4 Site Erection & Servicing

12-Aug-17, Interfaces Provisions

22-Oct-17, Mobilization Provisions

Programme No.: HZMB-DWP Data Date: 14-Aug-15		Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	Date	Revision	Checked	Approved
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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	Q1	Q2	Q3						
	Detailed Design Specification																											
	Construction Design and Management																											
	Supply/Manufacture Mock-up items																											
	Supply/Manufacture prototypes																											
	Software Design, Coding and Testing																											
	Coding																											
	Software System Inetgration																											
	Prototype & Software Simulation Tests																											
	Procurement - Phase 1 / Section I																											
	Supply/Manufacture products for FAT																											
	Factory Acceptance Test (FAT)																											
	Supply/Manufacture Equipment																											
	Delivery and Bench Acceptance Test for Phase 1/ Section I																											
	Installation - Phase 1 / Section I																											
	Location 1(PCB (001) Basement)																											
EM1920	L1(001)B/F - Cable Laying and termination at Location 1 and Location 2																											
	Location 1(PCB (001) ELV Room (Grid Line E3))																											
EM1940	L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																											
	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))																											
EM1960	L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																											
	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))																											
EM1080	L2(001)Heath Ctrl Rm - Cable Laying and termination at Location 1 and Location 2																											
EM1100	L2(001)Heath Ctrl Rm - Cable Splicing and Testing and Labeling																											
EM1120	L2(001)Health Ctrl Rm - Intercom and PA system Installation																											
EM1140	L2(001)Heath Ctrl Rm - Intercom and PA system tuning																											
	Location 2(PCB (001) First Floor Main Server Room)																											
EM1000	L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2																											
EM1020	L2(001)Main Server Rm - Cable Splicing and Testing and Labeling																											
EM1040	L2(001)Main Server Rm - AVCSS Network and Server Installation																											
EM1060	L2(001)Main Server Rm - AVCSS Network and Server Tuning																											
	Location 3(Inbd Cargo Exam Bldg (037) MDF Room)																											
	Location 3(Inbd Cargo Exam Bldg (037) ELV Room)																											
	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,141)																											
EM2020	L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a																											
EM2040	L3(037)Inspec Offices - Cable Splicing and Testing and Labeling																											
EM2060	L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation																											
EM2080	L3(037)Inspec Offices - VTS WS Installation																											
EM2100	L3(037)Inspec Offices - SURCON and WS Tuning																											
	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)																											
EM1160	L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a																											
EM1180	L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling																											
EM1200	L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55" TV Wall Installation																											
EM1220	L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning																											

01-Sep-17; Installation - Phase 1 / Section I
 22-Jun-17; Location:1(PCB (001);Basement)
 L1(001)B/F - Cable Laying and termination at Location
 22-Jun-17; Location:1(PCB (001);ELV Room (Grid Line
 L1(001)ELV Rm - Cable Laying and termination at Loca
 22-Jun-17; Location:2(PCB (001);Ground Floor ELV R
 L2(001)ELV Rm - Cable Laying and termination at Loca
 18-Aug-17; Location:2(PCB (001);Ground Floor DO
 L2(001)Heath Ctrl Rm - Cable Laying and termination
 L2(001)Heath Ctrl Rm - Cable Splicing and Testing and
 L2(001)Health Ctrl Rm - Intercom and PA system In
 L2(001)Health Ctrl Rm - Intercom and PA system tu
 21-Aug-17; Location:2(PCB (001); First Floor Main
 L2(001)Main Server Rm - Cable Laying and terminatio
 L2(001)Main Server Rm - Cable Splicing and Testing
 L2(001)Main Server Rm - AVCSS Network and Ser
 L2(001)Main Server Rm - AVCSS Network and Se
 07-Aug-17; Location:3(Inbd Cargo Exam Bldg (037)
 L3(037)Inspec Offices - Cable Laying and termination in
 L3(037)Inspec Offices - Cable Splicing and Testing and
 L3(037)Inspec Offices - AVCSS SURCON WS and 5
 L3(037)Inspec Offices - VTS WS Installation
 L3(037)Inspec Offices - SURCON and WS Tuning
 07-Aug-17; Location:3(Inbd Cargo Exam Bldg (037)
 L3(037)PLF Ctrl Rm - Cable Laying and termination in
 L3(037)PLF Ctrl Rm - Cable Splicing and Testing and
 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55
 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning

Programme No.: HZMB-DWP Data Date: 14-Aug-15	<ul style="list-style-type: none"> █ Actual Level of Effort █ Primary Baseline █ Actual Work █ Remaining Work █ Critical Remaining Work ◆ Baseline Milestone ◆ Milestone 	summary	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	<table border="1"> <thead> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>14-Nov-16</td> <td>Rev.: 0</td> <td>WC</td> <td>LC</td> </tr> <tr> <td>10-Mar-17</td> <td>Rev.: 1.0a</td> <td>WC</td> <td>LC</td> </tr> <tr> <td>5-May-17</td> <td>Rev.: 1.0b</td> <td>WC</td> <td>LC</td> </tr> </tbody> </table>	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
Date	Revision	Checked	Approved																	
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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
Outbd Vehicle Clearance Plaza - 8 nos VID, 6 nos VTS, 4 nos TLS		<ul style="list-style-type: none"> EM3160 Outbound VID cabling from pillar box to VID field equipment EM3180 Outbound VTS cabling from pillar box to VTS field equipment EM3200 Outbound TLS cabling from pillar box to TLS field equipment EM3220 Outbound VID field equipment installation (8 VID) EM3240 Outbound VTS field equipment installation (3 RFID + 3 Cameras) EM3260 Outbound TLS field equipment installation (4 TLS) EM3280 Outbound VID and VTS and TLS field equipment tuning 																	
Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (037)		<ul style="list-style-type: none"> UD1000 (UUD1.1 [CUE-037]) - Cable laying and termination 																	
(UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo Clearance Bldg (037[S])		<ul style="list-style-type: none"> UD1060 (UUD1.2 [037[S]-043]) - Cable laying and termination 																	
Underground Ducting (UUD6) between CUE and Shuttle Bus Kiosk (006) and Inbd Private Car Exam Bldg (033)		<ul style="list-style-type: none"> UD1040 (UUD9.1 [037[S]-033-100] - Cable laying and termination 																	
(UUD9.1) btw IB Cargo Exam Bldg South(037[S]) & IB PC Exam Bldg(033) & IB Traffic Control Bldg (033)		<ul style="list-style-type: none"> UD1010 (UUD2 [037[N]-IB VCP]) - Cable laying and termination 																	
(UUD2) between Inbd Cargo Exam Bldg North (037[N]) to Inbd VCP		<ul style="list-style-type: none"> UD1070 (UUD9.3 [033-IB VCP[W]]) - Cable laying and termination 																	
(UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1020 (UUD9.2 [033-IB VCP[E]]) - Cable laying and termination 																	
(UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1030 (UUD3.1 [CUE-023]) - Cable laying and termination 																	
Underground Ducting (UUD7) between PCB(001) and Inbd Coach Kiosks(010)		<ul style="list-style-type: none"> UD1050 (UUD3.2 [023-024-101]) - Cable laying and termination 																	
(UUD3.2) btw OB Car Exam Bldg(023) & OB PC Exam Bldg(024) & OB Traffic Control Bldg (023)		<ul style="list-style-type: none"> UD1100 (UUD8 [CUE-032]) - Cable laying and termination 																	
Underground Ducting (UUD8) between CUE and Outbd PCA (032)		<ul style="list-style-type: none"> UD1080 (UUD4.1 [024-OB VCP]) - Cable laying and termination 																	
(UUD4.1) between Outbd PC Exam Bldg (024) and Outbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-OB VCP]) - Cable laying and termination 																	
(UUD5) between Outbd Car Exam Bldg (023[S]) and Outbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-OB VCP]) - Cable laying and termination 																	
Initial On-Site Test and Commissioning / Pre-SAT (Phase 1 / Section I)																			
Site Acceptance Test (Phase 1 / Section I)																			
Security Risk Assessment and Audit																			
Operability Period Test (Phase 1 / Section I)																			
Completion (Phase 1 /Section I)																			
Training and Document (Phase 1 /Section I)																			
Operation (Phase 1 /Section I)																			
Engineering Support for Phase 1 / Section I																			
Procurement - Phase 2 / Section II																			
Delivery and Bench Acceptance Test for Phase 2/Section II																			
Installation - Phase 2 / Section II		<ul style="list-style-type: none"> 30-Aug-17: Installation -Phase 2/ Section II 																	

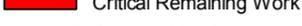
Programme No.: HZMB-DWP Data Date: 14-Aug-15		Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	Date	Revision	Checked	Approved
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Activity ID	Activity Name	2015			2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Location 8(Inbd Private Car Annex (025)) (Phase 2)		▼ 30-Aug-17; Location 8(Inbd Private Car Annex (025)) (Phase 2)																	
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																	
Location 9(Outbd Private Car Annex (032)) (Phase 2)		▼ 30-Aug-17; Location 9(Outbd Private Car Annex (032)) (Phase 2)																	
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																	
Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)																			
Site Acceptance Test (Phase 2 / Section II)																			
Operability Period Test (Phase 2 / Section II)																			
Completion (Phase 2 / Section II)																			
Engineering Support for Phase 2 / Section II																			
Procurement for Phase2 / Section III																			
Delivery and Bench Acceptance Test for Phase2 / Section III																			
Installation - Phase 2 / Section III		▼ 09-Oct-17; Installation - Phase 2/ Section III																	
Location 10,11,12,13 (Vehicle Clearance Kiosks)		▼ 09-Oct-17; Location 10,11,12,13 (Vehicle Clearance Kiosks)																	
Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)		▼ 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)																	
Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)		▼ 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																	
Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)		▼ 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)																	
Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)																			
Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)		▼ 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																	
Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)		▼ 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																	
Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1																			
Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2																			
Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)																			

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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	
	Site Acceptance Test (Phase 2 / Section III)																			
	Operability Period Test (Phase 2 / Section III)																			
	Completion (Phase 2 / Section III)																			
	Operation (Phase 2 / Section III)																			
	Defect Liability Period (DLP)																			
	Document Submission (Phase 2 / Section III)																			

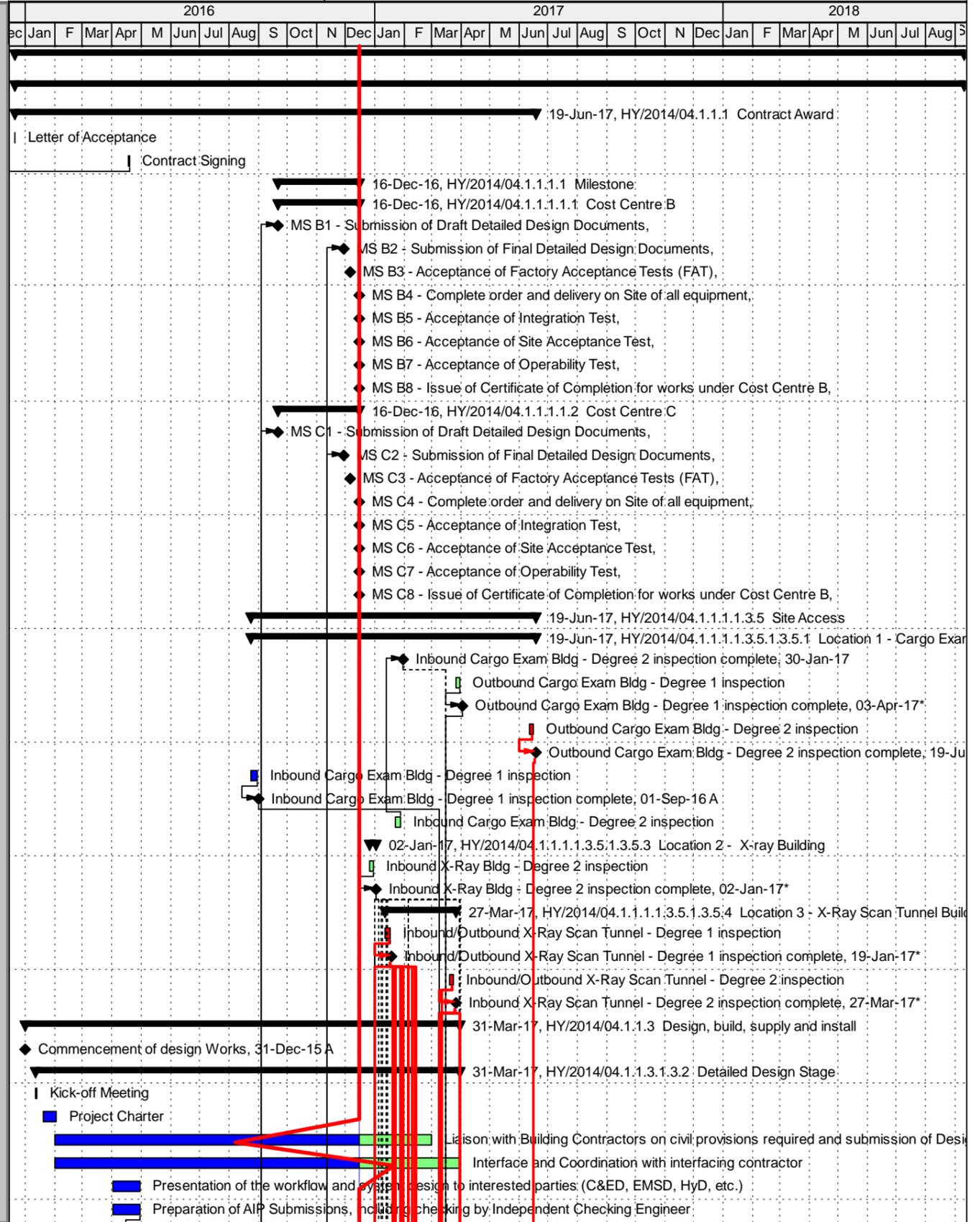
Programme No.: HZMB-DWP
Data Date: 14-Aug-15

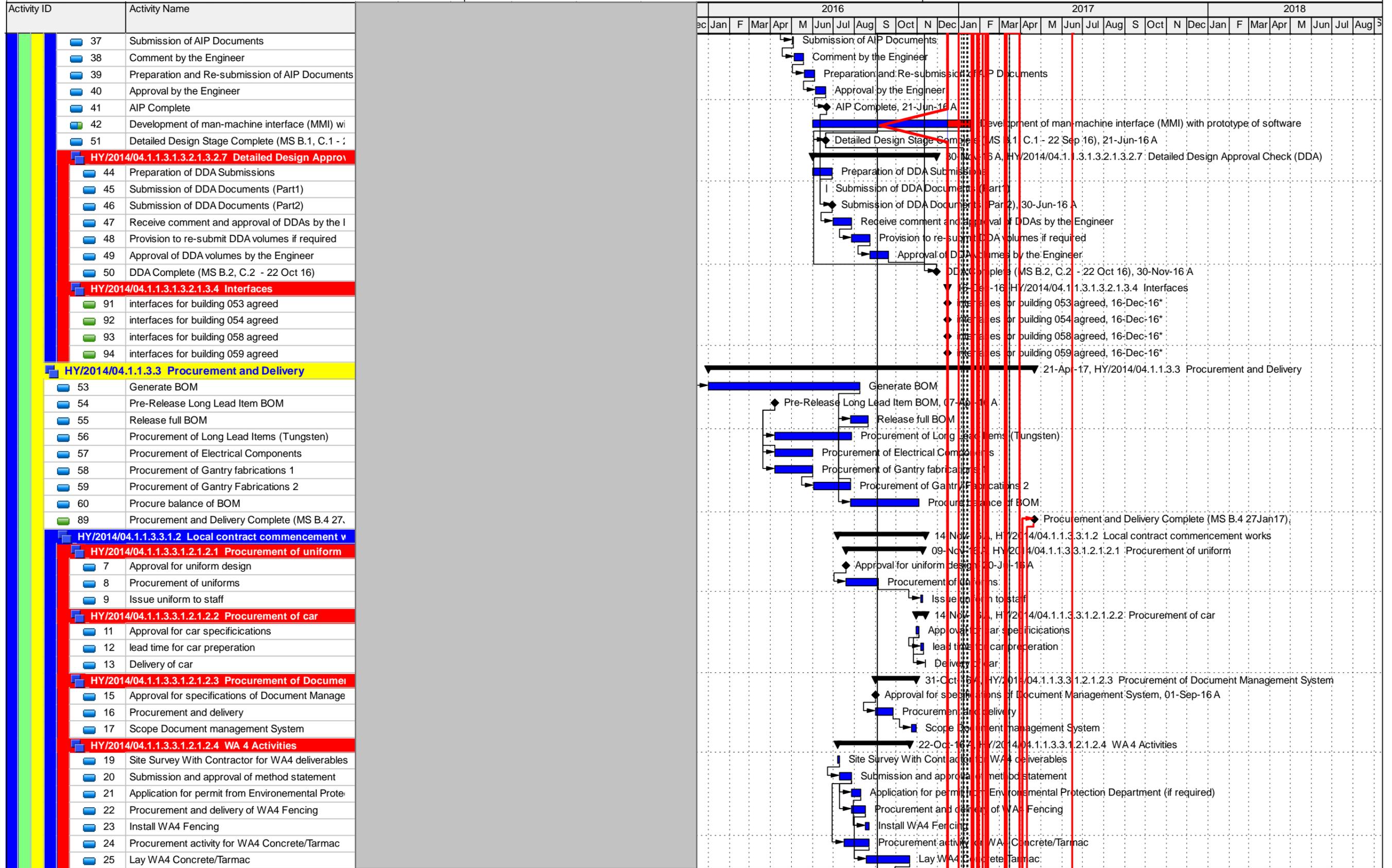
-  Actual Level of Effort
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-  Remaining Work
-  Critical Remaining Work
-  Baseline Milestone
-  Milestone

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Facilities - Automatic Vehicle
Clearance Support System (AVCSS)

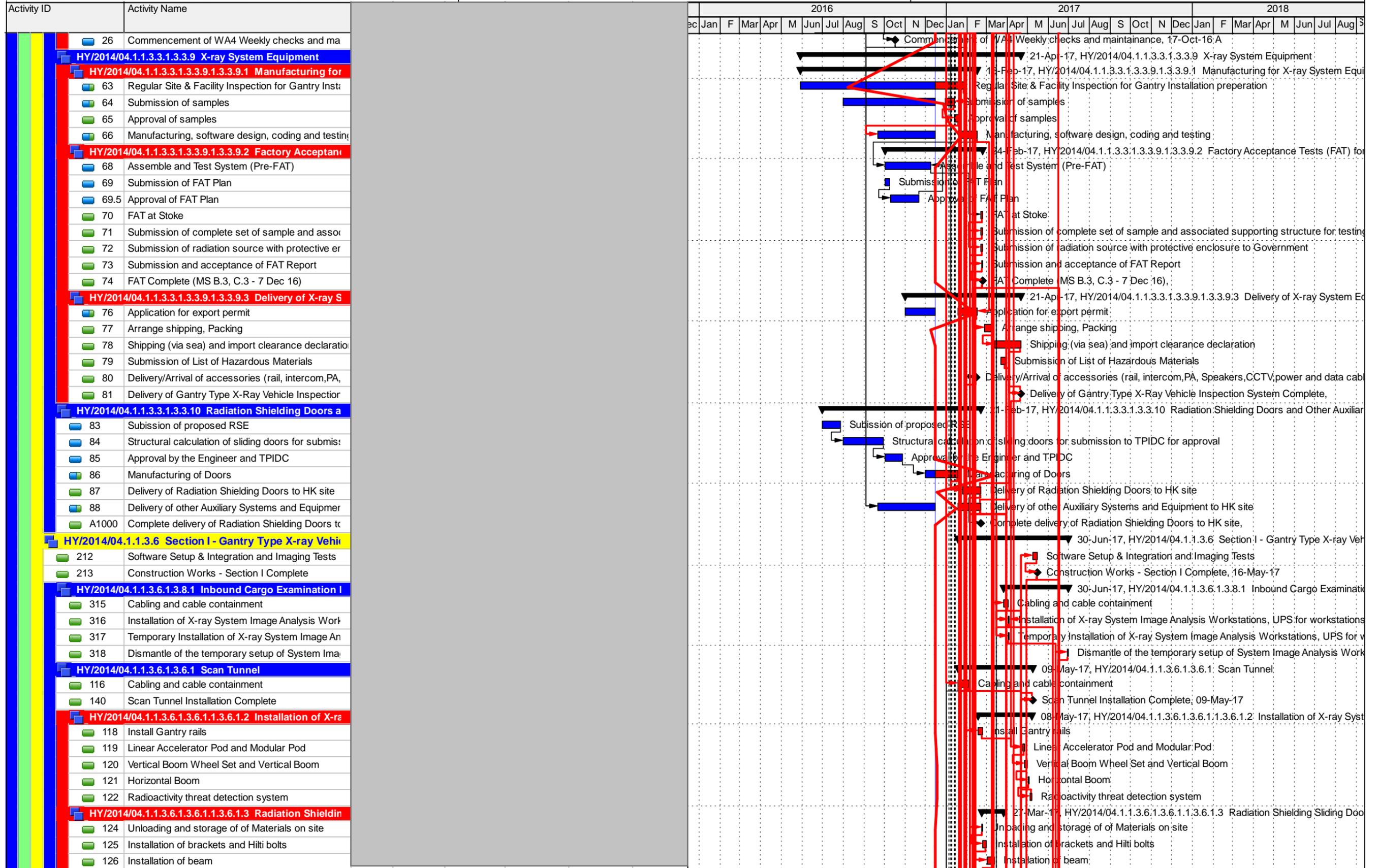
Date	Revision	Checked	Approved
14-Nov-16	Rev.: 0	WC	LC
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name
HY/2014/04 Hong Kong-Zhuhai-Macao Bridge	
HY/2014/04.1 Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge	
HY/2014/04.1.1.1 Contract Award	
3	Letter of Acceptance
4	Contract Signing
HY/2014/04.1.1.1.1 Milestone	
HY/2014/04.1.1.1.1.1 Cost Centre 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
HY/2014/04.1.1.1.1.2 Cost Centre C	
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
HY/2014/04.1.1.1.3.5 Site Access	
HY/2014/04.1.1.1.3.5.1.3.5.1 Location 1 - Cargo Exam Bldg - Degree 2 inspection	
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
HY/2014/04.1.1.1.3.5.1.3.5.3 Location 2 - X-ray Building	
107	Inbound X-Ray Bldg - Degree 2 inspection
108	Inbound X-Ray Bldg - Degree 2 inspection complete
HY/2014/04.1.1.1.3.5.1.3.5.4 Location 3 - X-Ray Scan Tunnel	
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
HY/2014/04.1.1.3 Design, build, supply and install	
28	Commencement of design Works
HY/2014/04.1.1.3.1.3.2 Detailed Design Stage	
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



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



APPENDIX D

Event and Action Plan

Event/Action Plan for Air Quality

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

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

Event / Action Plan for Construction Noise Monitoring

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



APPENDIX E

Implementation Schedule for Environmental Mitigation Measures (EMIS)

**Contract No. HY/2014/05 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities
Implementation Schedule for Environmental Mitigation Measures**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality								
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ 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"> • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ 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"> • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ 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"> Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ 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"> Air Pollution Control (Construction Dust) Regulation To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively) 	√ The (The dust monitoring at AMS6 under EM&A Programme for the Contract is covered by Contract No. HY/2011/03 while the dust monitoring at AMS7 under EM&A Programme for the Contract is covered by Contract No. HY/2013/01.)

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"> • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body. 	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> • Air Pollution Control (Construction Dust) Regulation • To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are $500 \mu\text{g}\text{m}^{-3}$ and $260 \mu\text{g}\text{m}^{-3}$, respectively) 	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"> • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points. 	Control construction dust	Contractor	All construction sites	Construction stage	Air Pollution Control (Construction Dust) Regulation	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Air borne)								
S6.4.10	N1	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	√
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m ²), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 75dB(A) for residential premises The movable barrier should achieve at least 5dB(A) and the full enclosure should be 	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance & its TM Annex 5, TM-EIA 	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 	√
/	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 75dB(A) for residential premises 	√ The (The noise monitoring at NMS2 and NMS3B under EM&A programme for the Contract are covered by Contract No. HY/2013/01.)
Sediment								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	<ul style="list-style-type: none"> Waste Disposal Ordinance ETW B TC 34/2002 	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Waste Management (Construction Waste)								
S8.3.8	WM1	<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"> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETW BTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETW BTC 19/2005 	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S8.3.9- S8.3.11	WM2	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TC 19/2005 	√
S8.2.12- S8.3.15	WM3	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	√

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Water Quality (Construction Phase)								
S.9.11.1.7	W2	<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"> • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; 	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S9.11.1.7	W2	<ul style="list-style-type: none"> • all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system. 	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)								
S10.7	E4	<ul style="list-style-type: none"> Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater 	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	√
S10.7	E5	<ul style="list-style-type: none"> Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time 	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction		√
S10.7	E8	<ul style="list-style-type: none"> Control vessel speed Skipper training Predefined and regular routes for working vessels; avoid Brother Islands. 	Minimise marine traffic disturbance on dolphins	Contractor	Marine Traffic	During construction		N/A
Fisheries								
S11.7	F4	<ul style="list-style-type: none"> Maritime Oil Spill Response Plan (MOSRP); Contingency plan. 	Minimise impacts on marine water quality impacts	Marine Department	HKBCF	During operation		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Detailed Design Phase)								
S14.3.3.1	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> • Roadside planting and planting along the edge of the HKBCF Island is proposed; • Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations; • Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; • For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and • Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF. 	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
<i>Landscape & 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
EM&A								
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites		<ul style="list-style-type: none"> EIAO Guidance Note No.4/2002 TM-EIAO 	√
S15.5 - S15.6	EM2	<ol style="list-style-type: none"> 1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. 	Perform environmental monitoring & auditing	Contractor	All construction sites		<ul style="list-style-type: none"> EIAO Guidance Note No.4/2002 TM-EIAO 	√

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



APPENDIX F

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 4, 13, 18, and 25 September 2017, 3, 11, 16, 23 and 30 October 2017 and 6, 15, 20 and 27 November 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
For Contract No. HY/2014/05			
28 August 2017	<ol style="list-style-type: none"> General refuse and stagnant water were observed at Building 023. No drip tray was provided for chemical containers outside Building 023. 	<ol style="list-style-type: none"> The general refuse and the stagnant water was cleared at Building 023. A drip tray was provided for the chemical containers outside Building 023. 	4 September 2017
4 September 2017	<ol style="list-style-type: none"> A stock of more than 20 bags of cement were not covered at Building 023. No drip tray was provided for a chemical container outside Building 023. 	<ol style="list-style-type: none"> The stock of more than 20 bags of cement at Building 023 was removed. The chemical container outside Building 023 was removed. 	13 September 2017
13 September 2017	<ol style="list-style-type: none"> Stagnant water was accumulated inside a drip tray for the chemical container outside Building 025. 	<ol style="list-style-type: none"> The stagnant water accumulated inside the drip tray for the chemical container outside Building 025 was cleared. 	18 September 2017
18 September 2017	<ol style="list-style-type: none"> A stock of more than 20 bags of cement was not covered properly outside Building 025. No proper chemical labels and drip tray were provided for chemical containers outside Building 044. 	<ol style="list-style-type: none"> The stock of cement bags outside Building 025 was covered entirely. The chemical containers outside Building 044 were removed. 	25 September 2017



25 September 2017	<ol style="list-style-type: none"> 1. The opened cement bags were not covered at Building 022. 2. The cement packages were scattered around the room at Building 022. 3. No proper label and drip tray were provided for a chemical container outside Building 022. 	<ol style="list-style-type: none"> 1. The Contractor was reminded to cover the opened cement bags properly at Building 022. 2. The Contractor was reminded to tidy up the site at Building 022. 3. The Contractor was reminded to provide proper chemical labels and drip tray for the chemical containers at Building 022. 	3 October 2017
3 October 2017	<ol style="list-style-type: none"> 1. A stock of more than 20 bags of cement were not covered at Building 022. 2. No proper label and drip tray were provided for chemical containers outside Building 044. 3. Stagnant water was accumulated at the drip tray for an oil/ fuel drum outside Building 022. 	<ol style="list-style-type: none"> 1. The stock of more than 20 bags of cement at Building 022 were removed. 2. The chemical container outside Building 044 was removed. 3. The stagnant water accumulated at the drip tray outside Building 022 was cleared. 	11 October 2017
11 October 2017	<ol style="list-style-type: none"> 1. Cement bags were not covered properly outside Building 025 and Building 053. 2. No drip tray was provided for chemical containers outside Building 023 and Building 025. 	<ol style="list-style-type: none"> 1. The cement bags outside Building 025 and Building 053 were covered and removed. 2. The chemical containers outside Building 023 and Building 025 were removed. 	16 October 2017
16 October 2017	<ol style="list-style-type: none"> 1. General refuses were scattered outside Building 045. 2. Stagnant water was accumulated at Building 044 and Building 045. 	<ol style="list-style-type: none"> 1. General refuses outside Building 045 were cleared. 2. The stagnant water accumulated at Building 044 and Building 045 was cleared. 	23 October 2017
23 October 2017	<ol style="list-style-type: none"> 1. Stocks of more than 20 bags of cement were not covered properly outside Building 044. 2. No drip tray was provided for chemical containers outside Building 044. 	<ol style="list-style-type: none"> 1. The stocks of more than 20 bags of cement outside Building 044 were removed. 2. The chemical containers outside Building 044 were removed. 	30 October 2017



30 October 2017	<ol style="list-style-type: none"> 1. A stock of more than 20 bags of cement was not covered properly at Building 045. 2. No drip tray was provided for chemical containers outside Building 045. 	<ol style="list-style-type: none"> 1. The Contractor was reminded to cover the cement bags properly. 2. The Contractor was reminded to provide drip tray for the chemical containers. 	6 November 2017
6 November 2017	<ol style="list-style-type: none"> 1. A stock of more than 20 bags of cement were not covered properly outside Building 023 and Building 025. 	<ol style="list-style-type: none"> 1. The cement bags were removed at Building 023. The cement bags were covered entirely at Building 025. 	15 November 2017
15 November 2017	<ol style="list-style-type: none"> 1. Oil stained soil was observed near Building 023. 2. NRMM label for the excavator is missing (Building 023). 	<ol style="list-style-type: none"> 1. The oil stained soil near Building 023 was cleared. 2. The NRMM label was provided for the excavator at Building 023. 	20 November 2017
20 November 2017	<ol style="list-style-type: none"> 1. Refuses were observed outside Building 044. 	<ol style="list-style-type: none"> 1. General refuses outside Building 044 were cleared. 	27 November 2017
27 November 2017	<ol style="list-style-type: none"> 1. A stock of more than 20 bags of dusty materials was not covered at Building 045. 2. No drip tray was provided for chemical containers at Building 023. 	<ol style="list-style-type: none"> 1. The Contractor was reminded to cover the cement bags properly. 2. The Contractor was reminded to provide drip tray for the chemical containers. 	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in December 2017.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area			
4 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
13 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
16 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
23 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
30 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
6 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
15 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
20 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
27 November 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
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area			
4 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
13 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 September 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
16 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
23 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
30 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
6 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
15 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
20 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
27 November 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.



APPENDIX G

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 ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	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	0.071	0.071	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.465
October	0.166	0.141	0.025	0.000	0.141	0.416	0.000	0.000	0.000	0.000	0.448
November	0.425	0.165	0.260	0.000	0.165	0.000	0.000	0.000	0.000	0.000	0.427
December											
Total	3.855	0.754	3.101	0.000	0.754	0.416	5.840	0.000	0.000	0.000	3.790

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

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

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

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

Notes: (1) The performance target are given in PS Clause 6(14)

(2) The waste flow table shall also include C&D materials that are not specified in the Contract to be imported for use at the Site

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

(4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³.

(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/m³; soil = 2.0 tonnes/m³

excavated: rock = 2.0 tonnes/m³; soil = 1.8 tonnes/m³; broken concrete and bitumen = 2.4 tonnes/m³

C&D Waste = 0.9 tonnes/m³; bentonite slurry = 2.8 tonnes/m³

(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 / 墮性廢物 (in tonnes) (see Note 1)						Non-inert C&D Waste disposal 非墮性廢物 (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.) 墮性廢物 (如泥, 石, 磚, 瓦, 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	
August	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	
September	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	0.000	0.000	0.000	0.000	0.000	0.000	
October	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	
November	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	
December																				
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.055	0.025	0.025	0.000	0.000	0.004	0.004	0.000	0.000	0.000	0.055	0.055	

Notes: (1) The quantities 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⁻³.



APPENDIX H

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 to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge 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 to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge 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 to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 15	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 16	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						
5	All Areas	30 Dec 15	RABF-LTR- EPD-000001	Notification that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	06 Jan 16	N/A	EPD	-
6	All Areas	04 Jan 16	RABF-LTR- EPD-000002	Registration as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at RABF area	WPN 5213-951-L2846-02	19 Feb 16	N/A	EPD	-
7	All Areas	25 Jan 16	RABF-LTR- EPD-000003	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0106-16	11 Feb 16	10 Aug 16	EPD	Superseded by GW-RS0476-16
8	All Areas	08 May 16	RABF-LTR- EPD-000012	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0476-16	19 May 16	18 Nov 16	EPD	Superseded by GW-RS0666-16

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

								Date: November 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							
9	All Areas	16 Jun 16	RABF-LTR- EPD-000015	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0666-16	04 Jul 16	03 Jan 17	EPD	Superseded by GW-RS0907-16	
10	All Areas	18 Aug 16	RABF-LTR- EPD-000018	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0907-16	01 Sep 16	28 Feb 17	EPD	Superseded by GW-RS1195-16	
11	All Areas	16 Nov 16	RABF-LTR-EPD-000020	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1195-16	30 Nov 16	29 May 17	EPD	Superseded by GW-RS1315-16	
12	All Areas	08 Dec 16	RABF-LTR-EPD-000023	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1315-16	22 Dec 16	21 Jun 17	EPD	Superseded by GW-RS0131-17	

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

								Date: November 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								
13	WA3	13 Jan 17	RABF-LTR-EPD-000026	CNP 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 17	26 Jul 17	EPD	Superseded by GW-RS0626-17		
14	All areas	03 Feb 17	RABF-LTR-EPD-000028	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0131-17	17 Feb 17	16 Aug 17	EPD	Superseded by GW-RS0306-17		
15	All areas	20 Mar 17	RABF-LTR-EPD-000035	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0306-17	05 Apr 17	02 Oct 17	EPD	Superseded by GW-RS0435-17		
16	All areas	05 May 17	RABF-LTR-EPD-000036	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0435-17	20 May 17	16 Nov 17	EPD	Superseded by GW-RS0710-17		

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

								Date: November 2017		Remark
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office		
	Work Area	Date	Reference							
17	WA3	28 Jun 17	RABF-LTR-EPD-000041	CNP 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 17	26 Jan 18	EPD	-	
18	All areas	03 Aug 17	RABF-LTR-EPD-000042	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0710-17	21 Aug 17	16 Feb 18	EPD	-	



Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2013/06 – Hong Kong Zhuhai and Macao Bridge - HKBCF – Automatic Vehicle Clearance Support System

Date: 30 November 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	HZMB-HK Boundary Crossing Facilities	31 July 2015	WFG14980	Disposal of Construction Waste Billing Account	7023015	20 August 2015	--	EPD	
2	HZMB-HK Boundary Crossing Facilities	4 May 2017	CNP-GW416290	Construction Noise Permit	GW-RS0452-17	1 June 2017	30 Nov 2017	EPD	

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: November 2017									Remark
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	
	Work Area	Date	Reference						
1	All Areas	23 Aug 2016	N/A	<u>Billing Account</u> for disposal of construction waste	7025930	20 Sep 2016	N/A	EPD	
2	Building 058,059	27 Jul 2017	N/A	Construction Noise Permit(CNP)	GW-RS0640-17	6 Aug 2017	4 Feb 2018	EPD	



APPENDIX I

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	6	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.</p> <p>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.
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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: "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>	<p>Based on the Contractor information, the construction work at Buildings 044 and 045 are 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 the guideline to remind the site vehicles should travel within speed limit of 8 km/hr. As confirmed by the Contractor, the road access management adjacent 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. Based on the investigation results, it is found that the nuisance of dust emission from the transportation near Buildings 044 and 045 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.
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005	27 October 2017	Water Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 27 October 2017, it was noted that EPD had received a complaint regarding a water quality at C3 area. The complaint content as extracted below: "珠澳大橋人工島地盤投訴黃泥水落海，情況持續了一個星期，詳細發生地點是人工島的 C3 位置，他要求跟進及回覆。"</p>	<p>According to the observation of weekly site inspections (3, 11, 16, 23 and 30 October 2017 and 6 November 2017) and confirmed by the Contractor, the wastewater generated from construction site is treated and reused in the site area. No site runoff within the Contract site was observed. Based on the investigation results, it is found that the complaint is not related to Contract No. HY/2014/05. No follow up action is required.</p>	Closed
006	23 November 2017	Air Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 23 November 2017, it was noted that EPD had received a complaint regarding dust emission from HZMB construction site. The complaint content as extracted below: "港珠澳大橋 人工島地盤，由於不是每處都灑水，引致大量塵埃，近收費亭最嚴重"</p>	<p>Based on the Contractor information, the construction work on 23 November 2017 were: Architectural Builders Works and Finishes (ABWF) & Mechanical, Electrical, and Plumbing (MEP) works (Internal) of Buildings 022, 023, 025, 032, 044, 045, 050A1, 050A2, 050H1, 050H2; and Utilities and Drainage installation of Buildings 021, 022, 023, 025, 044 and 045. No dusty activities are included in the above works. According to site inspection which conducted on 6, 15 and 20 November 2017, no dusty activities and dry condition in haul road were observed. Based on the investigation results, it is found that the nuisance of dust emission from haul road 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



APPENDIX J

Investigation Report

Contract No. HY/2014/05 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 20171128_Air_24hr_v1

Date of Investigation Report: 13 December 2017

Date of Environmental Quality Limit Exceedance: 28 November 2017 and the results were issued on 6 December 2017

Monitoring Location: AMS3B – Site Boundary of Site Office Area at Work Area WA2 (The air quality monitoring station for the Contract is covered by Contract No. HY/2013/01 HZMB HKBCF – Passenger Clearance Building)

Monitoring Date: 28 November 2017 **Start Time:** 08:00

Action & Limit Level (AL & LL) / Measured Level:

PARAMETER	STATION	AL ($\mu\text{g}/\text{m}^3$)	LL ($\mu\text{g}/\text{m}^3$)	MEASURED LEVEL, $\mu\text{g}/\text{m}^3$
24-hr TSP	AMS3B – Site Boundary of Site Office Area at Works Area WA2	167	260	168

Notes: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action / Limit Level Non-compliance:

On 28 November 2017, one AL exceedance of 24-hr TSP at AMS3B was recorded.

Based on the information from the Contractor, the construction works undertaken on 28 and 29 November 2017 are shown as below:

- ABWF & MEP works (Internal) of Buildings 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058
- ABWF works (external) of Buildings 021, 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058
- ABWF works (roof) of Buildings 021, 022, 023, 032, 044, 050H1, 050H2, 050A1, 050A2, 053
- Utilities and Drainage installation of Buildings 023, 025, 032, 045, 050H1, 050H2, 050A1
- Construction of Planter Box and Ramp of Building 023

The Contractor confirmed that the mitigation measures according to Water Spraying Plan in November 2017 (Appendix A) are implemented to avoid dust emission. Photos of haul road condition and dust suppression are included in Appendix A. The Contractor has provided the guideline to remind the site vehicles travel within speed limit of 8km/hr. According to site inspection which conducted on 6, 15, 20 and 27 November 2017, no dusty activities and dry condition in haul road were observed.

The Air Quality Health Index (AQHI) of Tung Chung station with the wind data from the on-site wind station are shown in Appendix B. The hourly AQHI of Tung Chung station ranged 3 to 8 (Low to Very High) on 28 and 29 November 2017 during monitoring period. According to the wind data at on-site wind station, no prevailing wind direction was found in the monitoring period. The RABF site of HKBCF is far away from AMS3B (more than 1km). No potential dust source was observed near the monitoring station at AMS3B during the monitoring period.

Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

The Water Spraying Plan including the information of watering schedule, routing of trucks of 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.

Prepared by: Ruby Law Title: Environmental Team Representative

Signature:  Date: 13 December 2017

Checked by: Keith Chau Title: Environmental Team Leader

Signature:  Date: 13 December 2017

Copied to : Contractor, Engineer Representative and IEC/ENPO



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

Watering Plan for November 2017

Water Truck License Plate Number: PJ9039, SE4312

Capacity of a Water Truck: 15000L

Volume of water/ distance needed to water spraying: = 7.3 L/m

Water Truck could spray 15000L in one 59 minutes trip.

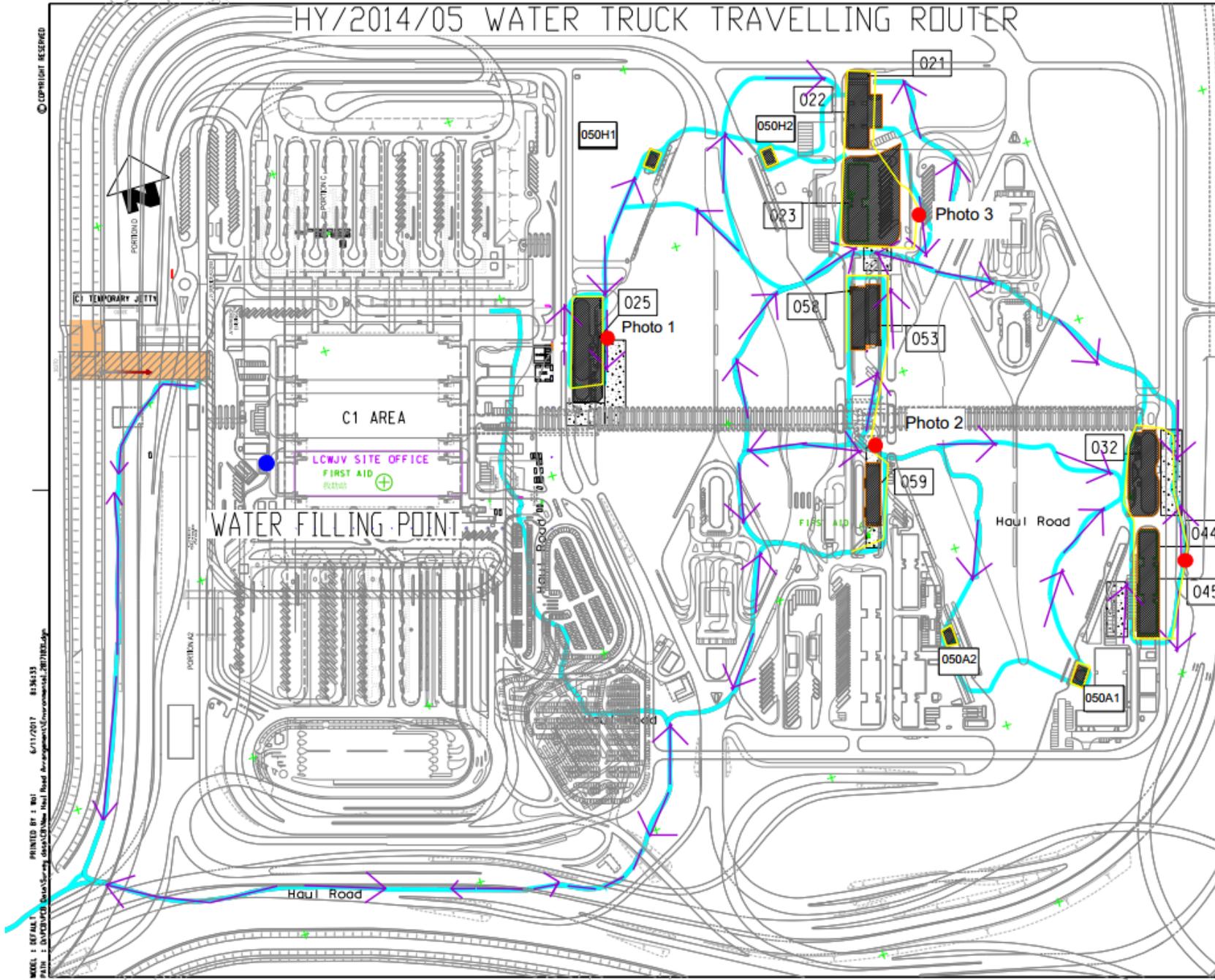
Planned Schedule of Watering Spraying by Water Truck

Cycle	Truck No.	Time of water spraying
1	PJ9039	08:00 – 09:15
2	SE4312	09:15 – 10:30
3	PJ9039	10:30 – 11:45
4	SE4312	13:00 – 14:15
5	PJ9039	14:15 – 15:30
6	SE4312	15:30 – 16:45
7	PJ9039	16:45 – 18:00
8	SE4312	18:00 – 19:00

HY/2014/05 WATER TRUCK TRAVELLING ROUTER

LEGEND

- WATER FILLING POINT
- WORKING SPACE
- TRAVEL ROUTE
- ROAD WITH WATER SPRAYING BY HY/2014/05
- HAUL ROAD OF HBCF
- Metering Photo taken location



No.	Date	Rev.	Description	Drawn	Appr.

Client: **TRANSPORT DEPARTMENT**
 運輸署
 HONG KONG ROADWORKS DEPARTMENT
 香港道路工程處
 HONG KONG BRIDGE MANAGEMENT OFFICE
 香港橋樑管理處

Contractor: **LEIGHTON CHUN WO**
 俊和
 Leighton - Chun Wo
 Joint Venture

Project Title: **CONTRACT NO. HY/2014/05
 HONG KONG - ZHUHAI - MACAO BRIDGE
 HONG KONG BOUNDARY CROSSING FACILITIES -
 REMAINING ANCILLARY BUILDINGS AND FACILITIES**

Drawing Title: _____

Design By	Approved By
Check By	Drawn By
Scale @	Date
Drawing No.	

MODEL & DETAILS PRINTED BY: RBT 6/11/2017 8:36:33
 PATH: E:\PROJECTS\2014\HY\2014\05\Haul Road Arrangement\Environmental\201702.dwg
 COPYRIGHT RESERVED

Water spraying record during TSP 24-hr monitoring on 28 and 29 November 2017

Photo 1



Photo 2



Photo 3



Photo 4



Appendix B

Date	Hour	AQHI at Tung Chung Station	Average Wind Speed (m/s) #	Average Wind Direction #
2017/11/28	8	3	0	---
2017/11/28	9	3	0	---
2017/11/28	10	3	0	---
2017/11/28	11	4	0	---
2017/11/28	12	4	0	E
2017/11/28	13	4	0	---
2017/11/28	14	5	0	---
2017/11/28	15	5	0	---
2017/11/28	16	7	0	WNW
2017/11/28	17	5 [^]	0	---
2017/11/28	18	6 [^]	0	---
2017/11/28	19	8	0	---
2017/11/28	20	7	0	E
2017/11/28	21	6	0	---
2017/11/28	22	6	0	---
2017/11/28	23	6	0	---
2017/11/29	0	5	0	---
2017/11/29	1	5	0	---
2017/11/29	2	4	0	---
2017/11/29	3	4	0	---
2017/11/29	4	4	0	---
2017/11/29	5	3 [^]	0	---
2017/11/29	6	3 [^]	0	SSE
2017/11/29	7	3	0	SSE
2017/11/29	8	3	0.4	ENE

Remark:

[^] The data collection for calculation of AQHI was affected due to station or equipment maintenance, the data of a most similar station was adopted.

#- The related wind data is obtained from the on-site wind station.

N.A. - Not available.