SNC·LAVALIN

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Your ref.
Our ref. 5140819/18.30/OC075/KC/RL
Date: 10 October 2019

By Post and e-mail (Ian.kerswill@lcwjv.com)

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

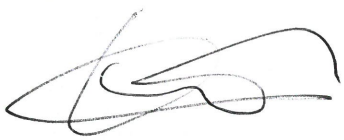
Attn: Mr. Ian Kerswill

Dear Mr. Ian Kerswill,

Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities –
Remaining Ancillary Buildings and Facilities
Certification of Monthly EM&A Report No. 33

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 33 for November 2018 (Revision 4) conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

Yours faithfully,
for and on behalf of
Atkins China Limited



Keith Chau
Environmental Team Leader

cc.
1. AECOM – Mr. Joseph Yau (By Fax.: 3468 2076)
2. IEC/ENPO – Mr. Ray Yan & Mr. Y.H. Hui (By Fax.: 3465 2899)

RAMBOLL

Ref.: HYDHZMBEEM00_0_7696L.19

11 October 2019

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.
The PRE's Office
550 Cheung Tung Road, Lantau, Hong Kong

Attention: Mr. Hugh Jennings

Dear Sir,

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

Contract No. HY/2014/05
HZMB HKBCF – Remaining Ancillary Buildings and Facilities
Monthly Environmental Monitoring & Audit Report for November 2018

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for November 2018 certified by the ET Leader (ET's ref.: "5140819/18.30/OC075/KC/RL" dated 10 October 2019) and provided to us via e-mail on 10 October 2019.

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

The ET Leader is reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection and the reported information be true, valid and correct as per Conditions 5.4 and 5.5 of the EP respectively.

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

Ray Yan
Independent Environmental Checker
HZMB HKBCF

c.c.	HyD	Mr. Cheng Pan	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	Atkins	Mr. Keith Chau	(By Fax: 2890 6343)
	LCWJV	Mr. Ian Kerswill	(By Fax: 3621 0180)

Internal: DY, YH, HW, ENPO Site

Q:\Projects\HYDHZMBEEM00\02_Proj_Mgt\02_Corr\HYDHZMBEEM00_0_7696L.19

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

Contract No. HY/2014/05

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

Monthly EM&A Report No. 33

(Covering the Period from 1 November 2018 to 30 November 2018)

8 October 2019

Revision 4

Main Contractor

LEIGHTON 禮頓
俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Environmental Team

ATKINS
Member of the SNC-Lavalin Group

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Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HZMB 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 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 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 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. As confirmed by RE in July 2018, the construction works of Contract No. HY/2014/04 within Contract No. HY/2014/05 works area have been completed.

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 tTEMP_o the Contract.

This is the thirty-third monthly EM&A Report for the Contract No. HY/2014/05 which summarizes findings of the EM&A works during the reporting period from 1 to 30 November 2018 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2014/05 works area).

Landscape Checklist is shown in **Appendix A**.

Environmental Monitoring and Audit Progress

The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that air quality and noise monitoring works for the Contract are covered by Contract No. HY/2013/04 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HZMB HKBCF) – Infrastructure Works Stage II (Southern Portion) 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 AMS7B and noise monitoring at NMS2 and NMS3C as part of EM&A programme, if these monitoring stations are no longer covered under Contract HY/2013/04 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 works site area in Hong Kong-Zhuhai-Macao Bridge was handed over to the relevant authorities since 24 October 2018 and the site had been changed to a closed area, no site inspection was conducted for the Contract No. HY/2014/05 during the reporting period.

Breaches of Action and Limit Levels

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

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/04 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3C by the ET of Contract No. HY/2013/04 during the reporting period.

Complaint Log

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

Notifications of Summons and Successful Prosecutions

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

Reporting Change

There was no reporting change during the reporting period.

Future Key Issues

No construction works will be conducted by Contract No. HY/2014/05 in the upcoming month.

1 Introduction

1.1 Basic Project Information

1.1.1 This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HZMB 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 which is a "Designated Project" under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499). An Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. The construction works of the Contract 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. As confirmed by RE in July 2018, the construction works of Contract No. HY/2014/04 within Contract No. HY/2014/05 works area have been completed. The works areas of the Contract are shown in **Appendix B**.

1.1.3 The proposed works under this Contract comprise the following:

<u>For Contract No. HY/2014/05</u>

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

- Public Toilets at Vehicle Clearance Plaza (VCP);
- Customs and Excise Department (C&ED) Dangerous Good Store (Building 021);
- Customs Detective Dog Base Building (Building 022);
- C&ED Outbound Cargo Examination Building and Examination Platform (Building 023);
- Inbound Private Car Annexure (Building 025);
- Outbound Private Car Annexure (Building 032);
- E&M maintenance Building (Building 044);
- Highways Depot & Administration Building (Building 045);
- Outbound X-ray Building (Building 053);
- Outbound X-ray Scan Tunnel (Building 058); and
- Inbound X-ray Scan Tunnel (Building 059).

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

- Automatic Vehicle Clearance Support System (AVCSS) installed by Contract No.

HY/2013/06; and

- Gantry Type X-ray Vehicle Inspection System installed by Contract No. HY/2014/04.

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

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

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

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

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

(i) The Automatic Vehicle Clearance Support System amid to increasing traffic flow for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities;

(ii) Responsible for designs and develops a set of tailor-made computer monitoring and control systems to for daily security operation; and

(iii) The Clearance Workstations at 72 vehicle clearance kiosks, Customs and Excise's inbound and outbound traffic control centers as well as a Vehicle Tracking System.

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

(i) The Gantry Type X-ray Vehicle Inspection System (GXRVIS) aims to provide an integrated, innovative, efficient and effective vehicle inspection system at the inbound and outbound boundary control points of Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) for supporting the operations of Customs & Excise Department (C&ED);

(ii) Design, supply, deliver to HKBCF, installation, test and commissioning and maintenance of two sets of Gantry Type X-ray Vehicle Inspection System and all related components necessary for the complete operation of the system; and

(iii) Design, supply, install, test, commission and maintain of the Radioactive Threat Detection Systems integrated into the Gantry Type X-ray Vehicle Inspection Systems.

1.1.4 This is the thirty-third Monthly EM&A Report for the Contract No. HY/2014/05 which summarizes the findings of the EM&A programme during the reporting period from 1 to 30 November 2018. (includes the construction works of Contract No. HY/2013/06 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 C**. 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
For Contract No. HY/2014/05				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076

Party	Position	Name	Telephone	Fax
Environmental Project Office / Independent Environmental Checker (Ramboll 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	Eric Kwok	3973 1817	3621 0180
	Environmental Officer	Stephen Tsang	3973 1806	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area				
Engineer or Engineer's Representative (RE) (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll 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	---

1.3 Construction Programme

1.3.1 As all the sections under Contract No. HY/2014/05 and HY/2013/06 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area, no construction programme will be provided.

1.4 Construction Works Undertaken During the Reporting Period

1.4.1 As all the sections under Contract No. HY/2014/05 and HY/2013/06 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area, no construction works undertaken during the reporting period.

2 Air Quality Monitoring

2.1 Monitoring Locations

2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF and Contract No. HY/2013/04 HZMB HKBCF – Infrastructure Works Stage II (Southern Portion) since 1 October 2018.

2.1.2 The ET of the Contract or another ET of the HZMB project is required to conduct air quality monitoring at AMS6 and AMS7B as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2011/03 and HY/2013/04. **Figure 2.1** shows the locations of the air monitoring stations.

Table 2-1 Construction Dust Monitoring Locations

ID	Location Description
AMS6(1)	Dragonair/CNAC (Group) Building
AMS7B(2)	3RS site office

Remark:

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

(2) A proposal for re-location of AQM station (AMS7) for HZMB HKBCF Project was justified by the ET Leader for Contract No. HY/2013/01 on 22 January 2018; verified by the IEC on 24 January 2018; and submitted to EPD on 30 January 2018, and the AQM has been carrying out at the alternative AQM station with EPD's consent since 6 February 2018.

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/2011/03 and HY/2013/04.

2.2.2 The Action and Limit Levels for 1-hr TSP and 24-hr TSP are provided in **Table 2-2** and **Table 2-3**, respectively.

Table 2-2 Action and Limit Levels for 1-hr TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS7B – 3RS site office	370	

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

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	173	260
AMS7B – 3RS site office	183	

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

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

2.3 Monitoring Results

2.3.1 The monitoring results for AMS6 and AMS7B are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2013/04, respectively.

2.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Report prepared by Contract No. HY/2011/03. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/04 during the reporting period. Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS7B shall be referred to the monthly EM&A Report prepared by Contract No. HY/2013/04.

3 Noise Monitoring

3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2013/04. The ET of the Contract or another ET of the HZMB of the HZMB project is required to conduct impact noise monitoring at NMS2 and NMS3C as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2013/04. **Figure 2.1** shows the locations of noise monitoring stations.

Table 3-1 Construction Noise Monitoring Locations

ID	Location Description
NMS2(1)	Seaview Crescent
NMS3C (1)(2)(3)	Ying Tung Estate Refuse Collection Point

Remarks:
(1) The ET of this Contract should conduct impact noise monitoring at the NMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
(2) The Action and Limit Levels for schools will be applied for this alternative monitoring location.
(3) NMS3C has been undertaking by the ET for Contract No. HY/2013/04 since 20 August 2018.

3.2 Monitoring Requirements

3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2013/04.

3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3-2**.

Table 3-2 Action and Limit Level for Construction Noise

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

Notes:
If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
* Limit level is 70 dB(A) for schools and 65 dB(A) during school examination period.

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

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

3.3 Monitoring Results

3.3.1 The monitoring results for NMS2 and NMS3C are reported in the monthly EM&A Reports prepared for Contract No. HY/2013/04. No noise exceedances were recorded at stations NMS2 and NMS3C by the ET of Contract No. HY/2013/04 during the reporting period.

4 Environmental Site Inspection and Audit

4.1 Site Inspection

4.1.1 The works site area in Hong Kong-Zhuhai-Macao Bridge was handed over to the relevant authorities since 24 October 2018 and the site area was changed to closed area, no site inspection was conducted for the Contract No. HY/2014/05 during the reporting period.

4.1.2 The landscape work of green roof for Contract No. HY/2014/05 was commenced on 11 December 2017. As confirmed by RE, landscape works for Contract No. HY/2014/05 is considered substantially completed as of 23 April 2018. The related certificate (Ref.: BWLM: TTHK: wmy:60313494/C8/M15/905/M0531-2018010932T) dated 13 September 2018 was issued by RE. No inspection for landscape works (construction phase) was conducted for Contract No. HY/2014/05 during the reporting period.

4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 The works site area of Contract No. HY/2014/05 was handed over to the relevant authorities since 24 October 2018 and no chemical waste and general refuse were generated during reporting period.

4.3 Environmental Licenses and Permits

4.3.1 The works site area of Contract No. HY/2014/05 was handed over to the relevant authorities since 24 October 2018, therefore, no environmental licenses and permits is required during reporting period.

4.4 Implementation Status of Environmental Mitigation Measures

4.4.1 The works site area of Contract No. HY/2014/05 was handed over to the relevant authorities since 24 October 2018, therefore, no environmental mitigation measures is recorded. The EMIS is shown in **Appendix E**.

4.5 Summary of Exceedance of the Environmental Quality Performance Limit

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

4.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/04 during the reporting period.

4.5.3 No noise exceedances were recorded at stations NMS2 and NMS3C by the ET of Contract No. HY/2013/04 during the reporting period.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecution

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

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

5 Future Key Issues

5.1 Construction Programme for the Coming Months

5.1.1 The Contract No. HY/2014/05 was handed over to the relevant authorities since 24 October 2018 and the works site area had been changed to a closed area. No construction programme will be provided.

5.2 Environmental Site Inspection Schedule for the Coming Month

5.2.1 The Contract No. HY/2014/05 was handed over to the relevant authorities since 24 October 2018 and the works site area had been changed to a closed area. No site inspection will be conducted for the Contract No. HY/2014/05.

6 Conclusions

6.1 Conclusions

6.1.1 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. As confirmed by RE in July 2018, the construction works of Contract No. HY/2014/04 within Contract No. HY/2014/05 works area have been completed. The thirty-third Monthly EM&A Report for Contract No. HY/2014/05 summarizes findings of the EM&A works during the reporting period from 1 to 30 November 2018 (includes the construction works of Contract No. HY/2013/06). The works site area in Hong Kong-Zhuhai-Macao Bridge was handed over to the relevant authorities since 24 October 2018 and the site area had been change to a closed area.

6.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Report prepared by Contract No. HY/2011/03. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/04 during the reporting period. Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS7B shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/04 – Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion) since 1 October 2018.

6.1.3 No noise exceedances were recorded at stations NMS2 and NMS3C by the ET of Contract No. HY/2013/04 during the reporting period. Summary of Action and Limit Level exceedance at NMS2 and NMS3C shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/04 – Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion) since 1 October 2018.

6.1.4 The works site area in Hong Kong-Zhuhai-Macao Bridge was handed over to the relevant authorities since 24 October 2018 and the site area had been change to a closed area. No site inspection was carried out during the reporting period. Landscape checklist is shown in **Appendix A**.

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

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

FIGURES

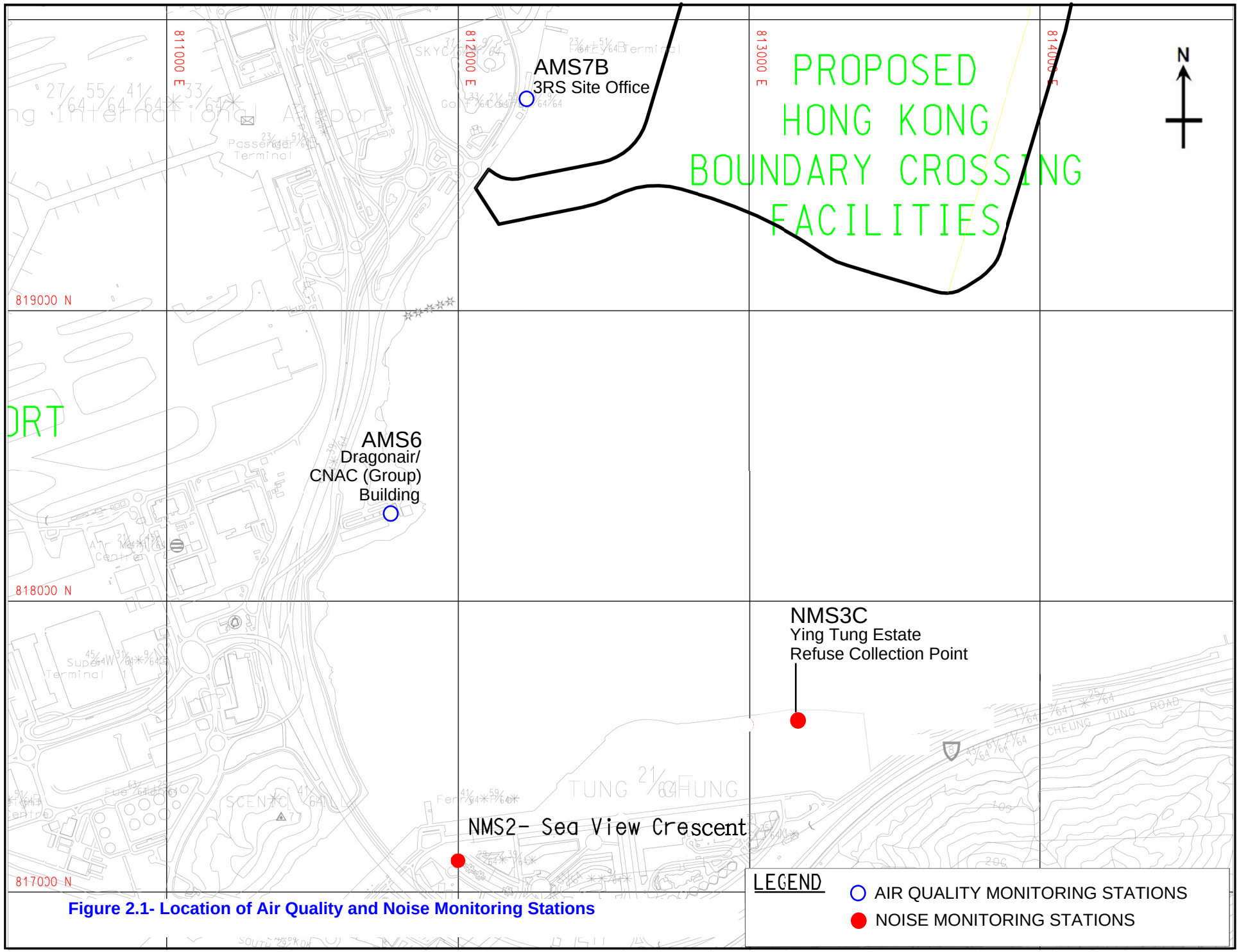


Figure 2.1- Location of Air Quality and Noise Monitoring Stations

APPENDIX A

Landscape Checklist

Covering Period: No.1: 24 Oct 2018 to 23 Dec 2018 **Reported By:** Keith Chau

Time: --- **Weather Condition:** ---

1	**Building 022 at-grade planting**	**N/A or not observed**	**Yes**	**No**	**Remarks / Photo**
1.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
1.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
1.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
1.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
1.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
1.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
1.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
1.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

2	**Building 023 at-grade planting**	**N/A or not observed**	**Yes**	**No**	**Remarks / Photo**
2.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
2.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
2.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
2.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
2.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
2.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
2.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
2.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

3	Building 023 roof greening	N/A or not observed	Yes	No	Remarks / Photo
3.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
3.4	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
3.5	Are litter and debris removed?	☐	☒	☐	Remark [1]
3.6	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
3.7	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
3.8	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
3.9	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
3.10	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

4	Building 025 at-grade planting	N/A or not observed	Yes	No	Remarks / Photo
4.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
4.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
4.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
4.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
4.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
4.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
4.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
4.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

5	Building 025 roof greening	N/A or not observed	Yes	No	Remarks / Photo
5.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
5.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
5.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
5.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
5.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
5.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
5.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
5.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

6	Building 032 at-grade planting	N/A or not observed	Yes	No	Remarks / Photo
6.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
6.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
6.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
6.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
6.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
6.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
6.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
6.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

7	Building 032 roof greening	N/A or not observed	Yes	No	Remarks / Photo
7.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
7.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
7.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
7.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
7.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
7.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
7.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
7.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

8	Building 044 roof greening	N/A or not observed	Yes	No	Remarks / Photo
8.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
8.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
8.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
8.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
8.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
8.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
8.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
8.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

9	Building 045 roof greening	N/A or not observed	Yes	No	Remarks / Photo
9.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
9.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
9.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
9.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
9.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
9.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
9.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
9.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

10	Building 053 at-grade planting	N/A or not observed	Yes	No	Remarks / Photo
10.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
10.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
10.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
10.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
10.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
10.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
10.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
10.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

11	Building 058 at-grade planting	N/A or not observed	Yes	No	Remarks / Photo
11.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
11.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
11.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
11.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
11.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
11.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
11.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
11.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

12	Building 059 at-grade planting	N/A or not observed	Yes	No	Remarks / Photo
12.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?	☐	☒	☐	Remark [1]
12.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	☐	☒	☐	Remark [1]
12.3	Are litter and debris removed?	☐	☒	☐	Remark [1]
12.4	Are planting areas matched with the approved landscape plan?	☐	☒	☐	Remark [1]
12.5	Is planting pattern matched with the approved landscape plan?	☐	☒	☐	Remark [1]
12.6	Are planting locations and spacing matched with the approved landscape plan?	☐	☒	☐	Remark [1]
12.7	Are the planting species on site matched with Figure 3.6 of the approved landscape plan?	☐	☒	☐	Remark [1]
12.8	Are the plants in satisfied condition?	☐	☒	☐	Remark [1]

13	General Document	N/A or not observed	Yes	No	Remarks / Photo
13.1	Are the records of watering, fertilizing, weeding, pruning and mowing kept for checking?	☐	☒	☐	Remark [1]

Follow up actions for previous Site Audit:

N/A

Observations:

N/A

Corrective Actions (if any):

N/A

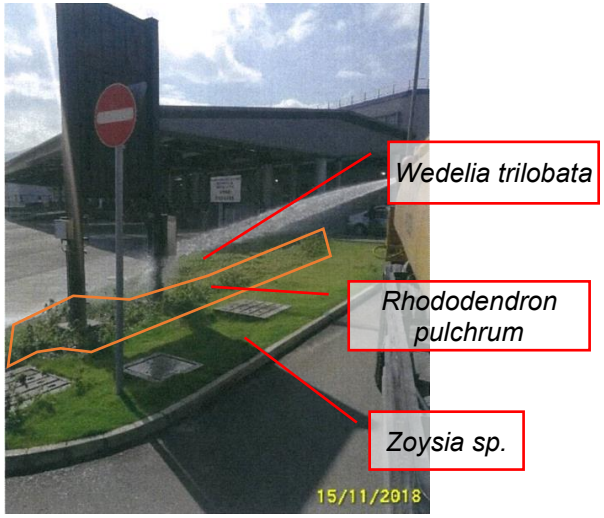
Remark:

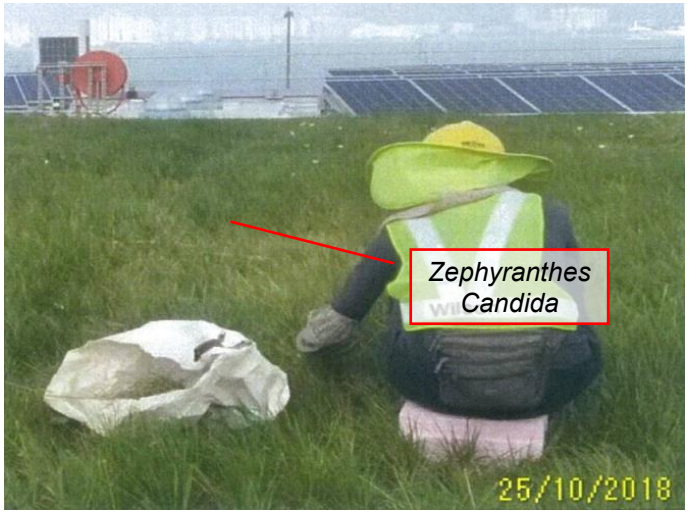
[1] This Checklist is prepared based on the information from "Planting Works Monthly Maintenance Report No.7 (24 October 2018 to 23 November 2018)" (*CSF No.: RABF-CSF-LCJ-ABWF-003021A*) and "Planting Works Monthly Maintenance Report No.8" (24 November 2018 to 23 December 2018)" (*CSF No.: RABF-CSF-LCJ-ABWF-003046A*), which prepared by Contractor and submitted to Engineer's Representative.

General Conclusion:

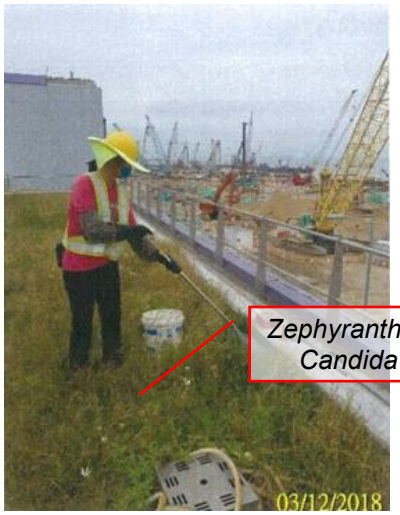
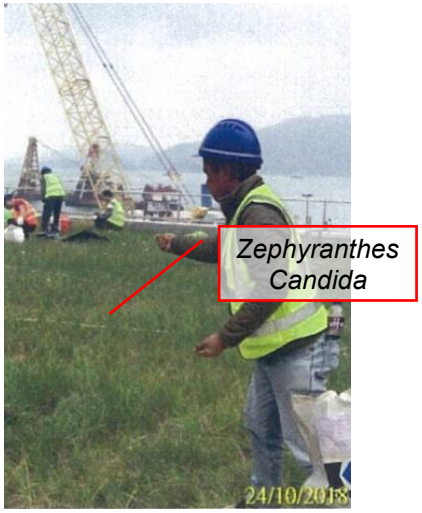
1. A standby signal no. 1 was hoisted on 31 October 2018 for 28 hours; a strong wind signal no. 3 was hoisted on 1 November 2018 for 13 hours and 30 minutes; and a standby signal no. 1 was hoisted on 2 November 2018 for six hours during the reporting period.
2. All plants (shrubs, ground cover and turf) were in reasonable condition.
3. The establishment works followed the maintenance programme.

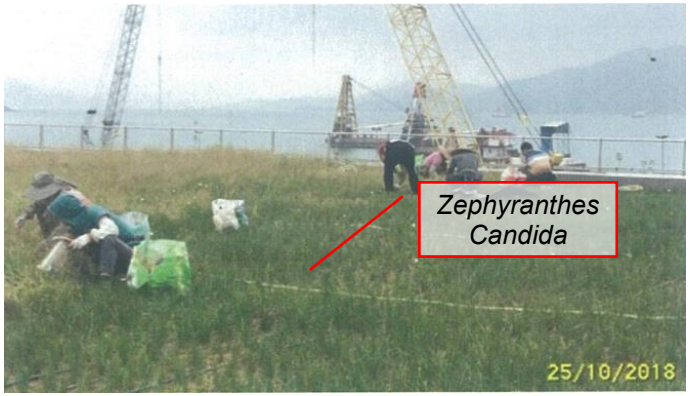
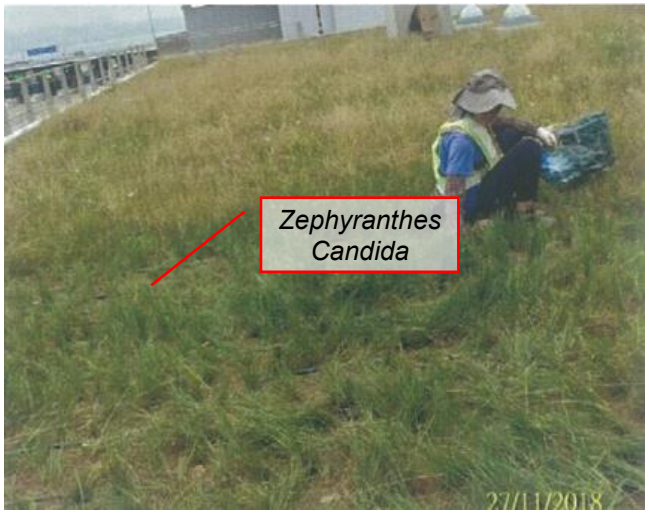
Reported by (ET's Representative):	Keith Chau	Title:	ET Leader
Signature:	Keith	Date:	15 July 2019
Reviewed by (AECOM Landscape Representative):	CHAN Pak Kin	Title:	RSFO(2)
Signature:		Date:	15 JUL 2019
Contractor's Representative:	Stephen Tsang	Title:	Environmental Officer
Signature:		Date:	15.7.19
Checked by (IEC's Representative):	Harris Wong	Title:	ESS
Signature:		Date:	30 July 2019

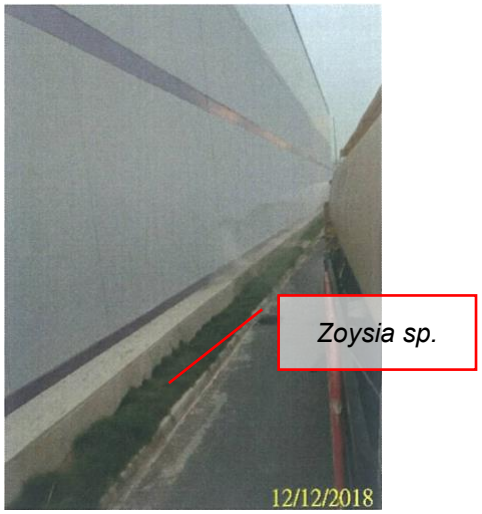
Location	Photo Record	
Building 022 at-grade planting (Photo 1 and Photo 2)		
Building 023 at-grade planting (Photo 3 and Photo 4)		

Building 023 roof greening (Photo 5 and Photo 6)		
Building 025 at-grade planting (Photo 7 and Photo 8)		

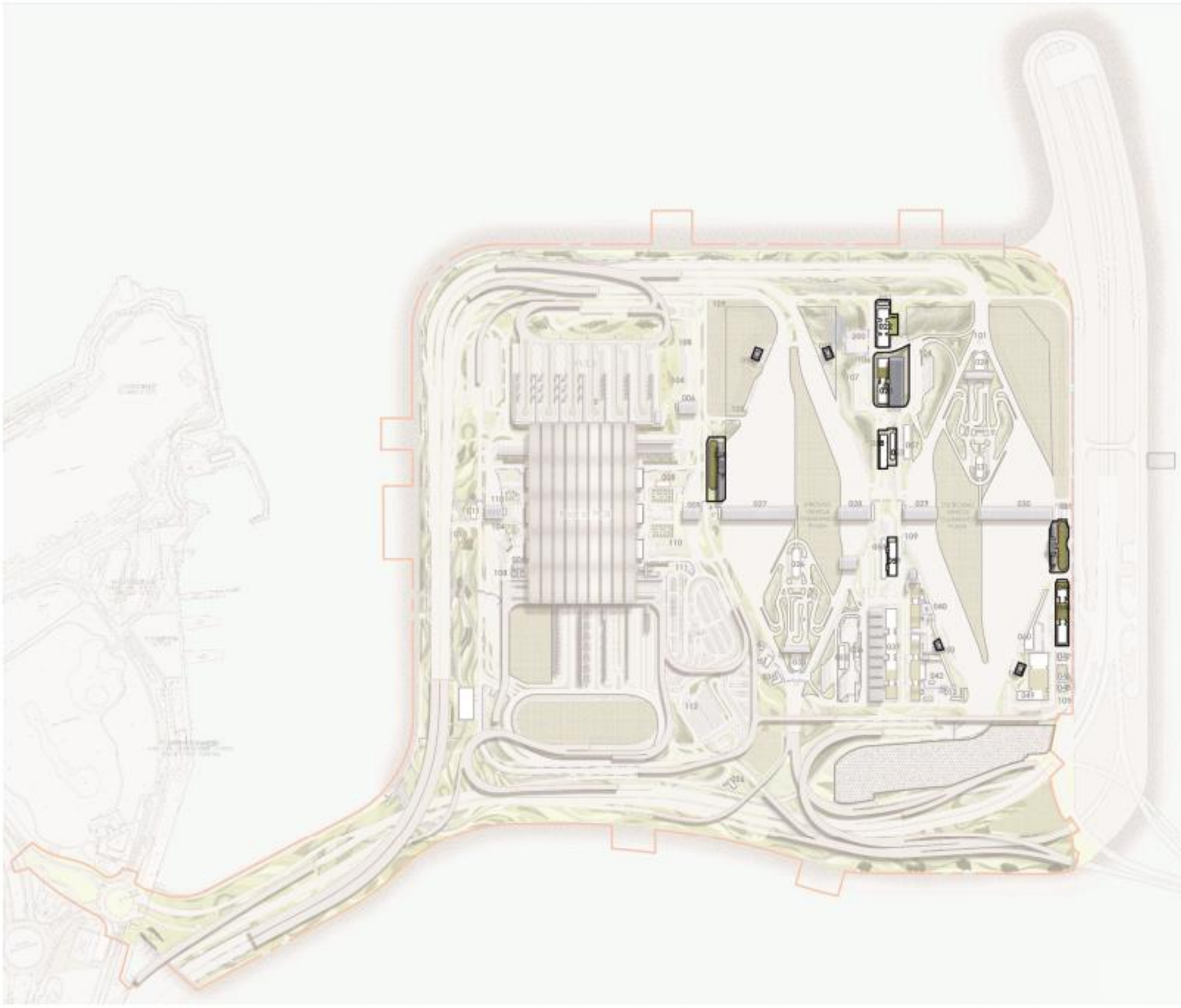
Building 025 roof greening (Photo 9)		
Building 032 at-grade planting (Photo 10 and Photo 11)		

Building 032 roof greening (Photo 12 and Photo 13)		
Building 044 roof greening (Photo 14)		

Building 045 roof greening (Photo 15 and Photo 16)		
Building 053 at-grade planting (Photo 17 and Photo 18)		

Building 058 at-grade planting (Photo 19 and Photo 20)		
Building 059 at-grade planting (Photo 21 and Photo 22)		

Note: [1] Extract from "Planting Works Monthly Maintenance Report No.7 (24 October 2018 to 23 November 2018)" (*CSF No.: RABF-CSF-LCJ-ABWF-003021A*) and "Planting Works Monthly Maintenance Report No.8" (24 November 2018 to 23 December 2018)" (*CSF No.: RABF-CSF-LCJ-ABWF-003046A*), which prepared by Contractor and submitted to Engineer's Representative.



LEGEND:

- HKBCF site boundary
- Elevated bridges with bridge pier/ decks/ footbridges
- Boundary fence (1m maintainance path on both sides of fence)
- Planting (shrubs & groundcover)
- Hydroseeding
- Multi-purpose Areas (Footpath/ At Grade Carriageway/ Amenity Area)
- Multi-purpose Areas with Granite finish (Footpath/ At Grade Carriageway/ Amenity Area)
- Green roof
- Gentle landscape berm
- Tree planting
- Water features (around and inside PCB area)
- Attenuation pond and bioswale
- Stone swathe feature
- Stone gravel finish (for future development)
- Ancillary building
- Vertical greening

KEY LOCATION:

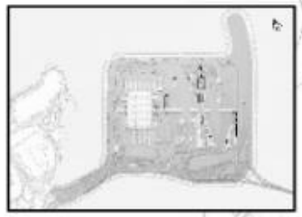
AECOM Aedas
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI

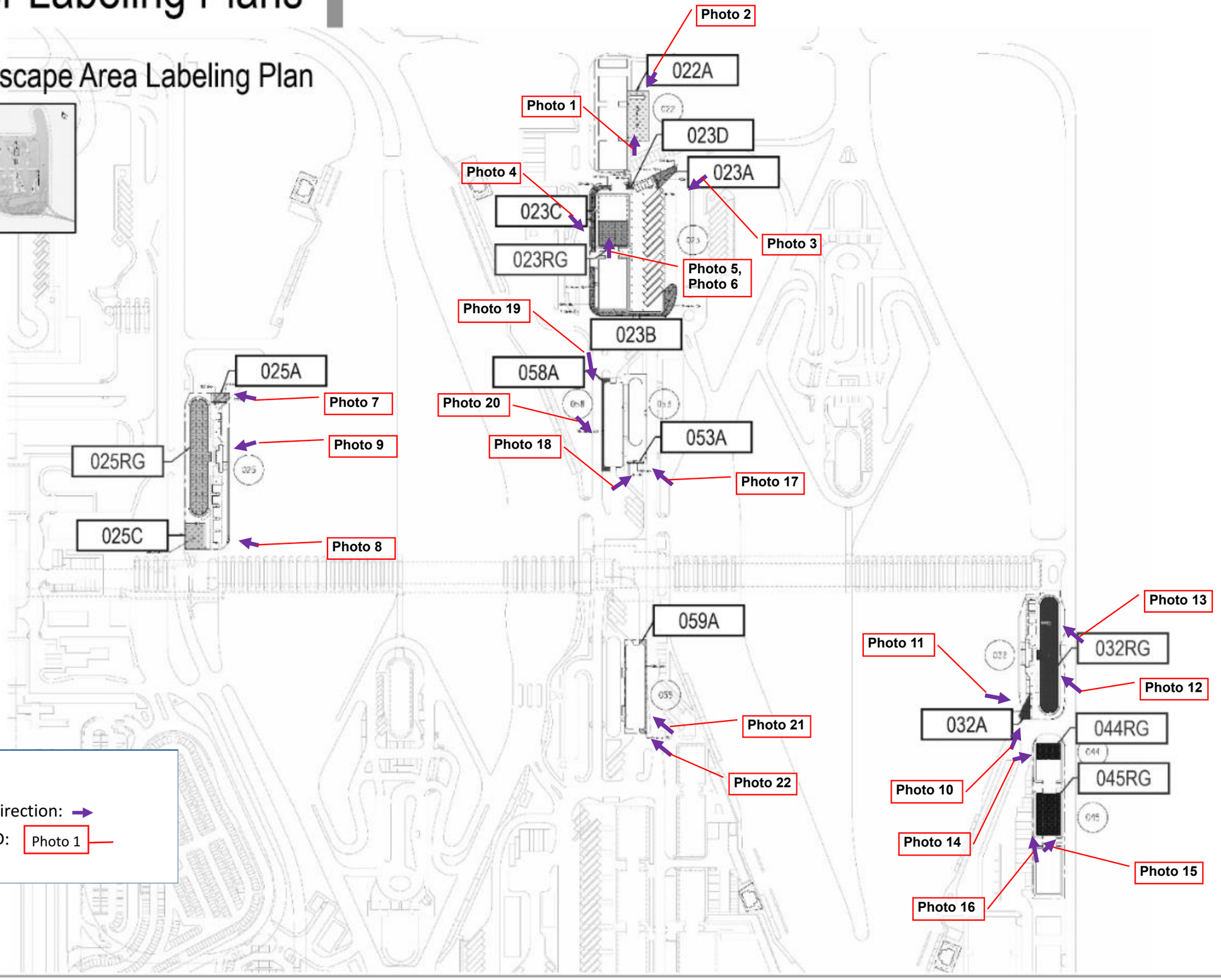
AGREEMENT No. CE 13/2010 (CE)
HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG BOUNDARY CROSSING FACILITIES
(SUPERSTRUCTURES AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION
MASTER LANDSCPE PLAN FOR CONTRACT NO. HY/2014/05 (C8) (LEVEL: TOP VIEW)

SCALE	NA	DATE	MAY 2018
CHECK	ELK	DRAWN	TRT
JOB No.		DRAWING No.	REV
	AECMP01	B.5c	-

1. Planter Labeling Plans

- C8 Landscape Area Labeling Plan





TREE PLANTING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [m]
AL **	*Albizia lebbeck*	大葉合歡	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
BV	*Bauhinia variegata*	宮粉羊蹄甲	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
CV	*Callistemon viminalis*	串錢柳	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
CS **	*Cassia siamea*	鐵刀木	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
GR	*Grevillea robusta*	銀樺	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
JA	*Jacaranda mimosifolia*	藍花楹	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
JC **	*Juniperus chinensis*	龍柏	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4
TP *, **	*Thespesia populnea*	恒春黃槿	4000-5000(H) x 3000(SP) x 100(DBH)	3 - 4

SHRUB PLANTING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Aod	*Aglaia odorata*	米仔蘭	700(H) x 500(SP)	400
Cha	*Calliandra haematocephala*	紅絨球	700(H) x 500(SP)	400
Fmi **	*Ficus microcarpa 'golden leaves'*	黃金榕	1000(H) x 700(SP)	600
Ite	*Iris tectorum*	鳶尾	300(H) x 200(SP)	150
Ich *	*Ixora chinensis*	龍船花	500(H) x 400(SP)	350
Mar	*Malvaviscus arboreus*	大紅袍	700(H) x 500(SP)	450
Mfi	*Michelia figo*	含笑	800(H) x 500(SP)	400
Pmy	*Phyllanthus myrtifolius*	瘤腺葉下珠	400(H) x 300(SP)	250
Rpu	*Rhododendron pulchrum*	錦繡杜鵑	600(H) x 400(SP)	300
Rsi *	*Rhododendron simsii*	紅杜鵑	600(H) x 400(SP)	300
Sco	*Spathiphyllum commutatum*	白掌	300(H) x 300(SP)	200
Sre	*Strelitzia reginae*	天堂鳥蕉	500(H) x 400(SP)	350

GREEN ROOF GROUND COVER PLANTING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Zan	*Zephyranthes candida*	葱蓮	100(H) x 100(SP)	100

CLIMBER PLANTING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Pda	*Parthenocissus dalzielii*	異葉爬山虎	300(H) x 250(SP)	250
Pve **	*Pyrostegia venusta*	炮仗花	300(H) x 250(SP)	250

GROUND COVER PLANTING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [mm]
Aag	*Agave angustifolia*	狹葉龍舌蘭	200(H) x 300(SP)	200
Aam	*Agave americana*	龍舌蘭	100(H) x 100(SP)	100
Asl	*Aglaonema 'Silver King'*	銀王粗肋草	150(H) x 150(SP)	100
Ave	*Alternanthera versicolor*	錦繡莧, 紅草	100(H) x 100(SP)	100
Ite	*Iris tectorum*	鳶尾	100(H) x 100(SP)	100
Lmo	*Lantana montevidensis*	鋪地臭金鳳	200(H) x 300(SP)	200
Lsp *	*Liriope spicata*	山麥冬	100(H) x 100(SP)	100
Nex *	*Nephrolepis hirsutula*	毛葉腎蕨	150(H) x 200(SP)	150
Oja *	*Ophiopogon japonicus*	麥冬	150(H) x 150(SP)	100
Rds	*Rhoeo discolor*	紫背萬年青	150(H) x 200(SP)	100
Spo **	*Syngonium podophyllum*	合果芋	200(H) x 200(SP)	150
Wtr **	*Wedelia trilobata*	蜈蚣菊	100(H) x 100(SP)	100
Zan	*Zephyranthes candida*	葱蓮	100(H) x 100(SP)	100
Zro	*Zephyranthes rosea*	玫瑰葱蓮	150(H) x 200(SP)	100

TURFING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]
Zja **	*Zoysia sp.*	朝鮮草	25(H)

HYDROSEEDING [1],[2]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME
Cda *, **	*Cynodon dactylon*	百慕達草
Pno	*Paspalum notatum*	百喜草
Eop * / Lpe	*Eremochloa ophiuroides / Lolium perenne*	假儉草 / 黑麥草

INDOOR PLANTING IN PASSENGER CLEARANCE BUILDING [1]

SPECIES CODE	BOTANICAL NAME	CHINESE NAME	SIZE [mm]	SPACING [m]
TREE				
FB **	*Ficus benjamina*	垂榕	5000(H) x 4000(SP) x 150(DBH)	N.A.
SHRUB				
Ite	*Iris tectorum*	鳶尾	300(H) x 200(SP)	150
Sco	*Spathiphyllum commutatum*	白掌	300(H) x 300(SP)	200

NOTES:

[1] All proposed plant species and specifications are subject to change during construction to suit the site conditions.

[2] Minimum requirement of grass seed mix for hydroseeding shall follow General Specification for Civil Engineering Works Clause 3.26(3).

* Species native to Hong Kong according to the Hong Kong Herbarium website <http://www.herbarium.gov.hk>

** Species which is salt spray tolerant

AECOM

AGREEMENT NO. CE 13/2010 (CE)

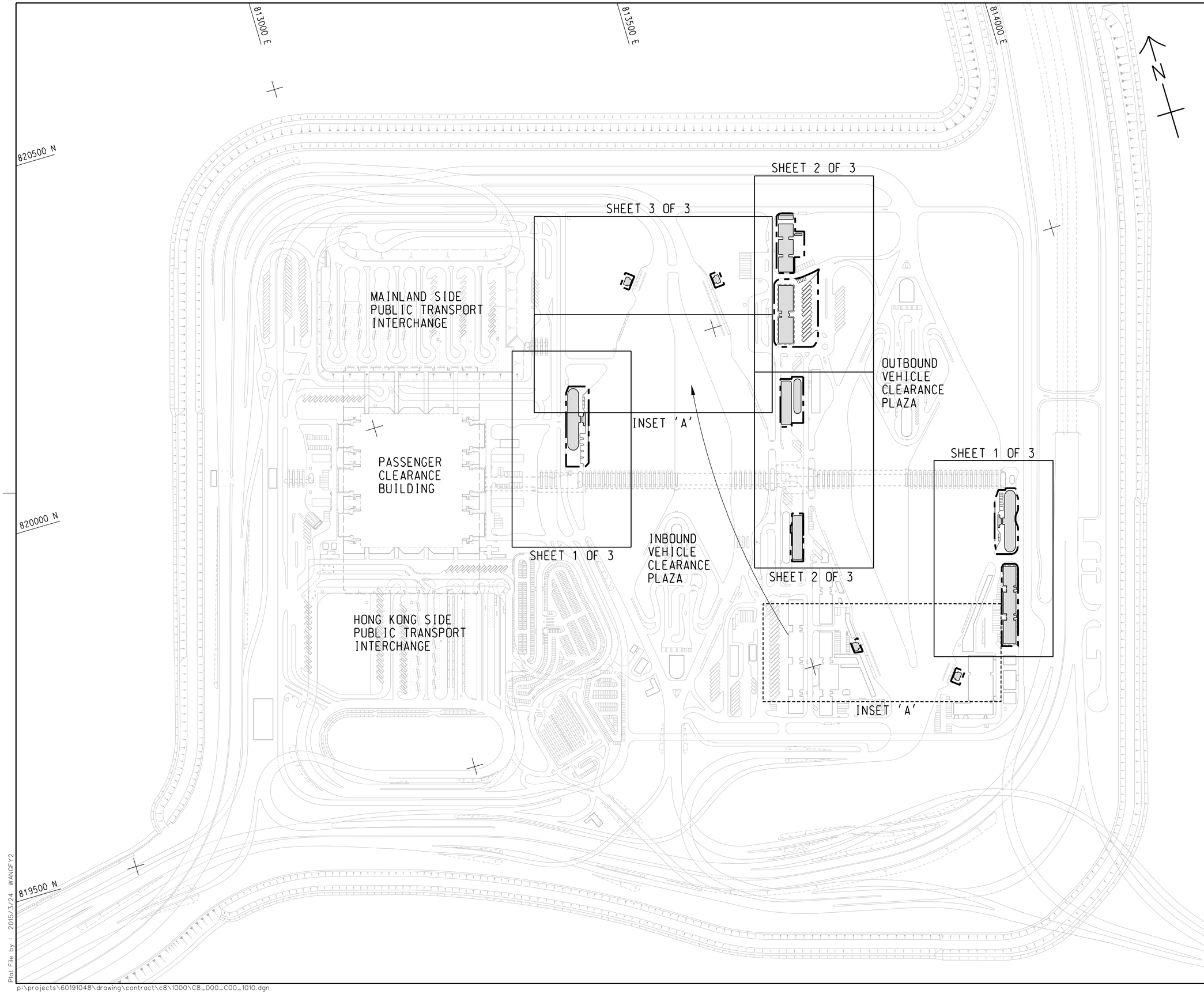
HONG KONG-ZHUHAI-MACAO BRIDGE HONG KONG BOUNDARY CROSSING FACILITIES (SUPERSTRUCTURES AND INFRASTRUCTURES) DESIGN AND CONSTRUCTION

PLANTING SCHEDULE

SCALE	N.T.S.	DATE	18 MAY 2018
FIGURE NO.	FIGURE 3.6		

APPENDIX B

Location of Works Areas



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

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

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

KEY PLAN

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1010

DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2014/05	P. Dir. APPROVED 批准人 TKH	
DRAWN BY 繪圖 WSY	STATUS 階段		
SCALE 比例 A1 1 : 2500			
DIMENSIONS ARE IN 尺寸單位 METRES	© COPYRIGHT RESERVED 版 權 所 有		

Plot File by : 2015/3/24 WANGFY2

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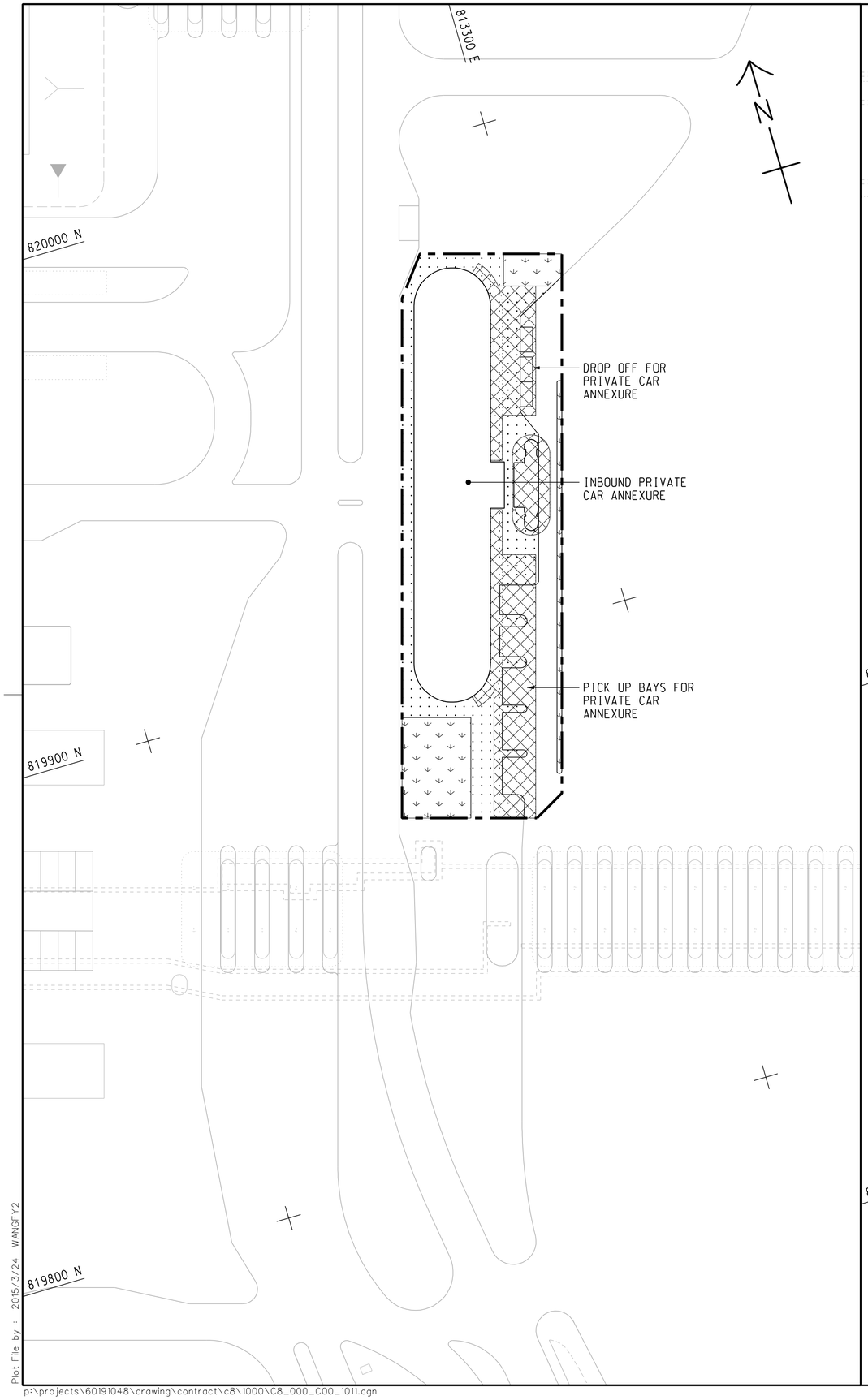

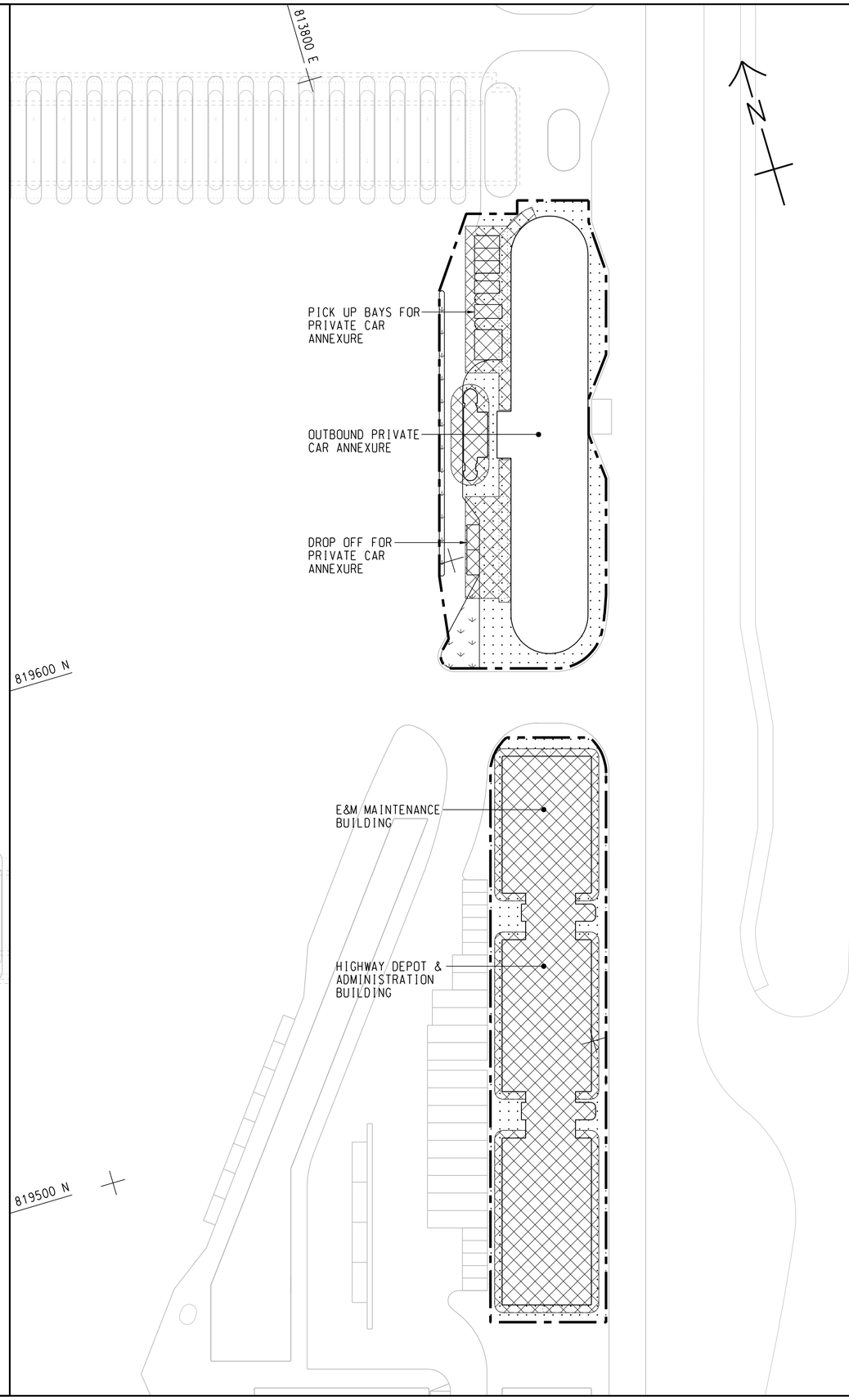

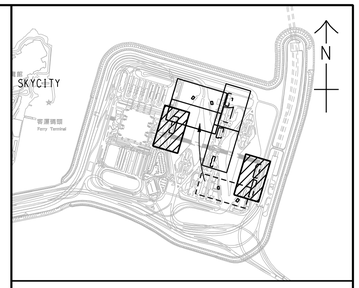

KEY PLAN
SCALE 1 : 20000

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. 修訂	DESCRIPTION 內容摘要	BY.	CHECKED 覆核	DATE 日期
-	TENDER DRAWING	BWCW	SCT	MAR.15

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

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

GENERAL LAYOUT PLAN

SHEET 1 OF 3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1011

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

Plot File by : 2015/3/24 WANGFY2

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813700 E

819900 N

820100 N

C&ED DANGEROUS GOOD STORE

DOG SWIMMING POOL & OUTDOOR AREA

CUSTOMS DETECTIVE DOG BASE BUILDING

819800 N

820000 N

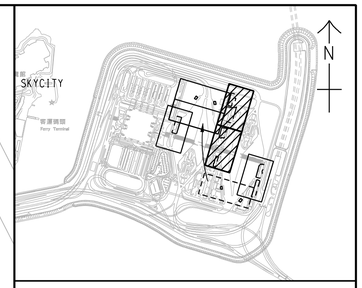
C&ED OUTBOUND CARGO EXAMINATION BUILDING AND EXAMINATION PLATFORM

819700 N

OUTBOUND X-RAY BUILDING

OUTBOUND X-RAY SCAN BUILDING

INBOUND X-RAY SCAN BUILDING



KEY PLAN

SCALE 1 : 20000

NOTES:

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

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

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

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

GENERAL LAYOUT PLAN

SHEET 2 OF 3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1012

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

Plot File by : 2015/3/24 WANGFY2

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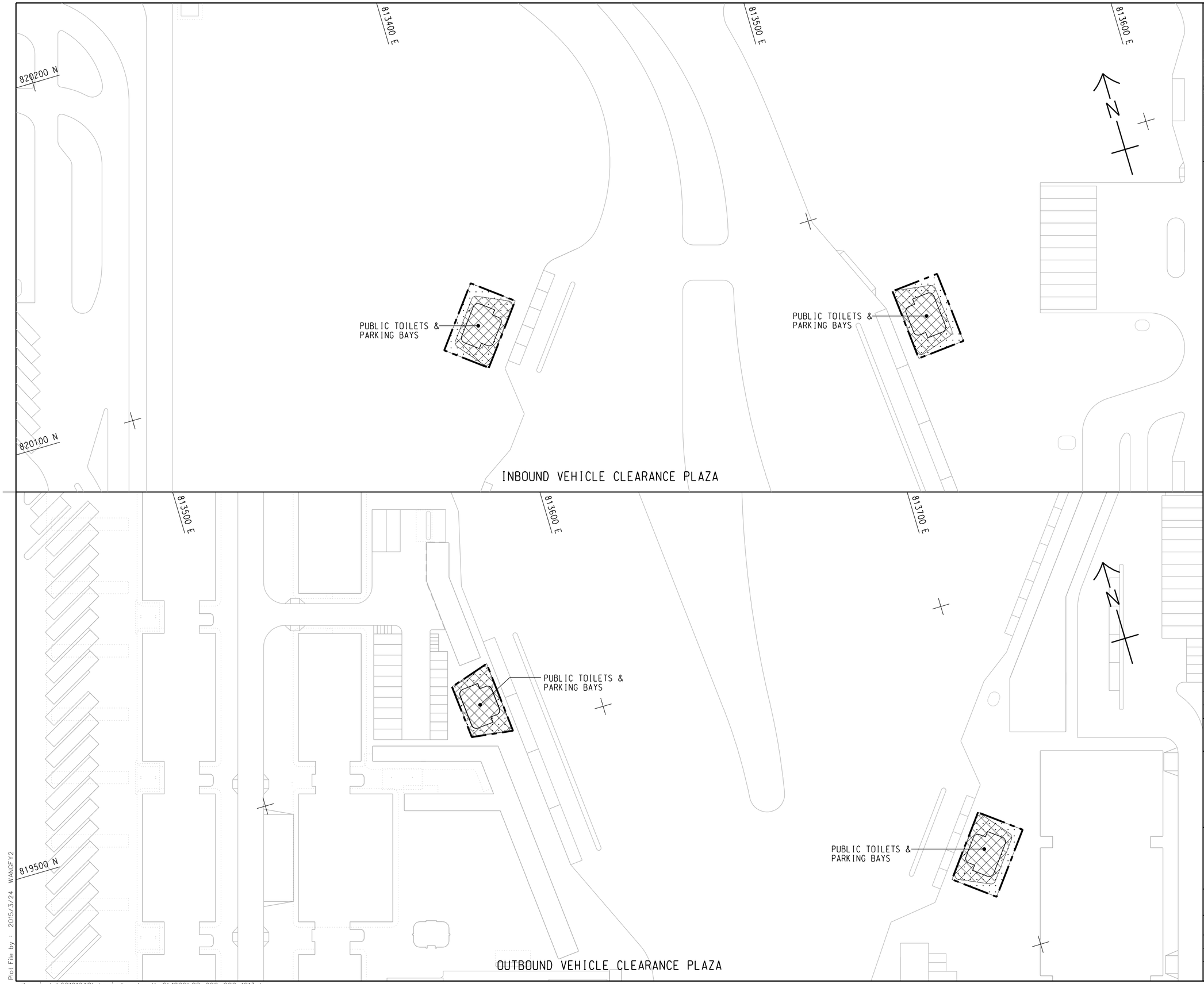

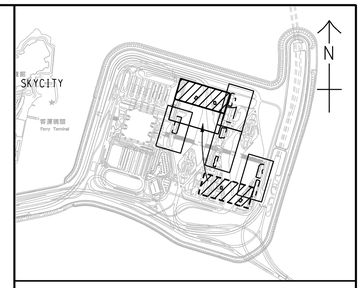

KEY PLAN
SCALE 1 : 20000

NOTES:

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

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

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

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

GENERAL LAYOUT PLAN

SHEET 3 OF 3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1013

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

Plot File by : 2015/3/24 WANGFY2

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SETTING OUT POINT

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

817200 E

817400 E

817600 E

819200 N

819000 N

NORTH LANTAU HIGHWAY

CHEUNG TUNG ROAD

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

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

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

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

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

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

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

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

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

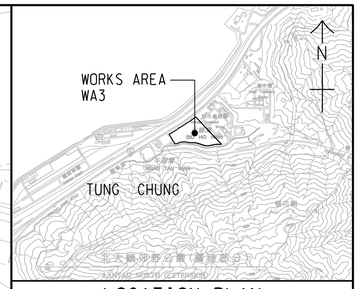
10m WIDE COMMON ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/01. UPON COMMENCEMENT OF CONTRACT NO. HY/2013/03. THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT NO. HY/2013/01 TO CONTRACT NO. HY/2013/03.

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

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

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

301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321



LOCATION PLAN
SCALE 1 : 25000

NOTES:

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

LEGEND:

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

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

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

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

WORKS AREA WA3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C8/000/C00/1051

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

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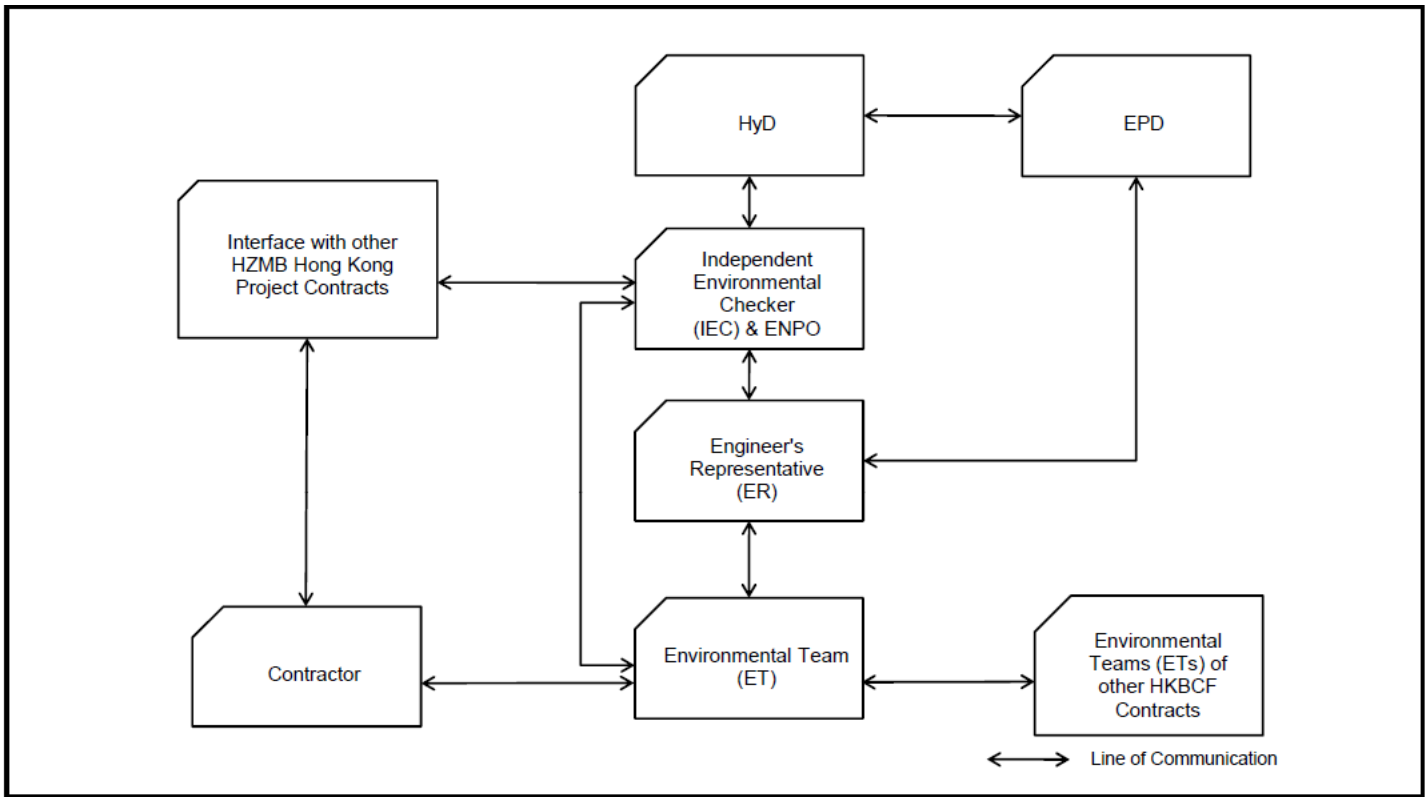
APPENDIX C

Project Organization for Environmental Works

Project Organisation for Environmental Works



APPENDIX D

Event and Action Plan

Event/Action Plan for Air Quality

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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Notify IEC and Contractor; 2. Identify source, investigate the causes of exceedance and propose remedial measures; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5 Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Inform IEC, ER, EPD and Contractor; 2. Identify source; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

APPENDIX E

Implementation Schedule for Environmental Mitigation Measures (EMIS)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality								
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
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	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S5.5.6.5	A4	Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	Control construction dust	Engineer	All construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation	√

S5.5.6.5	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	✓ (The dust monitoring at AMS6 under EM&A Programme for the Contract is covered by Contract No. HY/2011/03 while the dust monitoring at AMS7B under EM&A Programme for the Contract is covered by Contract No. HY/2013/04.)

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Air borne)								
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m^2), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises • The movable barrier should achieve at least 5dB(A) and the full enclosure should be	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance & its TM Annex 5, TM- EIA	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
/	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential	✓ The noise monitoring at NMS2 and NMS3C under EM&A

							premises	programme for the Contract are covered by Contract No. HY/2013/04.
Sediment								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	• Waste Disposal Ordinance • ETW B TC 34/2002	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Waste Management (Construction Waste)								
S8.3.8	WM1	*Construction and Demolition Material* The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETW BTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETW BTC 19/2005	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S8.3.9-S8.3.11	WM2	*C&D Waste* • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TC 19/2005	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S8.2.12-S8.3.15	WM3	*Chemical Waste* • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		• Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S8.3.16	WM4	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

S8.3.17	WM5	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Water Quality (Construction Phase)								
S.9.11.1.7	W2	<u>Land Works</u> General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include: • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the W PCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S9.11.1.7	W2	• all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)								
S10.7	E4	• Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S10.7	E5	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction		N/A As all the sections under Contract No. HY/2014/05 were handed over to the relevant authorities on 24 October 2018 and the site had been changed to closed area.
S10.7	E8	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brother Islands.	Minimise marine traffic disturbance on dolphins	Contractor	Marine Traffic	During construction		N/A
Fisheries								
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	Minimise impacts on marine water quality impacts	Marine Department	HKBCF	During operation		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Detailed Design Phase)								
S14.3.3.1	LV1	General design measures include: • Roadside planting and planting along the edge of the HKBCF Island is proposed; • Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations; • Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; • For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and • Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF.	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Construction Phase)								
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas. G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. (This mitigation measure is not applicable to the Contract.) G3. Not applicable as this is for HKLR. G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF. G5. Vegetation reinstatement and upgrading to disturbed areas. G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed. G7. Providing planting area around peripheral of HKBCF for tree planting screening effect. (This mitigation measure is not applicable to the Contract.) G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. (This mitigation measure is not applicable to the Contract.) G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt “natural-look” by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enchance “natural-look” of the new coastline. (This mitigation measure is not applicable to the Contract.)	Minimise visual & landscape impact	Contractor	Buildings 022, 023, 025, 032, 044 and 045	Construction stage		N/A N/A N/A ✓ N/A ✓ N/A N/A N/A
S14.3.3.3	LV3	Mitigate Visual Impacts V1. Minimize time for construction activities during construction period. V2. Not applicable to the Project HKBCF.						✓ N/A

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EM&A								
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	✓
S15.5 - S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Contractor	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	✓

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

APPENDIX F

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	0	0	0
From commencement date of contract to end of reporting month	6	0	0

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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
rom commencement date of contract to end of reporting month	0	0	0