Ref.: HYDHZMBEEM00_0_2447L.14 14 November 2014

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.
The PRE's Offices
5 Ying Hing Road,
Tung Chung, Lantau
Hong Kong

Attention: Mr. Darrel Paul Kingan

Dear Sir,

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

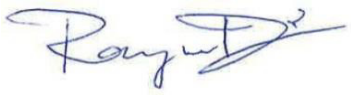
Contract No. HY/2013/01 – HZMB HKBCF – Passenger Clearance Building
Monthly Environmental Monitoring & Audit Report No. 1 for October 2014

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report No. 1 for October 2014 (Revision 1) certified by the ET Leader (ET's ref.: "5126871/19.10/OC025/SO/el" dated 14 November 2014) and provided to us via e-mail on 14 November 2014.

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

Thank you for your kind attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



Raymond Dai
Independent Environmental Checker

c.c. HyD – Mr. Matthew Fung (By Fax: 3188 6614)
HyD – Ms Lowell Chiu (By Fax: 3188 6614)
Atkins – Ms. Sharifah Or (By Fax: 2890 6343)
LCWJV – Mr. Donald Ip (By Fax: 3973 1188)

Internal: DY, YH, CL, ENPO Site

Q:\Projects\HYDHZMBEEM00\02_Proj_Mgt\02_Corr\HYDHZMBEEM00_0_2447L.14.doc

ENVIRON Hong Kong Limited 英環香港有限公司
Room 2403 Jubilee Centre, 18 Fenwick Street, Wan Chai, Hong Kong. Tel: 852 3465 2888 Fax: 852 3465 2899
www.environcorp.com

ATKINS

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Kowloon Hong Kong

Telephone (852) 2972 1000
Facsimile (852) 2890 6343

www.atkinsglobal.com

Your ref.
Our ref. 5126871/19.10/OC025/SO/el

Date: 14 November 2014

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

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

Attn: Mr. Donald Ip

Dear Mr. Ip,

Contract No. HY/2013/01
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities – Passenger Clearance Building
Certification of Monthly EM&A Report No.1

Atkins China Ltd. certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No.1 (Revision 1), in principle, conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/G.

Yours faithfully
for and on behalf of
Atkins China Ltd

Sharifah OR
Environmental Team Leader

cc.
1. AECOM – Mr. Darrel Kingan Fax.: 3468 2076

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/2013/01

Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities – Passenger Clearance Building

Monthly EM&A Report No.1
(Covering the Period from 26 September 2014 to 31 October 2014)

14 November 2014

Revision 1

Main Contractor

LEIGHTON 禮頓
俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Environmental Team

ATKINS

Contents

Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/2013/01 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) – Passenger Clearance Building (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to Leighton – Chun Wo Joint Venture (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

The Contract is part of Hong Kong – Zhuhai – Macao Bridge HKBCF which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/G for HKBCF was issued on 6 August 2013. These documents are available through the EIA Ordinance Register. Site preparation works of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014.

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 (Version1.0)and will be providing environmental team services to the Contract.

This is the first Monthly EM&A Report for the Contract which summaries findings of the EM&A works during the reporting period from 26 September 2014 to 31 October 2014.

Environmental Monitoring and Audit Progress

The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract is required to conduct impact air quality monitoring at AMS6 and AMS7 and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03.

The dates of site inspection during the reporting period are listed below:

Environmental Site Inspection	3, 8, 16, 23 and 29 October 2014

Breaches of Action and Limit Levels

No Action and Limit Level exceedance of 1-hr TSP level and no Limit Level exceedance of 24-hr TSP level were recorded at station AMS6 by Environmental Team of Contract No. HY/2011/03. An Action Level exceedance of 24-hr TSP level was recorded at AMS6 by the Environmental Team of Contract No. HY/2011/03 on 15 and 27 October 2014. Investigations and results for the air quality exceedance at AMS6 were reported in the Monthly EM&A Report prepared for Contract No. HY/2011/03.

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

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

Complaint Log

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

Notifications of Summons and Successful Prosecutions

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

Reporting Change

There was no reporting change in the reporting period.

Future Key Issues

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

- Piling Works at WA1;
- Pre-drilling Works at WA1;
- Construction of Office, Welfare facilities and Canteen Building at WA1;
- Marine Solidification/Stabilization work at the South of WA1; and
- Construction of CLP substation Building at WA2.

1 Introduction

1.1 Basic Project Information

1.1.1 This monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/2013/01 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to Leighton – Chun Wo Joint Venture (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

1.1.2 The Contract is part of Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499). An Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/G for HKBCF was issued on 6 August 2013. These documents are available through the EIA Ordinance Register. Site preparation work of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014. The works areas of the Contract are shown in **Appendix A**.

1.1.3 The proposed works under this Contract comprise the following:

- Construction of Passenger Clearance Building (PCB) including architectural and builders works, structural steel roof and reinforced concrete frames, basement, piled foundations, aluminium roof, curtain wall facades, building services and electrical and mechanical works;
- Installation of district cooling system including seawater cooling intake pumping station, seawater intake and discharge water pipelines work; Installation of Chilled water cooling pipelines system, heat exchanger and chilled pumping system;
- Construction of transport and associated facilities connecting to the PCB entailing the Emergency Vehicular Access, an at-grade mainland side drop-off area, an Hong Kong side elevated drop-off deck and 8 nos. of footbridge links;
- Construction of a public toilet, 6 nos. of C&ED observation booths, a generator set building and a refuse storage & material recovery chamber;
- Construction of a section of 70m common utilities enclosure and staff subway and civil provisions for associated electrical and mechanical works;
- Construction of drainage, sewerage, fresh water & flushing water supply and utilities & service works;
- Construction of civil provisions, including draw pits & ducting for Traffic Control and Surveillance System (TCSS) and Extra Low Voltage System (ELV);
- Construction of box culvert A;
- Construction of 2 nos. of vehicular bridge abutments at mainland side pickup area earthmound;
- Construction of geotechnical works including top up the existing earth mound from +11.5mPD to the finished level as stated in the Contract, reinforced earth slope and fill slopes and special backdrop manhole at mainland side pick up area earthmound;
- Landscape hardworks and softworks; and
- Other works which are shown on the Drawings or specified in the Specification or which may be ordered in accordance with the Contract.

1.1.4 This is the first Monthly Environmental Monitoring and Audit (EM&A) Report for the Contract which summaries the audit findings of the EM&A programme during the reporting period from 26 September 2014 to 31 October 2014.

1.2 Project Organisation

1.2.1 The project organization structure and lines of communication with respect to the on-site environmental management structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Darrel Kingan	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Leighton – Chun Wo Joint Venture)	Project Manager	Gary Wong	3143 7013	3973 1188
	Environmental Officer	Donald Ip	6461 8635	39731188
Environmental Team (Atkins China Limited)	Environmental Team Leader	Sharifah Or	29721802	2890 6343

1.3 Construction Programme

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

1.4 Construction Works Undertaken During the Reporting Period

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

- Piling works at WA1;
- Pre-drilling works at WA1;
- Construction of office, welfare facilities and canteen building at WA1; and
- Marine Solidification/Stabilization work at the South of WA1.

2 Air Quality Monitoring

2.1 Monitoring Locations

2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract is required to conduct impact air quality monitoring at AMS6 and AMS7 as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03. **Figure 2.1** shows the locations of air monitoring stations.

Table 2.1 Construction Dust Monitoring Locations

ID	Location Description
AMS 6(1)	Dragonair/CNAC (Group) Building
AMS 7(2)	Hong Kong SkyCity Marriott Hotel

Remarks:
(1) The ET of the Contract should conduct impact air quality monitoring at AMS6 as part of EM&A programme if this monitoring station is no longer covered under Contract No. HY/2011/03.
(2) The ET of the Contract should conduct impact air quality monitoring at AMS7 (or alternative location) as part of EM&A programme if this monitoring station is no longer covered under Contract No. HY/2010/02.

2.2 Monitoring Requirements

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

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

Table 2.2 Action and Limit Levels for 1-hour TSP

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

Table 2.3 Action and Limit Levels for 24-hour TSP

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

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

2.2.4 If an exceedance is recorded at AMS6 and AMS7, an investigation will be undertaken for the Contract and findings will be reported in the monthly EM&A Report.

2.3 Monitoring Results

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

2.3.2 No Action and Limit Level exceedance of 1-hr TSP level and no Limit Level exceedance of 24-hr TSP level were recorded at station AMS6 by Environmental Team of Contract No. HY/2011/03. An Action Level exceedance of 24-hr TSP level was recorded at AMS6 by the Environmental Team of Contract No. HY/2011/03 on 15 and 27 October 2014. Investigations and results for the air quality exceedance at AMS6 were reported in the Monthly EM&A Report prepared for Contract No. HY/2011/03

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

3 Noise Monitoring

3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works. The ET of the Contract is required to conduct impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2010/02. **Figure 3.1** shows the locations of noise monitoring stations.

Table 3.1 Construction Dust Monitoring Locations

ID	Location Description
NMS2(1)	Seaview Crescent
NMS3B(1)(2)	Site Boundary of Site Office Area at Works Area WA2

Remarks:
(1) The ET of the Contract should conduct impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2010/02.
(2) The Action and Limit Levels for schools will be applied for this alternative monitoring location.

3.2 Monitoring Requirements

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

3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3.2**.

Table 3.2 Action and Limit Level for Construction Noise

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

Notes :
If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
* Reduce to 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 an exceedance is recorded at NMS2 and NMS3B, an investigation will be undertaken for the Contract and findings will be reported in the monthly EM&A Report.

3.3 Monitoring Results

3.3.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2010/02. No noise exceedances were recorded by the ET of Contract No. HY/2010/02 during the reporting period.

4 ENVIRONMENTAL SITE INSPECTION AND AUDIT

4.1 Site Inspection

4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting period, a site inspection were carried out on 3, 8, 16, 23 and 29 October 2014.

4.1.2 Particular observations during the site inspections are described below.

3 October 2014

(a) A haul road was dry and there would be a potential to generate fugitive emission. The haul road was observed wet. This observation was closed on 8 October 2014.

(b) No drip trays were provided for chemical containers at Chun Wo work areas. The chemical containers at Chun Wo work areas were removed. This observation was closed on 8 October 2014.

8 October 2014

(a) Stagnant water was observed near Chun Wo works area. The stagnant water near Chun Wo works area was cleared. This observation was closed on 16 October 2014.

(b) Temporary stockpiles of untreated marine mud were not covered. Temporary stockpiles of untreated marine mud were covered properly. This observation was closed on 16 October 2014.

(c) The mixing unit for excavated marine mud was not enclosed. A dust enclosure was provided for the mixing unit of excavated marine mud. This observation was closed on 16 October 2014.

16 October 2014

(a) A chemical drum without a suitable label was found near a generator. A label was provided for the chemical drums. (This observation was closed on 23 October 2014.)

23 October 2014

No observations were made.

29 October 2014

No observations were made.

4.2 Advice on the Solid and Liquid Waste Management Status

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

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

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

4.3 Environmental Licenses and Permits

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

4.4 Implementation Status of Environmental Mitigation Measures

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

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

4.5 Summary of Exceedance of the Environmental Quality Performance Limit

4.5.1 No Action and Limit Level exceedance of 1-hr TSP level and no Limit Level exceedance of 24-hr TSP level were recorded at station AMS6 by Environmental Team of Contract No. HY/2011/03. An Action Level exceedance of 24-hr TSP level was recorded at AMS6 by the Environmental Team of Contract No. HY/2011/03 on 15 and 27 October 2014. Investigations and results for the air quality exceedance at AMS6 were reported in the Monthly EM&A Report prepared for Contract No. HY/2011/03.

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

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

4.6 Summary of Complaints, Notification of Summons and Successful Prosecution

4.6.1 There were no complaints received during the reporting period.

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

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

5 FUTURE KEY ISSUES

5.1 Construction Programme for the Coming Months

5.1.1 As informed by the Contractor, the major construction activities for November 2014 are summarized in **Table 5.1**.

Table 5.1 Construction Activities for November 2014

Site Area	Description of Activities
WA1	Piling Works
WA1	Pre-Drilling Works
WA1	Construction of Office, Welfare Facilities and Canteen Building
WA1	Marine Solidification/Stabilization Work
WA2	Construction of CLP Substation Building

5.2 Environmental Site Inspection Schedule for the Coming Month

5.2.1 The tentative schedule for weekly site inspections for November 2014 is provided in **Appendix I**.

6 CONCLUSION

6.1 Conclusions

6.1.1 The site preparation work of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014.

6.1.2 No Action and Limit Level exceedance of 1-hr TSP level and no Limit Level exceedance of 24-hr TSP level were recorded at station AMS6 by Environmental Team of Contract No. HY/2011/03. An Action Level exceedance of 24-hr TSP level was recorded at AMS6 by the Environmental Team of Contract No. HY/2011/03 on 15 and 27 October 2014. Investigations and results for the air quality exceedances at AMS6 were reported in the Monthly EM&A Report prepared for Contract No. HY/2011/03.

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

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

6.1.5 An environmental site inspection was carried out on 3, 8, 16, 23 and 29 October 2014. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

6.1.6 There were no complaints received during the reporting period.

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

FIGURES

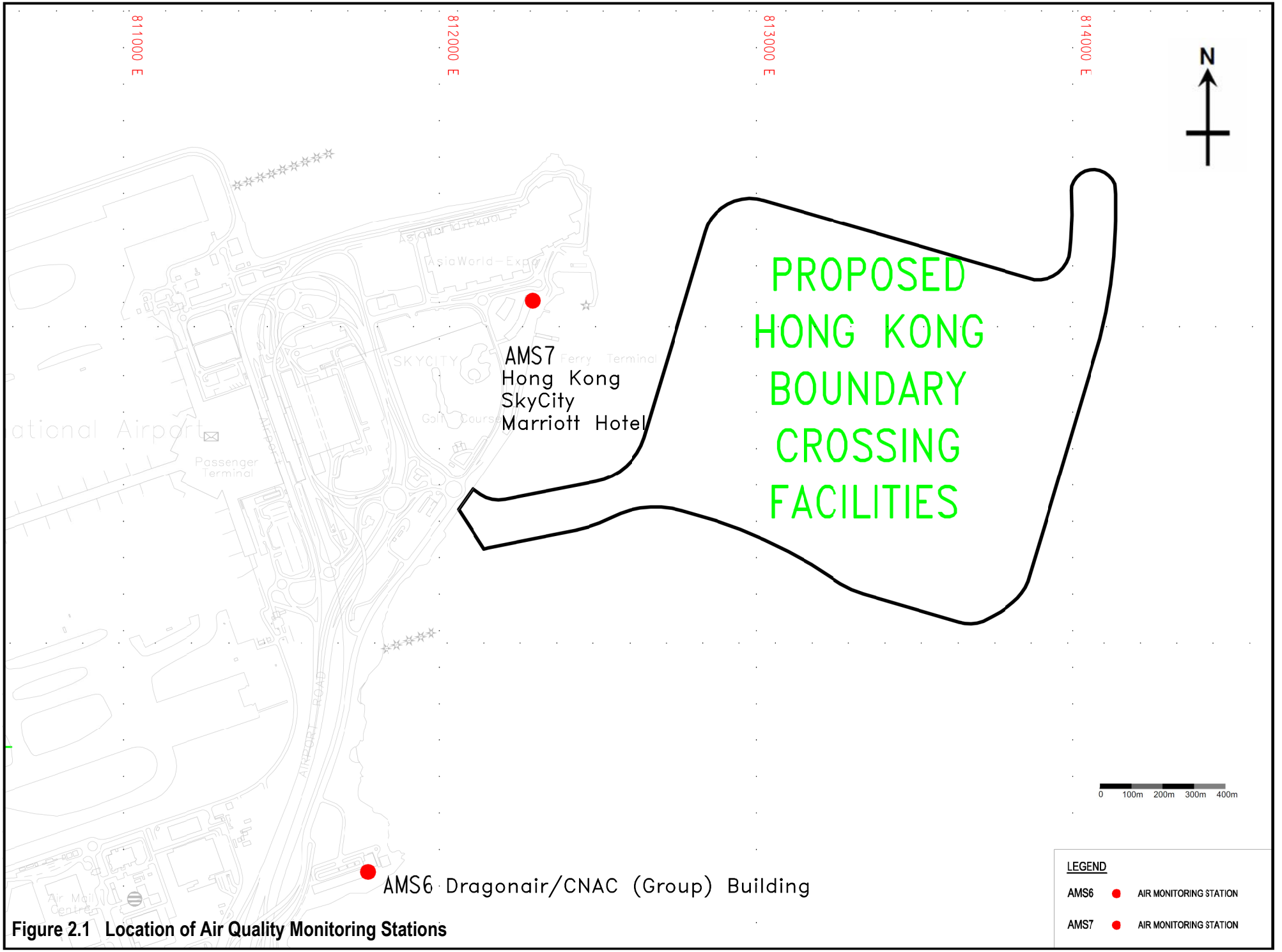


Figure 2.1 Location of Air Quality Monitoring Stations

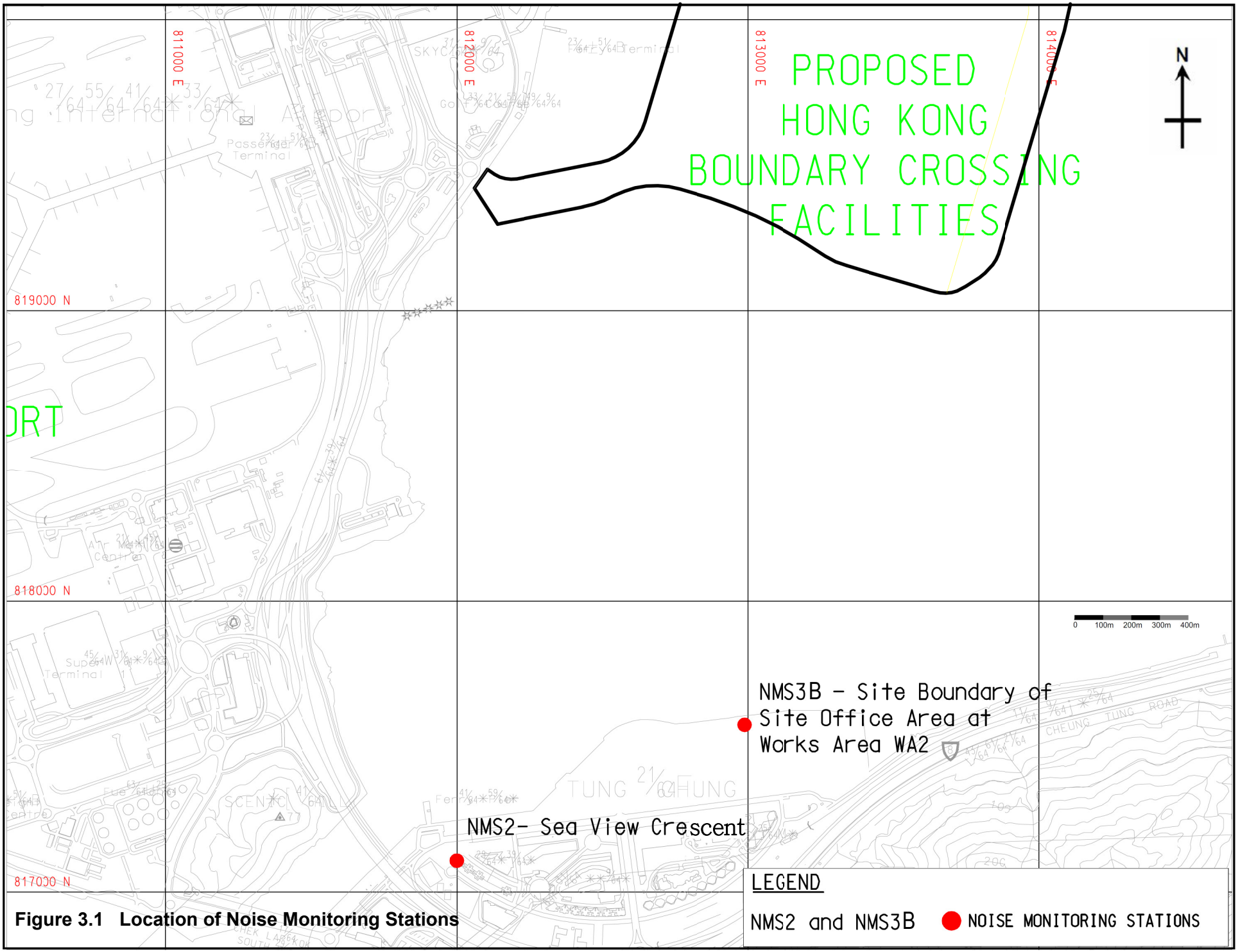
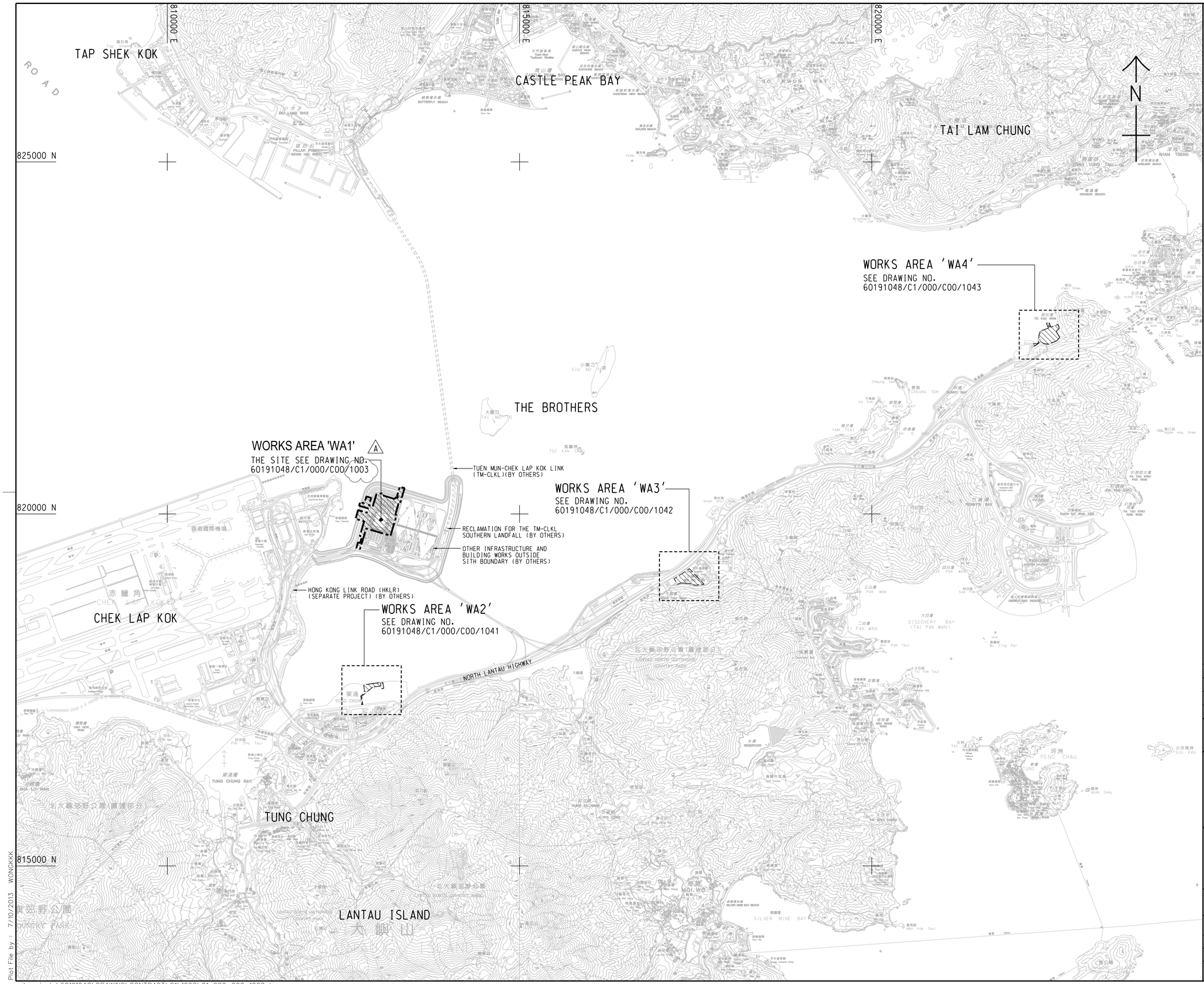


Figure 3.1 Location of Noise Monitoring Stations

APPENDIX A

Location of Works Areas



NOTES:

1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
2. DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C1/000/C00/1041 TO 1043.

LEGEND: A

SITE BOUNDARY

WORKS AREA

REV. 修訂	DESCRIPTION 內容摘要	D.E. P.E. CHECKED 查核	DATE 日期
B	WORKING DRAWING	BWCW SCI	JUN.14
A	TENDER ADDENDUM NO. 1	BWCW SCI	OCT.13
-	TENDER DRAWING	BWCW SCI	SEP.13

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
- PASSENGER CLEARANCE BUILDING

SITE LOCATION PLAN

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI

Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1000B

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2013/01
DRAWN BY 繪圖	WSY	P. Dir. APPROVED 負責人	TKH
SCALE 比例	A1 1 : 25000	STATUS 階段	WORKING DRAWING
DIMENSIONS ARE IN 尺寸單位	METRES		

Plot File by : 7/10/2013 WONGKKK

p:\projects\60191048\DRAWING\CONTRACT\C1\1000\C1_000_C00_1000.dgn

812500 E

813000 E

813500 E

820500 N

820000 N

819500 N

SKYCITY

GATE 2 TO BE CONSTRUCTED
WHEN HY/2013/02 CONTRACTOR
TAKE OVER PORTION 1

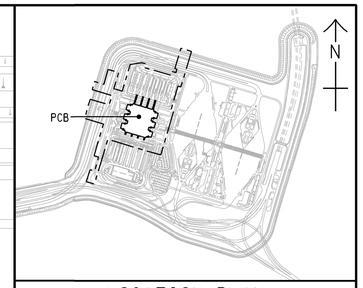
HAUL ROAD TO BE CONSTRUCTED
DIVERTED, MANAGED AND MAINTAINED
BY HY/2013/01 CONTRACT

C3

GATE TO BE CONSTRUCTED
BY CLP

MARINE LOADING AND UNLOADING
POINTS, EXACT LOCATION AND
EXTENT TO BE LIAISED AND
CONFIRMED WITH HY/2013/02
CONTRACTOR

GATE 1 TO BE CONSTRUCTED
AT THE COMMENCEMENT OF THE CONTRACT



LOCATION PLAN
SCALE 1 : 20000

NOTES:

1. COORDINATES ARE BASED ON HONG KONG METRIC GRID (1980) UNLESS OTHERWISE NOTED.
2. LEVELS ARE IN METRES RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD) UNLESS OTHERWISE NOTED.
3. DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
4. SETTING OUT, DIMENSIONS, LEVELS, COORDINATES ARE TO BE CALCULATED BY THE CONTRACTOR. NO INFORMATION SHOULD BE SCALED PHYSICALLY OR ELECTRONICALLY FROM THE DRAWINGS OR FILES.
5. SITE ACCESS SHALL BE HARD PAVED WITH PROPER DRAINAGE PROVIDED. IT SHALL BE KEPT UNOBSTRUCTED AND UNDISRUPTED AT ALL TIMES.

LEGEND:

SITE BOUNDARY

7.3m CLEAR WIDTH CONSTRUCTION HAUL ROAD

INDICATIVE 20m WIDE VEHICULAR ACCESS BY RECLAMATION CONTRACT HY/2010/02

REV. 修訂	DESCRIPTION 內容摘要	D.E.	P.E. CHECKED 查核	DATE 日期
-	TENDER DRAWING	BWCW	SCI	SEP.13

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
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA1

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1044

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 負責人
BWCW	HY/2013/01	EMSC
DRAWN BY 繪圖 WSY	STATUS 編改	
SCALE 比例 A1 1 : 2500		
DIMENSIONS ARE IN 尺寸單位 METRES		

Plot File by : 2013/9/10 WANGSY

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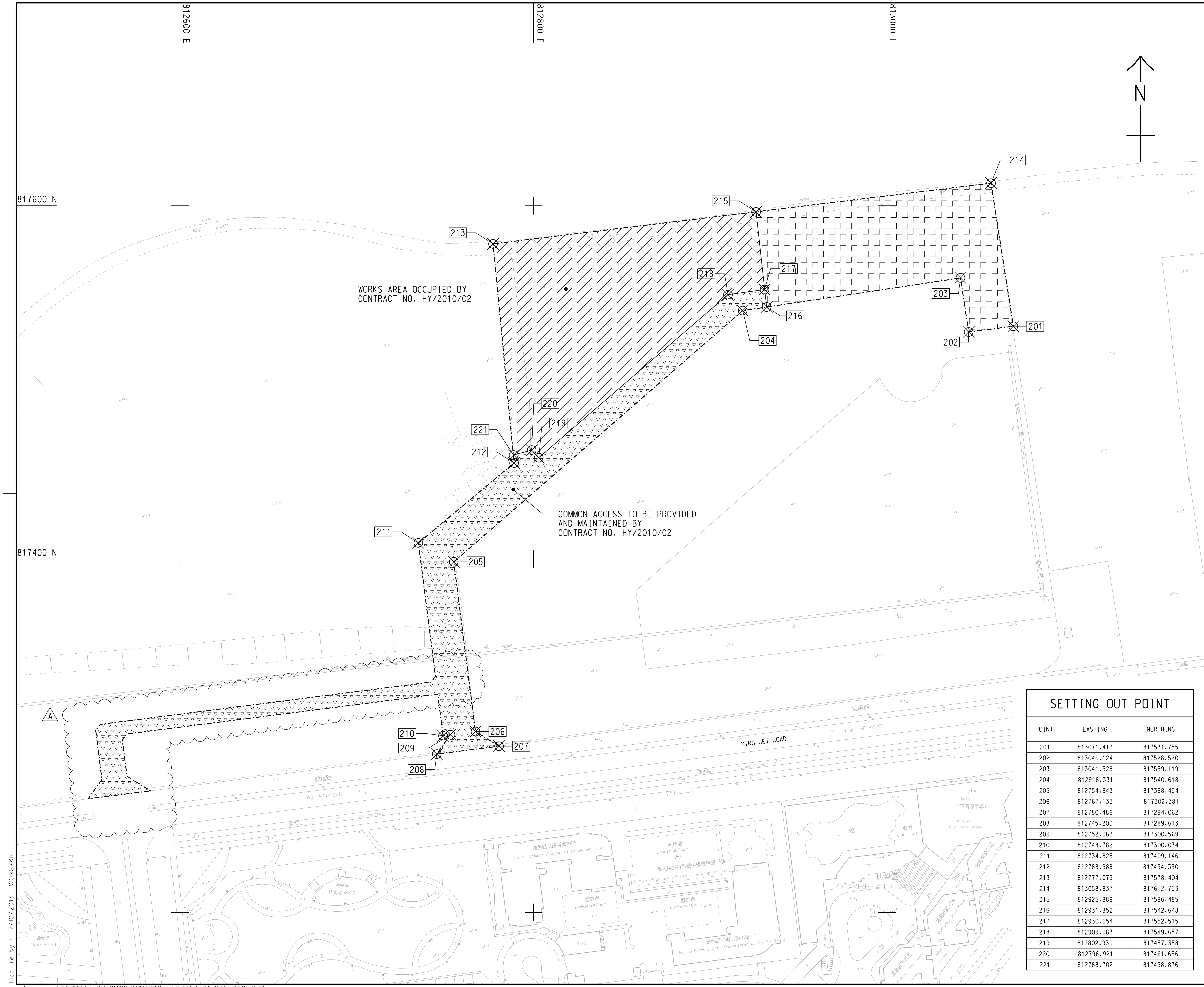

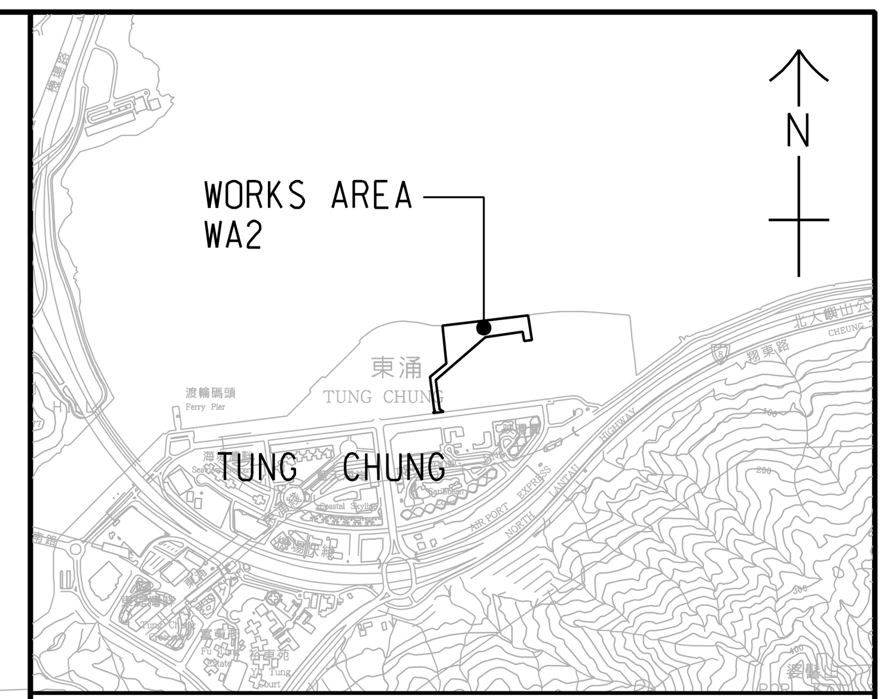

LOCATION PLAN

SCALE 1 : 25000

NOTES:

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

LEGEND:

- WORKS AREA BOUNDARY
- PORTION 2.1
- PORTION 2.2
- PORTION 2.3

SETTING OUT POINT

POINT	EASTING	NORTHING
201	813071.417	817531.755
202	813046.124	817528.520
203	813041.528	817559.119
204	812918.331	817540.618
205	812754.843	817398.454
206	812767.133	817302.381
207	812780.486	817294.062
208	812745.200	817289.613
209	812752.963	817300.569
210	812748.782	817300.034
211	812734.825	817409.146
212	812788.988	817454.350
213	812777.075	817578.404
214	813058.837	817612.753
215	812925.889	817596.485
216	812931.852	817542.648
217	812930.654	817552.515
218	812909.983	817549.657
219	812802.930	817457.358
220	812798.921	817461.656
221	812788.702	817458.876

REV. 修訂	DESCRIPTION 內容摘要	CHECKED 複核 D.E.	CHECKED 複核 P.E.	DATE 日期
B	WORKING DRAWING	BWCW	SCI	JUN.14
A	TENDER ADDENDUM NO. 1	BWCW	SCI	OCT.13
-	TENDER DRAWING	BWCW	SCI	SEP.13

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
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA2

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1041B

DESIGNED BY 設計: BWCW
CONTRACT NO. 合約編號: HY/2013/01
P. Dir. APPROVED 批准人: TKH
DRAWN BY 繪圖: WSY
STATUS 階段: **WORKING DRAWING**
SCALE 比例: A1 1 : 1000
DIMENSIONS ARE IN 尺寸單位: METRES

Plot File by : 7/10/2013 WONGKKK

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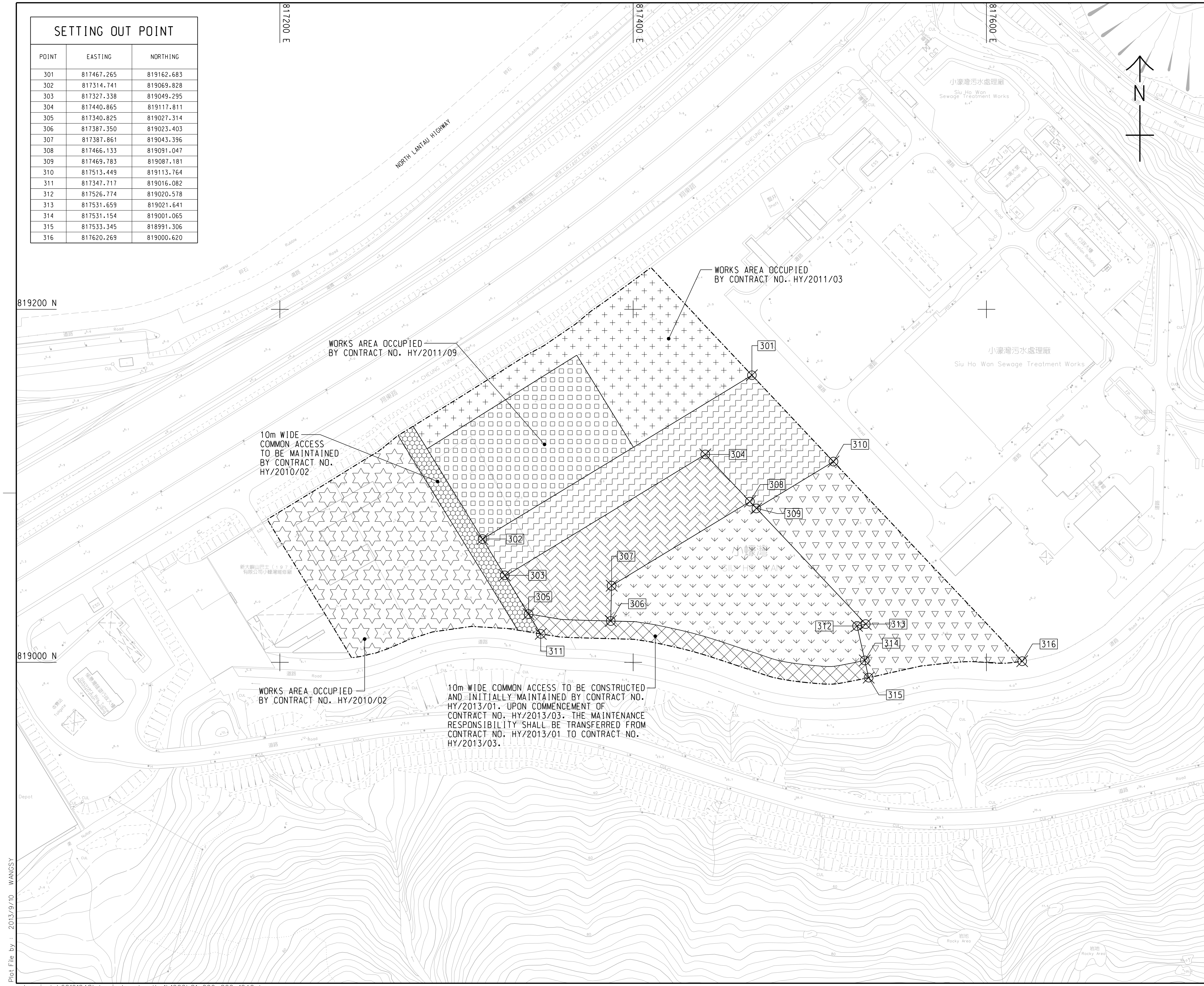
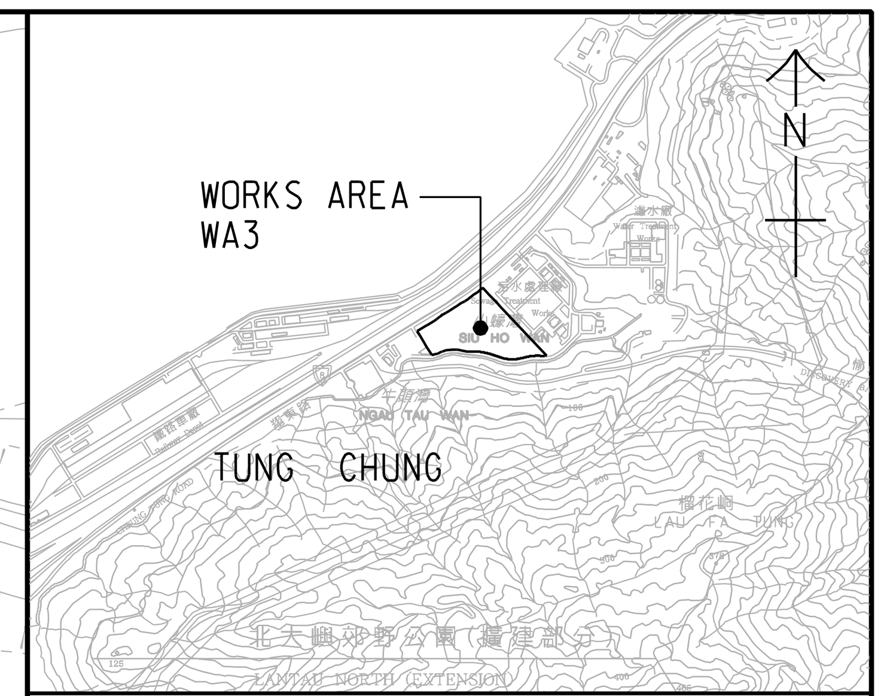
SETTING OUT POINT

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	817526.774	819020.578
313	817531.659	819021.641
314	817531.154	819001.065
315	817533.345	818991.306
316	817620.269	819000.620





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

REV. 修訂	DESCRIPTION 內容摘要	D.E. CHECKED 複核	P.E.	DATE 日期
A	WORKING DRAWING	BWCW	SCI	JUN.14
-	TENDER DRAWING	BWCW	SCI	SEP.13

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
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1042A

DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2013/01	P. Dir. APPROVED 批准人 TKH
DRAWN BY 繪圖 WSY	STATUS 階段 WORKING DRAWING	
SCALE 比例 A1 1 : 1000		
DIMENSIONS ARE IN 尺寸單位 METRES		

Plot File by : 2013/9/10 WANGSY

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SETTING OUT POINT

POINT	EASTING	NORTHING
401	822488.151	822632.315
402	822640.593	822689.415
403	822515.608	822559.848
404	822610.940	822599.642
405	822629.428	822607.359
406	822526.988	822529.813
407	822618.348	822567.950
408	822542.232	822489.581
409	822584.983	822507.426
410	822606.866	822516.561
411	822560.278	822441.956
412	822602.949	822460.010
413	822621.914	822467.959
414	822624.130	822470.998
415	822651.725	822508.856

822400 E

822600 E

822600 N

822400 N

TO KAU WAN

401 402 403 404 405 406 407 408 409 410 411 412 413 414 415

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/2013/05

9m WIDE COMMON ACCESS TO BE CONSTRUCTED AND MAINTAINED BY CONTRACT NO. HY/2013/01

9m WIDE COMMON ACCESS TO BE MAINTAINED BY CONTRACT NO.HY/2013/01

NORTH LANTAU HIGHWAY

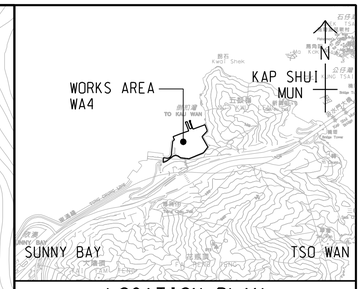
大青洲 TAI TSING CHAU

船廠 Shipyard

海堤 Seawall

碎石 Rubble

隧道 Tunnel



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 4.1
- PORTION 4.2
- PORTION 4.3
- PORTION 4.4
- PORTION 4.5
- PORTION 4.6
- PORTION 4.7
- PORTION 4.8

REV. 修訂	DESCRIPTION 內容摘要	D.C.	P.C. CHECKED 審核	DATE 日期
-	TENDER DRAWING	BWCW	SCI	SEP.13

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
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA4

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1043

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2013/01	EMSC
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	

Plot File by : 2013/9/10 WANGSY

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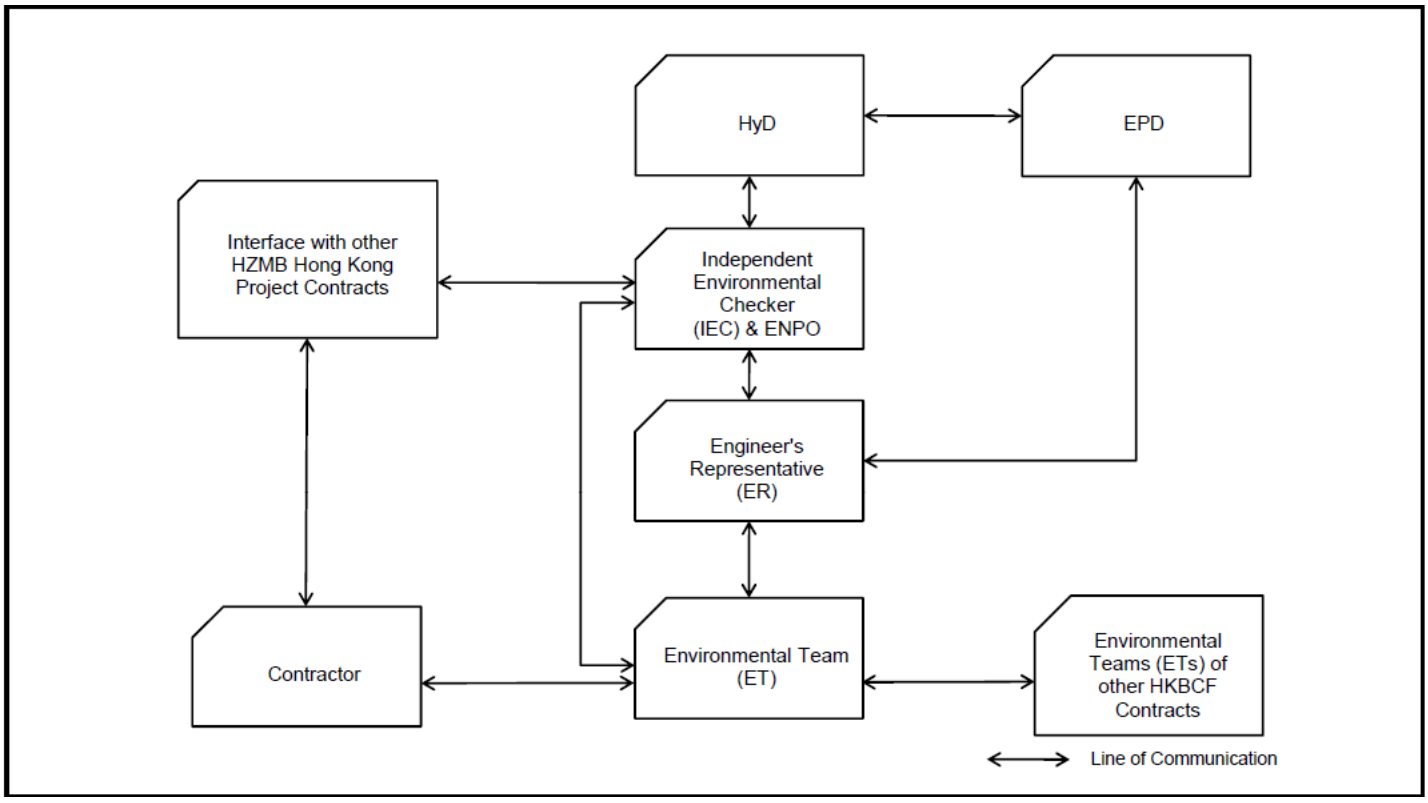
APPENDIX B

Project Organization for Environmental Works

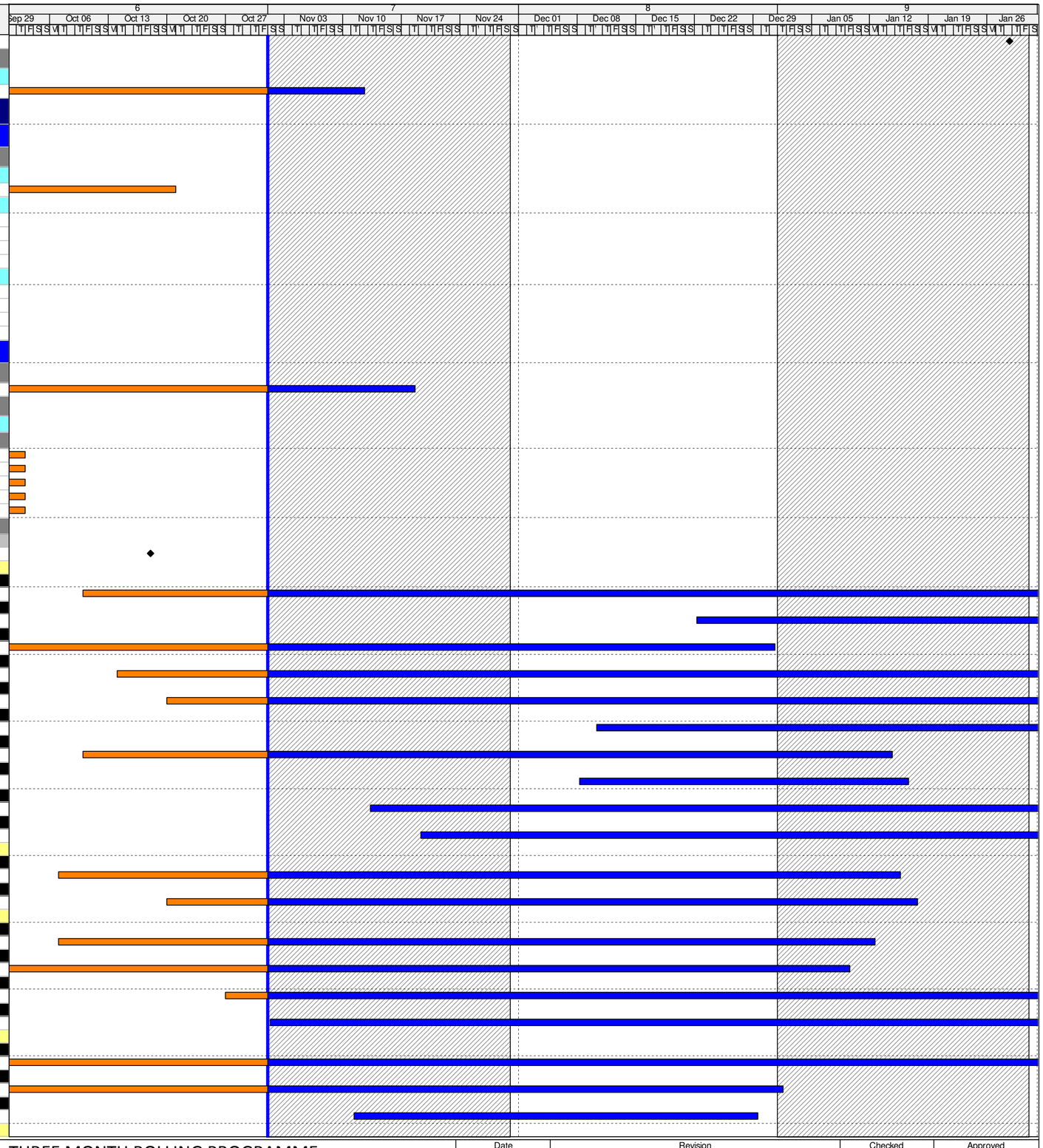
Project Organisation for Environmental Works



APPENDIX C

Construction Programme

Activity ID	Activity Name	Original Duration	Start	Finish	Physical % Complete
PCB-XX-1920	Falsework - Subcontractor Award	0.0		28-Jan-15	0%
Structural Steel Roof		90.0	15-May-14 A	12-Nov-14	
Structural Steelwork (Materials)		90.0	15-May-14 A	12-Nov-14	
PCB-1060	Award sub-contractor (Steel Roof)	90.0	15-May-14 A	12-Nov-14	100%
CONSTRUCTION		266.0	10-May-14 A	16-May-15	
Site Establishment Works		149.0	10-May-14 A	21-Oct-14 A	
Site Accomodation		149.0	10-May-14 A	21-Oct-14 A	
Engineers Interim Accomodation		180.0	10-May-14 A	21-Oct-14 A	
PCB-1350	ENG - Provide Engineers Interim Office (6 months)	180.0	10-May-14 A	21-Oct-14 A	100%
Engineers Site Accomodation (Area W02)		18.0	22-Aug-14 A	13-Sep-14 A	
PCB-A-1036	ENG - Mobilise office furniture and equipment	3.0	22-Aug-14 A	13-Sep-14 A	100%
PCB-A-1038	ENG - Mobilise and install Computer equipment and Telecoms	3.0	22-Aug-14 A	13-Sep-14 A	100%
PCB-A-1042	ENG - Engineers Accomodation Complete	0.0		13-Sep-14 A	100%
PCB-2880	ENG - Engineers Accomodation (Partial Move-in)	0.0		13-Sep-14 A	100%
Contractors Site Accomodation (Area W03)		22.0	06-Aug-14 A	06-Sep-14 A	
PCB-A-1130	CON - Mobilise and install Computer equipment and Telecoms	6.0	06-Aug-14 A	06-Sep-14 A	100%
PCB-2700	CON - Construct Roof of Car Park	4.0	23-Aug-14 A	06-Sep-14 A	100%
PCB-2890	CON - JV Accomodation (Partial Move-in)	0.0		05-Sep-14 A	100%
PCB-A-1134	CON - JV Accomodation Complete	0.0		06-Sep-14 A	100%
Passenger Clearance Building		251.0	11-Jun-14 A	16-May-15	
Site Establishment Works		36.0	13-Jun-14 A	18-Nov-14	
PCB-2470	PCB(A1) - Site Hoarding and Fencing	36.0	13-Jun-14 A	18-Nov-14	10%
Piling		251.0	11-Jun-14 A	16-May-15	
Portion A1		251.0	11-Jun-14 A	16-May-15	
Pre-Drilling		157.0	12-Jun-14 A	03-Oct-14 A	
PCB-2260	PCB - Pre-Drilling 112	112.0	12-Jun-14 A	03-Oct-14 A	100%
PCB-02-12541	BCA(A1)- Pre-Drilling 40 number	42.0	05-Aug-14 A	03-Oct-14 A	100%
PCB-2280	GL B - Pre-Drilling 6 number	36.0	12-Aug-14 A	03-Oct-14 A	100%
PCB-02-12551	BCA(A2)- Pre-Drilling 10 number	24.0	25-Aug-14 A	03-Oct-14 A	100%
PCB-02-12521	WVC (A1) - Pre-Drilling 7 number	12.0	27-Aug-14 A	03-Oct-14 A	100%
Bored Piling		242.0	11-Jun-14 A	16-May-15	
Chun Wo		190.0	22-Sep-14 A	04-May-15	
PCB-3480	Full Possession of Portion A1	0.0	18-Oct-14 A		100%
Sam Wo Contractor		174.0	29-Sep-14 A	04-May-15	
PLANT F1 - 1.5m pile use 2.5 casing at Drop off area and 2.0m Pile Use 3.0m Casing		174.0	10-Oct-14 A	04-May-15	
PCBCW-0050	12 Number Bored Piles	174.0	10-Oct-14 A	04-May-15	5.83%
PLANT F2 - 1.5m pile use 2.5 casing at Drop off area and 2.0m Pile Use 3.0m Casing		78.0	22-Dec-14	09-Mar-15	
PCBCW-0530	5 Number Bored Piles	78.0	22-Dec-14*	09-Mar-15	0%
PLANT E1 - 1.5m pile use 2.5 casing at drop off area and 2.0m Pile Use 2.5m Casing		29.0	29-Sep-14 A	31-Dec-14	
PCBCW-1020	8 Number Bored Piles	29.0	29-Sep-14 A	31-Dec-14	38.75%
PLANT E2 - 1.5m pile use 2.5 casing at drop off area and 2.0m Pile Use 2.5m Casing		28.0	14-Oct-14 A	23-Feb-15	
PCBCW-1100	9 Number Bored Piles	28.0	14-Oct-14 A	23-Feb-15	3.3%
PLANT A- 2.0 pile use 2.5m casing & 2.5m Pile use 3m Casing		29.0	20-Oct-14 A	07-Mar-15	
PCBCW-1470	10 Number Bored Piles	29.0	20-Oct-14 A	07-Mar-15	1%
PLANT C - 1.5 pile use 2.0m casing		126.0	10-Dec-14	14-Apr-15	
PCBCW-1880	9 Number Bored Piles	126.0	10-Dec-14*	14-Apr-15	0%
PLANT G1 - 2.0m Pile Use 2.5m Casing		29.0	10-Oct-14 A	14-Jan-15	
PCBCW-2290	7 Number Bored Piles	29.0	10-Oct-14 A	14-Jan-15	5.71%
PLANT G2 - 2.0m Pile Use 2.5m Casing		40.0	08-Dec-14	16-Jan-15	
PCBCW-2570	2 Number Bored Piles	40.0	08-Dec-14*	16-Jan-15	0%
PLANT B - 2.0m Pile Use 2.5m Casing		126.0	13-Nov-14	18-Mar-15	
PCBCW-2660	9 Number Bored Piles	126.0	13-Nov-14*	18-Mar-15	0%
PLANT D - 1.5m Pile Use 2.0m Casing		138.0	19-Nov-14	05-Apr-15	
PCBCW-3030	10 Number Bored Piles	138.0	19-Nov-14*	05-Apr-15	0%
New Concept Constructor		53.0	07-Oct-14 A	17-Jan-15	
PLANT I - 2.0m Pile use 3.0m casing		29.0	07-Oct-14 A	15-Jan-15	
PCBCW-3450	7 Number Bored Piles	29.0	07-Oct-14 A	15-Jan-15	17%
PLANT J - 2.0m Pile use 3.0m casing		29.0	20-Oct-14 A	17-Jan-15	
PCBCW-3860	9 Number Bored Piles	29.0	20-Oct-14 A	17-Jan-15	4.4%
CGC Contractor		138.0	24-Sep-14 A	18-Mar-15	
PLANT C - 1.5m Pile use 2.0 Casing (Main Building) & 2.0m dia. Use 3.0m casing (Drop Off Ar		26.0	07-Oct-14 A	12-Jan-15	
PCBCW-4160	9 Number Bored Piles	26.0	07-Oct-14 A	12-Jan-15	20%
PLANT B - 2.0 pile use 2.5m casing (Main Building) & 2.5m Pile use 3m Casing (Drop Off Area)		29.0	24-Sep-14 A	09-Jan-15	
PCBCW-4690	10 Number Bored Piles	29.0	24-Sep-14 A	09-Jan-15	18%
PLANT A-1.5m pile use 2.0 casing (Drop Off) & 2.0 pile use 2.5m casing (Main Building)		27.0	27-Oct-14 A	18-Mar-15	
PCBCW-5220	11 Number Bored Piles	27.0	27-Oct-14 A	18-Mar-15	0.9%
PLANT D -1.5m pile use 2.0 casing & 2.0 pile use 2.5m casing		138.0	01-Nov-14	18-Mar-15	
PCBCW-5430	10 Number Bored Piles	138.0	01-Nov-14*	18-Mar-15	0%
Triangular Force Contractor		78.0	23-Sep-14 A	20-Feb-15	
PLANT A- 1.5m Pile Use 2.0m Casing		26.0	23-Sep-14 A	20-Feb-15	
PCBCW-6050	10 Number Bored Piles	26.0	23-Sep-14 A	20-Feb-15	14%
PLANT B1 - 1.5m Pile Use 2.0m Casing		29.0	30-Sep-14 A	01-Jan-15	
PCBCW-6300	7 Number Bored Piles	29.0	30-Sep-14 A	01-Jan-15	21.4%
PLANT B2 - 1.5m Pile Use 2.0m Casing		49.0	11-Nov-14	29-Dec-14	
PCBCW-6540	3 Number Bored Piles	49.0	11-Nov-14*	29-Dec-14	0%
Chun Wu Contractor		211.0	22-Sep-14 A	22-Apr-15	



Actual Work
Remaining Work
Critical Remaining Work
Milestone

THREE MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
01-Nov-14	3 Month Rolling Programme - 1st November 2014	SGJ	SGJ

Activity ID	Activity Name	Original Duration	Start	Finish	Physical % Complete
PLANT A- 2.0 pile use 2.5m casing		29.0	22-Sep-14 A	27-Feb-15	
PCBCW-6680	9 Number Bored Piles	29.0	22-Sep-14 A	27-Feb-15	31.11%
PLANT B - 2.0 pile use 2.5m casing		29.0	29-Sep-14 A	16-Feb-15	
PCBCW-7140	10 Number Bored Piles	29.0	29-Sep-14 A	16-Feb-15	29%
PLANT C - 2.0 pile use 2.5m casing		146.0	28-Nov-14	22-Apr-15	
PCBCW-7520	10 Number Bored Piles	146.0	28-Nov-14*	22-Apr-15	0%
PLANT D - 2.0 pile use 2.5m casing		109.0	15-Nov-14	03-Mar-15	
PCBCW-7930	9 Number Bored Piles	109.0	15-Nov-14*	03-Mar-15	0%
Tyson		232.0	11-Jun-14 A	16-May-15	
PCB Tyson Piles (110 Piles)		232.0	11-Jun-14 A	16-May-15	
PCB-2270	PCB(A1) - Pre-Drilling 110	55.0	11-Jun-14 A	04-Oct-14 A	100%
1st Group		150.0	03-Oct-14 A	05-May-15	
PCB-3330	PCB - Bored Piling to PCB - 8 Piles	150.0	03-Oct-14 A	05-May-15	3.75%
2nd Group		150.0	27-Sep-14 A	08-May-15	
PCB-3340	PCB - Bored Piling to PCB - 8 Piles	150.0	27-Sep-14 A	08-May-15	3.75%
3rd Group		121.0	13-Oct-14 A	30-Apr-15	
PCB-3350	PCB - Bored Piling to PCB - 8 Piles	121.0	13-Oct-14 A	30-Apr-15	2.5%
4th Group		121.0	12-Nov-14	11-Apr-15	
PCB-3460	PCB - Bored Piling to PCB - 7 Piles	121.0	12-Nov-14*	11-Apr-15	0%
5th Group		104.0	16-Oct-14 A	09-May-15	
PCB-3450	PCB - Bored Piling to PCB - 8 Piles	104.0	16-Oct-14 A	09-May-15	1.25%
6th Group		98.0	25-Sep-14 A	18-Feb-15	
PCB-3440	PCB - Bored Piling to PCB - 8 Piles	98.0	25-Sep-14 A	18-Feb-15	13.75%
7th Group		108.0	13-Oct-14 A	09-May-15	
PCB-3430	PCB - Bored Piling to PCB - 8 Piles	108.0	13-Oct-14 A	09-May-15	1.25%
8th Group		107.0	22-Oct-14 A	12-May-15	
PCB-3420	PCB - Bored Piling to PCB - 8 Piles	107.0	22-Oct-14 A	12-May-15	1.25%
9th Group		106.0	24-Oct-14 A	16-May-15	
PCB-3410	PCB - Bored Piling to PCB - 8 Piles	106.0	24-Oct-14 A	16-May-15	1.25%
10th Group		107.0	08-Oct-14 A	08-May-15	
PCB-3400	PCB - Bored Piling to PCB - 8 Piles	107.0	08-Oct-14 A	08-May-15	1.25%
11th Group		105.0	10-Nov-14	21-Mar-15	
PCB-3390	PCB - Bored Piling to PCB - 7 Piles	105.0	10-Nov-14*	21-Mar-15	0%
12th Group		105.0	10-Nov-14	21-Mar-15	
PCB-3380	PCB - Bored Piling to PCB - 7 Piles	105.0	10-Nov-14*	21-Mar-15	0%
13th Group		82.0	17-Nov-14	02-Mar-15	
PCB-3370	PCB - Bored Piling to PCB - 5 Piles	82.0	17-Nov-14*	02-Mar-15	0%
14th Group		82.0	25-Oct-14 A	05-Mar-15	
PCB-3360	PCB - Bored Piling to PCB - 5 Piles	82.0	25-Oct-14 A	05-Mar-15	2%
Earthwork		67.0	06-Oct-14 A	21-Jan-15	
Dewatering		67.0	06-Oct-14 A	21-Jan-15	
PCB-2350	GWC - ICE Review and Endorsement	7.0	06-Oct-14 A	14-Oct-14 A	100%
PCB-1980	GWC - Engineer Review and Comment	14.0	15-Oct-14 A	08-Nov-14	70%
PCB-2510	GWC - Engineer Approve	7.0	01-Nov-14	08-Nov-14	0%
PCB-2140	GWC - Revise Design and Method Statement	7.0	10-Nov-14	17-Nov-14	0%
PCB-2610	GWC - TPICE Consultation	30.0	10-Nov-14	13-Dec-14	0%
PCB-02-1680	GWC - Construct Dewatering Wells/Observation wells	6.0	15-Dec-14	20-Dec-14	0%
PCB-02-1670	GWC - Pump Test	12.0	22-Dec-14	07-Jan-15	0%
PCB-02-1660	GWC - Engineer Approve Pump Test Results	12.0	08-Jan-15	21-Jan-15	0%
PCB-02-1650	GWC - Commence Dewatering	0.0		21-Jan-15	0%
Common Utilities Enclosure		26.0	26-Sep-14 A	14-Nov-14	
Piling		26.0	26-Sep-14 A	14-Nov-14	
PCB-9A-100	CUE - Predrilling 13 number x 3 Rigs	26.0	26-Sep-14 A	14-Nov-14	55%

Actual Work
Remaining Work
Critical Remaining Work
Milestone

THREE MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
01-Nov-14	3 Month Rolling Programme - 1st November 2014	SGJ	SGJ

APPENDIX D

Event and Action Plan

Event/Action Plan for Air Quality

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

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

Event / Action Plan for Construction Noise Monitoring

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

APPENDIX E

Waste Flow Table

Name of Department: Highways Department

Contract No.: HY/2013/01

Leighton - Chun Wo Joint Venture

Monthly Summary Waste Flow Table for 2014

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated (see Note 8)	**Hard Rock and Large Broken Concrete** (see Note 9)	**Reused in the Contract**	**Reused in Other Projects**	**Disposed as Public Fill** (see Note 10)	**Imported Fill**	**Metals** (see Note 5)	**Paper / Cardboard Packaging** (see Note 5)	**Plastics** (see Note 3) (see Note 5)	**Chemical Waste**	**Others, e.g. general refuse**
	(in '000m^3)	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000kg)**	**(in '000kg)**	**(in '000kg)**	**(in '000kg)**	**(in '000m^3)**
January											
February											
March											
April	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012
August	0.107	0.000	0.000	0.000	0.107	0.000	0.000	0.000	0.000	0.000	0.012
September	1.372	0.000	0.726	0.228	0.418	0.000	0.000	0.000	0.000	0.000	0.016
October	3.109	0.000	0.000	2.971	0.138	2.474	0.000	0.000	0.000	0.000	0.032
November											
December											
Total	4.588	0.000	0.726	3.199	0.663	2.474	0.000	0.000	0.000	0.000	0.075

Leighton - Chun Wo Joint Venture

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated (see Note 8)	**Hard Rock and Large Broken Concrete** (see Note 9)	**Reused in the Contract**	**Reused in Other Projects**	**Disposed as Public Fill** (see Note 10)	**Imported Fill**	**Metals** (see Note 5)	**Paper / Cardboard Packaging** (see Note 5)	**Plastics** (see Note 3) (see Note 5)	**Chemical Waste**	**Others, e.g. general refuse**
(in '000m^3)	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000kg)**	**(in '000kg)**	**(in '000kg)**	**(in '000kg)**	**(in '000m^3)**

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

APPENDIX F

Environmental Licenses and Permits

LEIGHTON 俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Environmental License/ Permits /Notification Register

LCAL H2620

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date : Oct 2014

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	29 Jul 13	N/A	Environmental Permit to construct the Passenger Clearance Building and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/G	06 Aug 13	N/A	EPD	
2	All Areas	29 Apr 14	H2620-LTR-EPD-AU-000006	**Billing Account** for disposal of construction waste	Billing Account No.: 7019944	16 May 14	N/A	EPD	
3	PCB	30 Apr 14	H2620-LTR- EPD-000002	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373961	05 May 14	N/A	EPD	
4	WA2	30 Apr 14	H2620-LTR- EPD-000003	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373956	05 May 14	N/A	EPD	
6	WA3	30 Apr 14	H2620-LTR-EPD-AU-000001	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373962	05 May 14	N/A	EPD	

Environmental License/ Permits /Notification Register

LCAL H2620

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date : Oct 2014									
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
7	PCB	30 May 14	H2620-LTR-EPD-AU-000020	**Registration** as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at PCB area	WPN: 5213-951-L2846-01	08 Jul 14	N/A	EPD	
8	PCB	23 Jun 14	In H2620-LTR-EPD-000017	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0683-14	03 Jul 14	29 Dec 14	EPD	Superseded by GW-RS0908-14
9	WA2	02 Jul 14	H2620-LTR-LCJ-AU-000280	**CNP** for the use of powered mechanical equipment for the purpose of carry out ER Office construction works from 19:00 to 23:00. (Non-designated area)	GW-RS0715-14	17 Jul 14	15 Jan 15	EPD	
10	WA3	02 Jul 14	H2620-LTR-LCJ-AU-000324	**CNP** for the use of powered mechanical equipment for the purpose of carry out construction of JV site office from 19:00 to 23:00. (Non-designated)	GW-RS0716-14	17 Jul 14	15 Jan 15	EPD	

Environmental License/ Permits /Notification Register

LCAL H2620

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date : Oct 2014									
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
11	PCB	23 Jun 14	H2620-LTR- EPD-000527	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0908-14	03 Sep 14	22 Dec 14	EPD	Superseded by GW-RS1044-14
12	PCB	30-Jul-14	H2620-LTR-EPD-AU-000024	Acknowledge Receipt of Water Pollution Control Ordinance	377484	-	-	-	EPD is processing the application
13	PCB	29-Sep-14	H2620-LTR-EPD-AU-000034	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1044-14	29 Sep 14	24 Dec 14	EPD	
14	WA4	17-Oct-14	H2620-LTR-EPD-AU-000036	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0844-14	20 Oct 14	19 Apr 15	EPD	

APPENDIX G

Implementation Schedule for Environmental Mitigation Measures (EMIS)

Environmental Mitigation Implementation Schedule – Hong Kong Boundary Crossing Facilities (Superstructures and Infrastructures)

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?
Air Quality							
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1-hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1-hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
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; • W here a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1-hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
S5.5.6.2	A2	• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1-hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact
S5.5.6.4	A4	4) Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	Control construction dust	Engineer	All construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation
S5.5.6.4	A5	5) 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)

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?
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)
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

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?
Construction Noise (Air borne)							
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA
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 designed to achieve 10dB(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?
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance & its TM • Annex 5, TM-EIA
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA
	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises
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 • ETWB TC 34/2002

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?
Waste Management (Construction Waste)							
S8.3.8	WM1	<u>*Construction and Demolition Material*</u> 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 ETWBTC (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 • ETWB TC 19/2005

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
S8.3.9-S8.3.11	WM2	*C&D Waste* • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TC 19/2005
S8.2.12-S8.3.15	WM3	*Chemical Waste* • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

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		• Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.					
S8.3.16	WM4	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance
S8.3.17	WM5	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
Water Quality (Construction Phase)							
S9.11.1.7	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 WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
Ecology (Construction Phase)							
S10.7	E4	• Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water
S10.7	E5	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction	
S10.7	E8	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brother Islands.	Minimise marine traffic disturbance on dolphins	Contractor	Marine traffic	During construction	
Fisheries							
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	Minimise impacts on marine water quality impacts	Marine Department	HKBCF	During operation	

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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	

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Landscape & Visual (Construction Phase)							
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas. G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. G3. Not applicable as this is for HKLR. G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF G5. Vegetation reinstatement and upgrading to disturbed areas G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed G7. Providing planting area around peripheral of HKBCF for tree planting screening effect; G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt “natural-look” by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enchance “natural-look” of the new coastline.	Minimise visual & landscape impact	Contractor	HKBCF	Construction stage	
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> V1. Minimize time for construction activities during construction period. V2. Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKBCF construction.					

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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	Construction stage	• 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	Construction stage	• EIAO Guidance Note No.4/2002 • TM-EIAO

APPENDIX H

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	0	0	0

APPENDIX I

Environmental Site Inspection Schedule

Nov-14

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