ATKINS

阿特金斯
ATKINS
香港九龍尖沙咀海港城
九倉電訊中心十三樓
13/F Wharf T&T Centre
Harbour City Tsim Sha Tsui
Kowloon Hong Kong

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

www.atkinsglobal.com

Your ref.
Our ref. 5126871/19.10/OC080/KC/HY

Date: 18 January 2017

By Post and e-mail (Michael.Lee@lcwjv.com)

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

Attn: Mr. Michael Lee

Dear Mr. Lee,

Contract No. HY/2013/01
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities – Passenger Clearance Building
Certification of Quarterly EM&A Report No. 8 (Revision 3)

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Quarterly EM&A Report No. 8 (Revision 3) conforms the requirements provided in Section 16.4 of the Updated Environmental Monitoring and Audit Manual for HKBCF (Version 1.0).

Yours faithfully,
for and on behalf of
Atkins China Limited

Keith Chau
Environmental Team Leader

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

RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_4972L.17

18 January 2017

By Fax (3468 2076) and By Post

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

Attention: Mr. Darrel Kingan

Dear Sir,

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

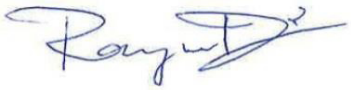
Contract No. HY/2013/01 – HZMB HKBCF – Passenger Clearance Building
Quarterly EM&A Report No. 8 for July 2016 to September 2016

Reference is made to the Environmental Team's submission of Quarterly Environmental Monitoring & Audit Report No. 8 for July 2016 to September 2016 (Revision 3) certified by the ET Leader (ET's ref.: "5126871/19.10/OC080/KC/HY" dated 18 January 2017) and provided to us via e-mail on 18 January 2017.

We are pleased to inform you that we have no adverse comment on the captioned Quarterly Environmental Monitoring & Audit Report for July 2016 to September 2016.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,
For and on behalf of
Ramboll Environ Hong Kong Limited



Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Vico Cheung	(By Fax: 3188 6614)
	HyD	Ms. Lowell Chiu	(By Fax: 3188 6614)
	Atkins	Mr. Keith Chau	(By Fax: 2890 6343)
	LCWJV	Mr. Owen Leung	(By Fax: 3621 0180)

Internal: DY, YH, ENPO Site

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Ramboll Environ Hong Kong Limited 英環香港有限公司
21/F, BEA Harbour View Centre, 56 Gloucester Road, Wanchai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.Ramboll-Environ.com

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

Quarterly EM&A Report No. 8
(Covering the Period from 1 July 2016 to 30 September 2016)

6 January 2017

Revision 3

Main Contractor

LEIGHTON 禮頓
俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Environmental Team

ATKINS

Contents

Executive Summary

This Quarterly 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/K for HKBCF was issued on 11 April 2016. 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 eighth Quarterly EM&A Report for the Contract which summaries findings of the EM&A works during the reporting period from 1 July to 30 September 2016.

Environmental Monitoring and Audit Progress

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

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

Environmental Site Inspection Date		
July 2016	**August 2016**	**September 2016**
6, 13, 20 and 27	3, 10, 17, 24 and 31	7, 14, 21 and 28

Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at station AMS6 shall be referred to the monthly EM&A Reports (for July, August and September 2016) prepared by Contract No. HY/2011/03.

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

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

Implementation of Environmental Measures

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

Complaint Log

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

Notifications of Summons and Successful Prosecutions

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

Reporting Change

There was no reporting change during the reporting period.

1 Introduction

1.1 Basic Project Information

1.1.1 This Quarterly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/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. The Contract was awarded to Leighton – Chun Wo Joint Venture (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

1.1.2 The Contract is part of Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499). An Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. 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 This is the eighth Quarterly EM&A Report for the Contract which summarizes the audit findings of the EM&A programme during the reporting period from 1 July to 30 September 2016.

1.2 Project Organisation

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

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Darrel Kingan	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Leighton – Chun Wo Joint Venture)	Project Manager	Owen Leung	9232 5750	3621 0180
	Environmental Officer	Michael Lee	6461 8635	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Sharifah Or	2972 1802	2890 6343
24 hours complaint hotline	---	---	3958 7300	---

1.3 Construction Programme

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

1.4 Construction Works Undertaken During the Reporting Period

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

Land-Based Work

- Piling test (WA1);
- Bulk Excavation at Box Culvert (WA1)
- Bulk Excavation at Seawater pump house and District Cooling System (DCS) outfall (WA1);
- Pile Cropping (WA1);
- Tie Beams (WA1);
- Pile Capping (WA1);
- Service Troughs construction (WA1);
- Waterproofing (WA1);
- Tower Crane Erection (WA1);
- Southern Drop Off Area Pile Capping and Column (WA1);
- Suspended Slab Construction (WA1);
- Marine Mud Treatment (WA1);
- Ground floor Base Slab Construction (WA1);
- Backfilling (WA1);
- Mega Column Construction (WA1);
- Reinforced Concrete Structure Works at Common Utilities Enclosure (WA1);
- Bored Pilling Works at NFB (WA1);
- Formwork and Falsework stripping (WA1);
- Column and Wall Construction (WA1);
- Blockwork walls (WA1);
- Pipework and ductwork (WA1);
- Seawater Pump House Jet Grouting (WA1);
- Footings for roof erection (WA1);
- Hanger rods for cable container (WA1);
- Wet trade works (WA1);
- Sheet Piling (WA1 SWP & Box Culvert);
- Temporary Launch Tower (WA1);
- Launch Rail Installation (WA1);
- Facade Bracket for Cabins (WA1);
- Segment Travelling works (WA1);
- Mechanical, Electrical, and Plumbing High Level Containment (WA1);
- Steel Roof Erection works (WA1);
- Trolley Removal works (WA1);
- Loading and Unloading of Steel Roof Segment at Temporary Loading and Unloading Point (WA1);
- District Cooling System Pipework installation (WA1);
- Water pump pit top slab (WA1); and
- Plinth construction (WA1).

Marine-based work

- Delivery of Steel Roof Segment by Marine Transportation.

2 EM&A Requirement

2.1 Summary of EM&A Requirements

2.1.1 The EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7 and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.

2.1.2 The permission to carry out impact air quality monitoring work at AMS7 (Hong Kong SkyCity Marriott Hotel) was not granted after 31 January 2015. The impact air quality monitoring location (AMS7) was relocated to a nearby air sensitive receiver, Chu Kong Air-Sea Union Transportation Co. Ltd. (AMS7A), from 5 February 2015 to 30 December 2015. The alternative location at Chu Kong Air-Sea Union Transportation Co. Ltd. was approved by EPD on 5 February 2015. However, AMS7A was relocated back to its original location (AMS7-Hong Kong SkyCity Marriott Hotel) on 30 December 2015. The relocation of air quality monitoring location, AMS7A, back to AMS7 was approved by EPD on 21 December 2015. The baseline and action/limit level for air quality as derived from the baseline monitoring data recorded at Hong Kong SkyCity Marriott Hotel (AMS7) was adopted for the air quality monitoring location.

2.1.3 A summary of air and noise monitoring locations are presented in **Table 2.1**. The location of air quality and noise monitoring stations are shown as in **Figure 2.1** and **Figure 2.2**, respectively.

Table 2.1 Summary of Impact EM&A Requirements

Environmental Monitoring	ID	Location Description
Air Quality	AMS6(1)	Dragonair/CNAC (Group) Building
	AMS7(1), (2)	Hong Kong SkyCity Marriott Hotel
Noise	NMS2(3)	Seaview Crescent
	NMS3B(3),(4)	Site Boundary of Site Office Area at Works Area WA2

Remarks:
(1) The ET of this Contract should conduct impact air quality monitoring at the Air Monitoring Station 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 original monitoring location was at Hong Kong SkyCity Marriott Hotel (AMS7). As the permission to carry out air quality monitoring at Hong Kong SkyCity Marriott Hotel was not granted after 31 January 2015, the monitoring location was relocated to Chu Kong Air-Sea Union Transportation Co. Ltd. (AMS7A) from 5 February 2015 to 30 December 2015. The alternative monitoring location at Chu Kong Air-Sea Union Transportation Co. Ltd. was approved by EPD on 5 February 2015. However, AMS7A was relocated back to its original location (AMS7-Hong Kong SkyCity Marriott Hotel) on 30 December 2015. The relocation of air quality monitoring location, AMS7A, back to AMS7 was approved by EPD on 21 December 2015.
(3) 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.
(4) The Action and Limit Levels for schools will be applied for this alternative monitoring location.

2.2 Monitoring Requirements

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

2.3 Action and Limit Levels

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

Table 2.2 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	360	500
AMS7 – Hong Kong SkyCity Marriott Hotel	370	

Table 2.3 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	173	260
AMS7 – Hong Kong SkyCity Marriott Hotel	183	

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

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

Table 2.4 Action and Limit Level for Construction Noise

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

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

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

2.4 Event Action Plans

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

2.5 Mitigation Measures

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

3 Environmental Monitoring and Audit

3.1 Air Quality Monitoring Results

3.1.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports (for July, August and September 2016) prepared for Contract Nos. HY/2011/03 and HY/2010/02, respectively.

3.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for July, August and September 2016) prepared by Contract No. HY/2011/03.

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

3.2 Noise Monitoring Results

3.2.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports (for July, August and September 2016) prepared for Contract No. HY/2010/02.

3.2.2 No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2010/02 during the reporting period.

3.3 Implementation of Environmental Measures

3.3.1 An incident in relation to silty surface runoff was notified by Independent Environmental Checker on 18 August 2016. The Contractor carried out a site inspection immediately to check the site condition on 18 August 2016. It was found that surface runoff was pumped out from the basement of a building to sedimentation tanks. However, there was malfunction of water pumps causing overflow of silty water from sedimentation tanks. To rectify the situation, the Contractor provided an additional wastewater treatment facility on-site on 19 August 2016. All surface runoff was pumped into the sedimentation tanks and then to the additional wastewater treatment facility prior to discharge. The ET Leader also carried out a site inspection on 24 August 2016 to check the site condition and no silty water discharge was observed. To prevent the overflow of sediment tanks, the Contractor has provided a training for all frontline staff on the requirements of wastewater treatment and actions to be taken when there is malfunction of sedimentation tanks and/or wastewater treatment facility.

3.3.2 An incident in relation to direct discharge of wastewater without treatment from drainage pipes was reported by Environmental Site Supervisor of ENPO on 21 September 2016. The Contractor and ER also found the direct discharge of wastewater on the same day. ET was informed the incident by Contractor at the end of site inspection on 21 September 2016. ET requested Contractor to stop the discharge immediately after notified the incident. The Contractor stopped the discharge immediately. It was found that one of the dosage pumps of the wastewater treatment system was broken down and insufficient chemical was being pumped into the treatment system. An additional treatment facility and sedimentation tank were provided on site to enhance the wastewater treatment system. The ET carried out a few site inspections during the reporting month to check the wastewater treatment system and provided recommendations for further improvement.

3.3.3 In response to the site audit findings, the Contractor carried out corrective actions. Details of site audit findings and the corrective actions during the reporting period are presented in **Appendix F**.

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

3.3.5 According to Contractor's information, no steel roof segment was delivered by marine transportation in July 2016. The marine traffic records and geographical plots of all vessels tracks were prepared and submitted to the ER, ETL and IEC/ ENPO directly by the Contractor. It was noted that the marine traffic records and geographical plots in August and September 2016 were submitted out of the allowed submission time frame (i.e. within 3 weeks after the reporting month) as per Section 6.4.3 of the Monthly EM&A Report for August and September 2016. The Contractor has been reminded to submit these information to all relevant parties on time. The marine traffic records and geographical plots in August and September will be reported in next reporting period.

3.3.6 Training was provided for barge operators in accordance with the Regular Marine Travel Routes Plan and relevant records were kept properly.

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

3.4 Advice on the Solid and Liquid Waste Management Status

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

3.4.2 Excavated marine sediment was generated and treated using cement solidification/stabilization (Cement S/S) techniques in July 2016 only. The treated marine sediment was reused within the Contract site in July 2016 only. No marine sediment was generated/treated and no treated marine sediment was reused in August and September 2016. As informed by the Contractor in March 2016, the transfer of treated marine sediment to Contract no. HY/2010/02 has been discontinued since July 2015.

3.4.3 The summary of waste flow table is detailed in **Appendix G**.

3.4.4 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 Practice on the Packaging, Labelling and Storage of Chemical Wastes*.

3.5 Environmental Licenses and Permits

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

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

4.1 Summary of Exceedance of the Environmental Quality Performance Limit

4.1.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for July, August and September 2016) prepared by Contract No. HY/2011/03.

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

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

4.2 Summary of Complaints, Notification of Summons and Successful Prosecution

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

4.2.2 Statistics on notifications of summons and successful prosecutions are summarized in **Appendix I**.

5 Comments, Recommendations and Conclusion

5.1 Comments

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

- The Contractor was reminded to provide drip trays for the chemical containers.
- The Contractor was reminded to remove general/ construction waste regularly.
- The Contractor was reminded to provide treatment facilities with sufficient capacity and treat all wastewater generated on-site properly before discharge.
- The Contractor is reminded to provide proper labels for the chemical drums. The Contractor was reminded to clear the rubbish on the ground.
- The Contractor was reminded to provide water spraying on the haul road.
- The Contractor was reminded to clear the stagnant water / chemicals inside the drip tray.
- The Contractor was reminded to close the doors of power room when the crawler crane is in operation.
- The Contractor was reminded to clear the oil stain on the ground.

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

5.2 Recommendations

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

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

5.3 Conclusions

5.3.1 The site preparation work of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014. This is the eighth Quarterly EM&A Report summaries findings of the EM&A works during the reporting period from 1 July to 30 September 2016.

5.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for July, August and September 2016) prepared by Contract No. HY/2011/03.

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

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

5.3.5 Environmental site inspections were carried out on 6, 13, 20 and 27 July, 3, 10, 17, 24 and 31 August and 7, 14, 21 and 28 September 2016. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

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

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

FIGURES

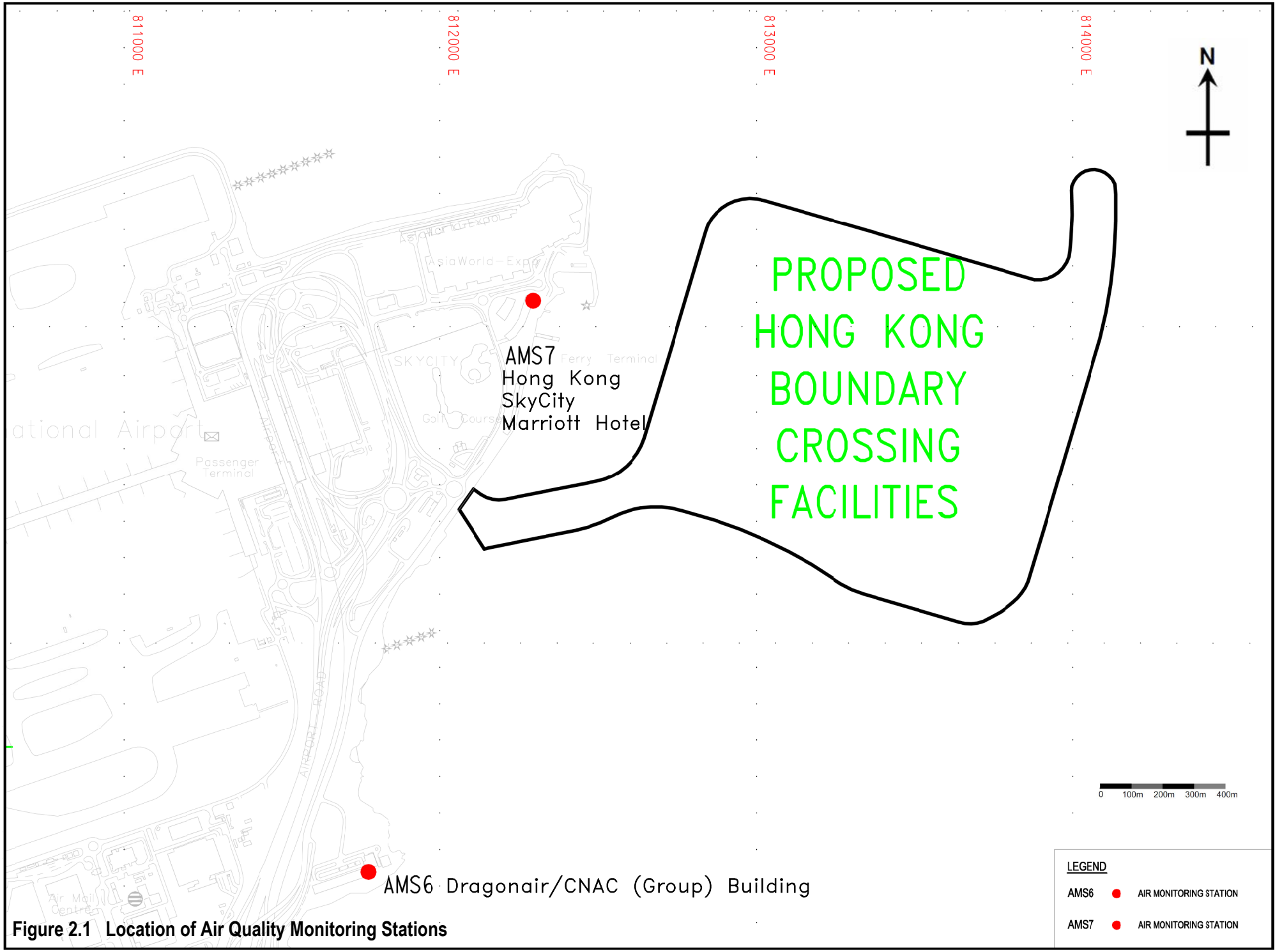


Figure 2.1 Location of Air Quality Monitoring Stations

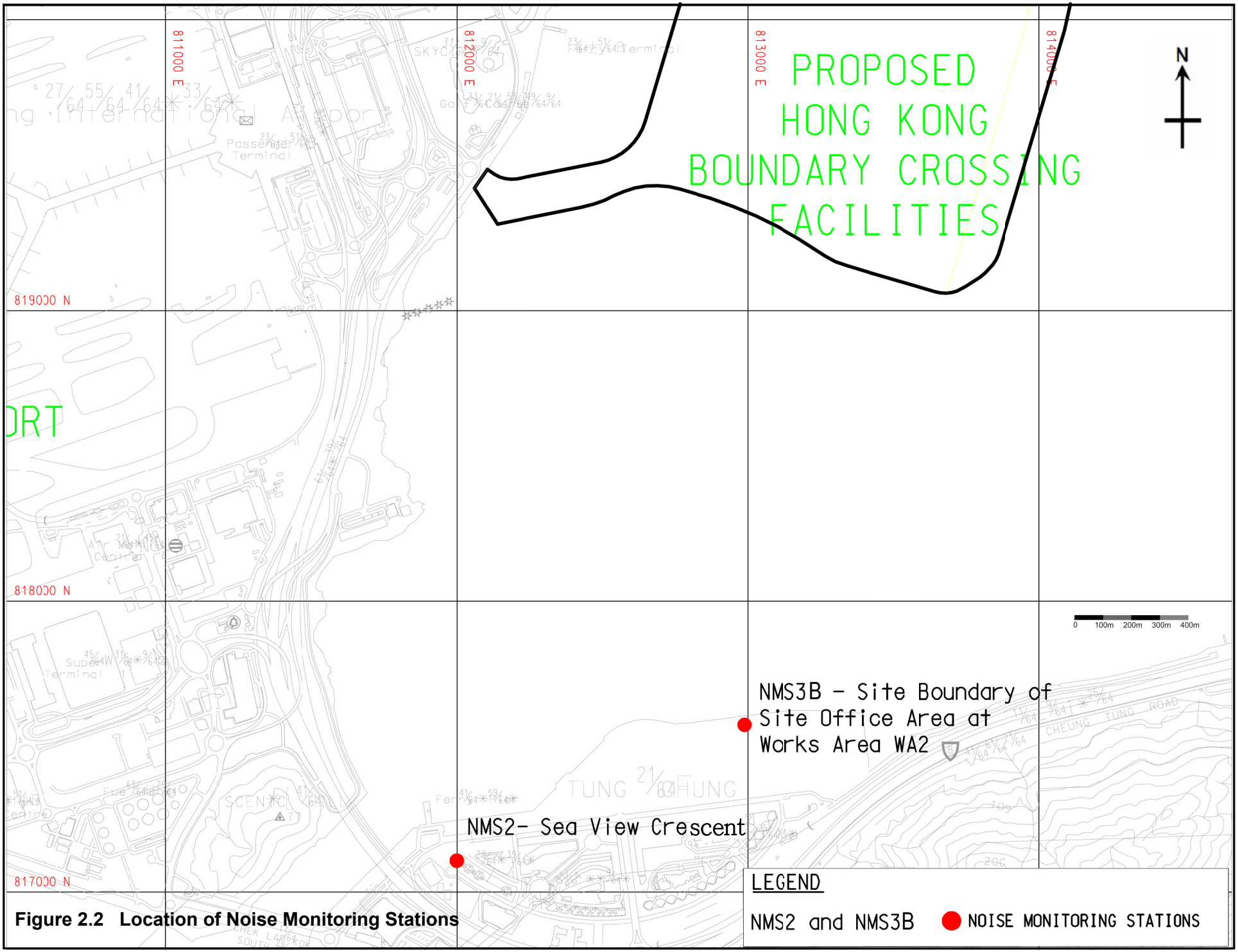
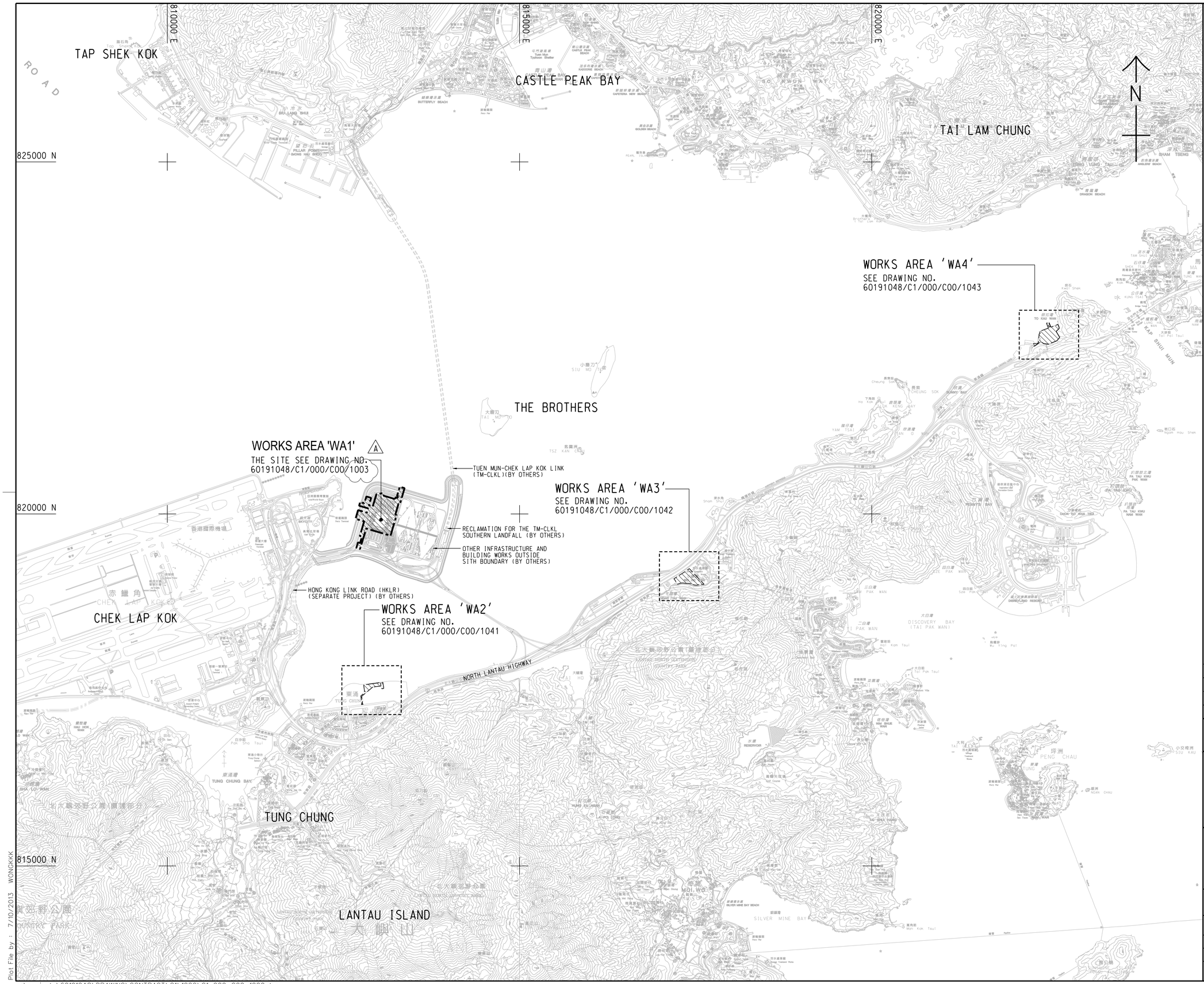


Figure 2.2 Location of Noise Monitoring Stations

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 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	© COPYRIGHT RESERVED 版權所有	

Plot File by : 7/10/2013 WONGKKK

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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

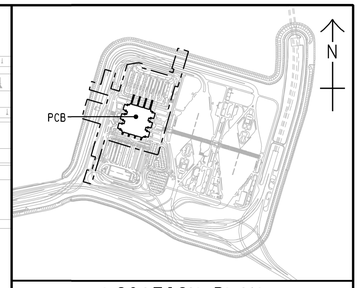
HAUL ROAD TO BE CONSTRUCTED
DIVERTED, MANAGED AND MAINTAINED
BY HY/2013/01 CONTRACT

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 階段	
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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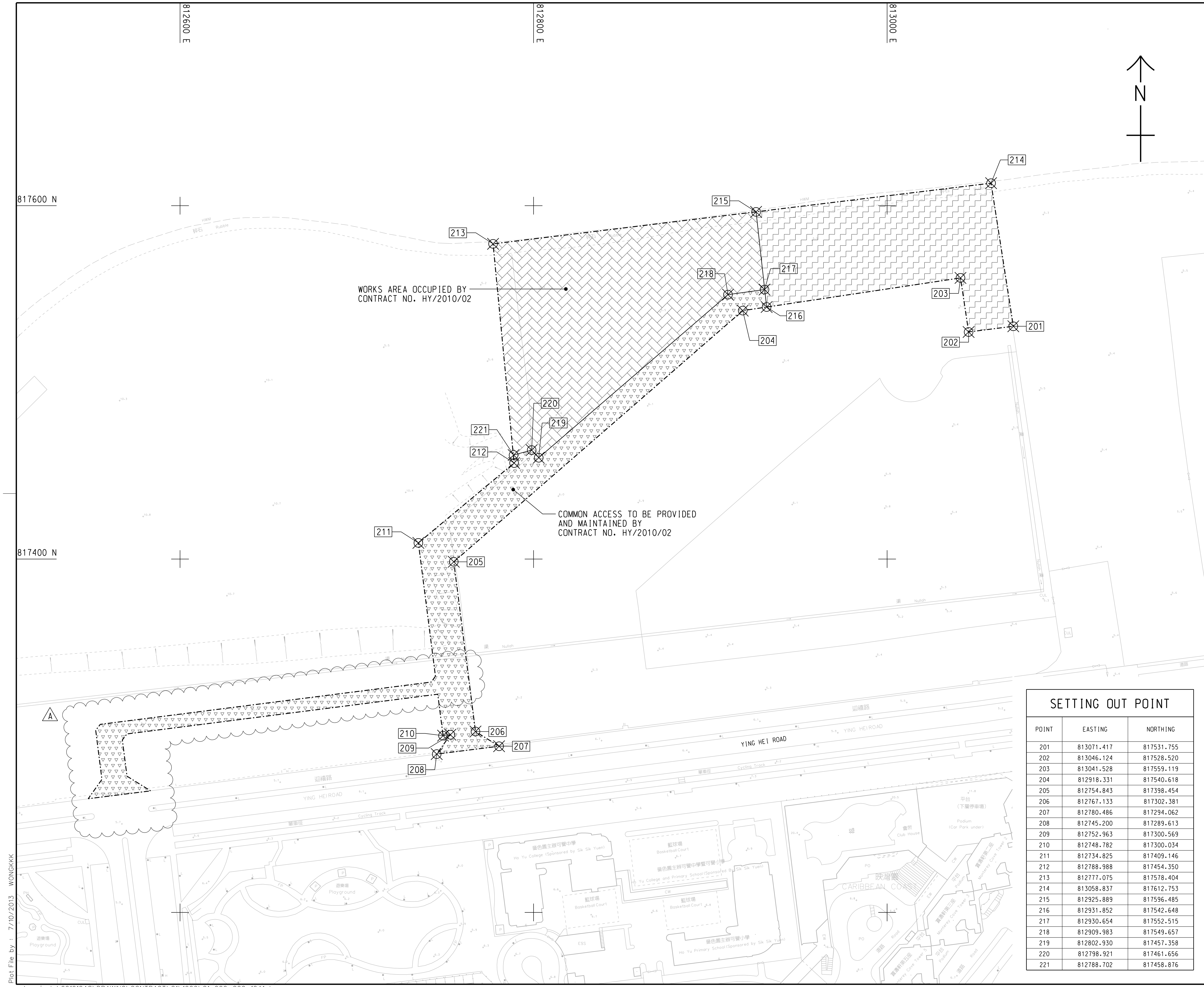

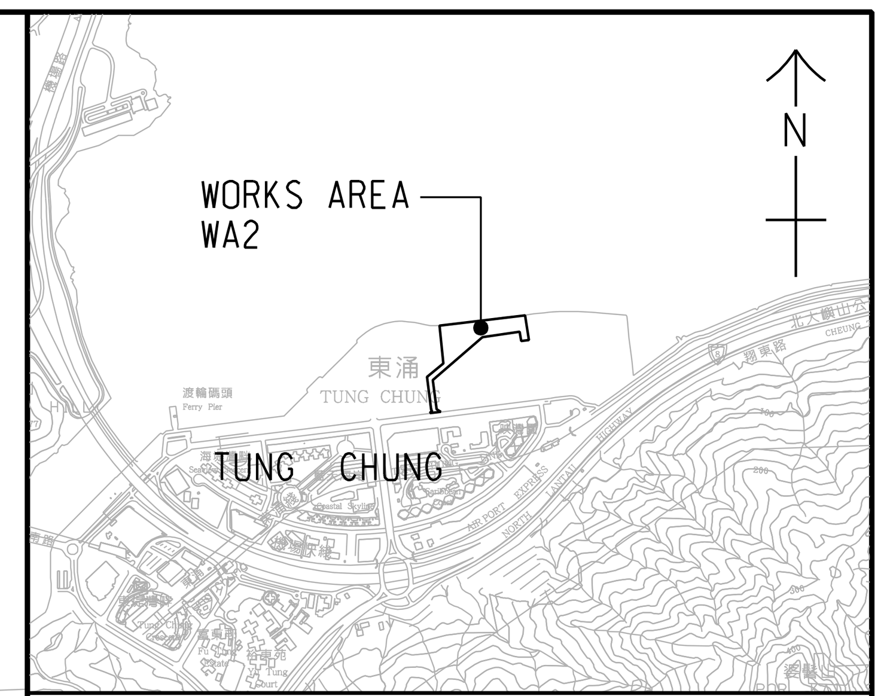

LOCATION PLAN

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

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

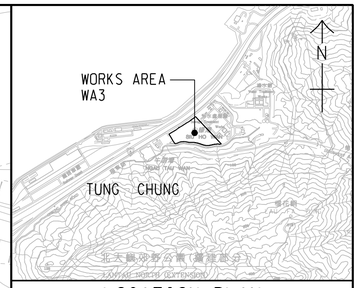
WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/09

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

301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316

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.



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	DRAWN 繪圖	CHECKED 查核	DATE 日期
A	WORKING DRAWING	BWCW	SCT	JUN.14
-	TENDER DRAWING	BWCW	SCT	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 負責人 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	© COPYRIGHT RESERVED 版權所有	

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

822600 N

822400 E

822600 E

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

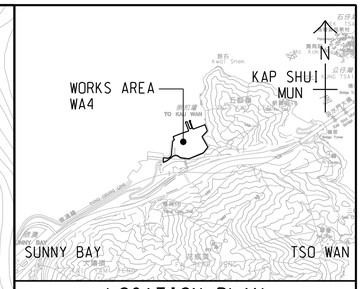
大青洲 TAI TSING CHAU

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	BWCW	CONTRACT NO. 合約編號	HY/2013/01	P. Dir. APPROVED 批准人	EMSC
DRAWN BY 繪圖	WSY	STATUS 階段			
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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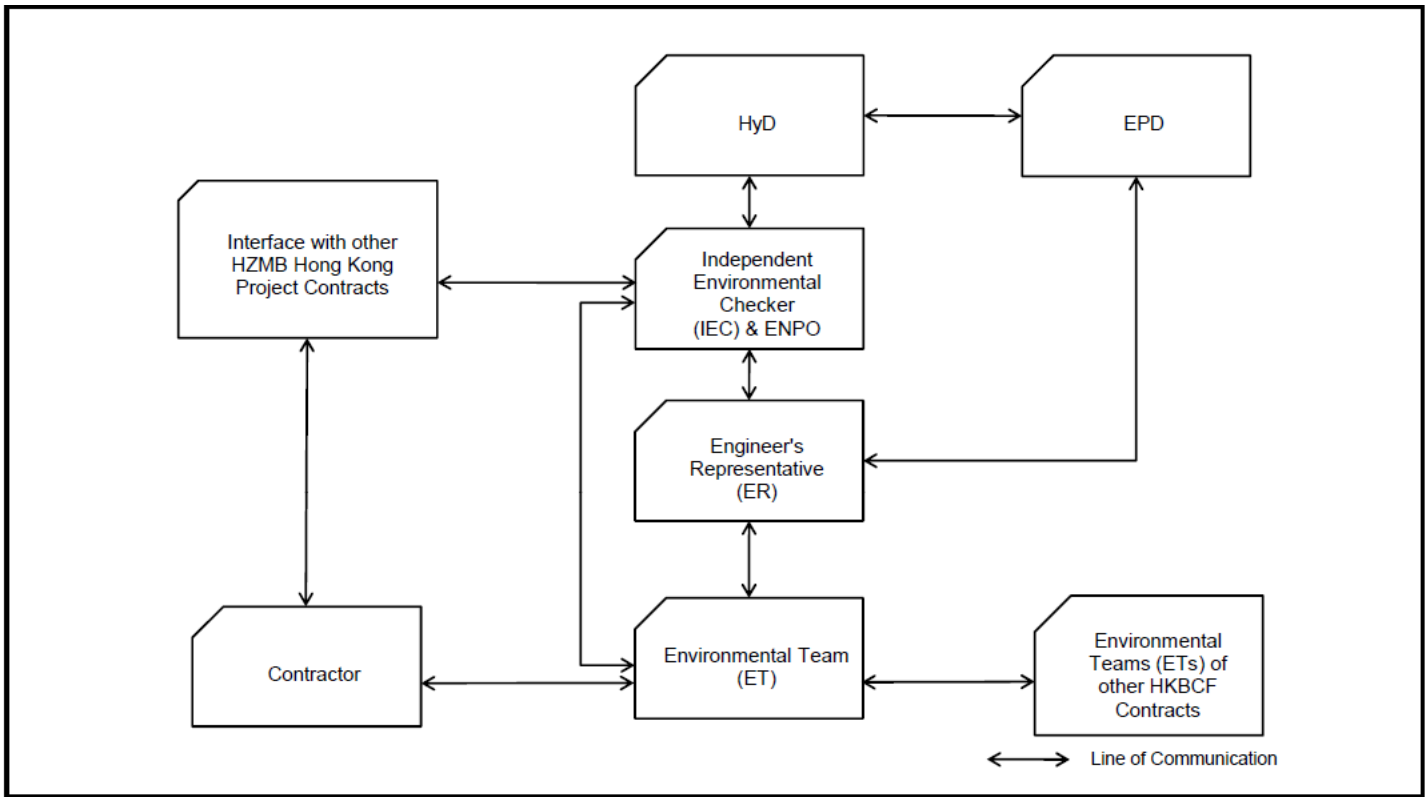
APPENDIX B

Project Organization for Environmental Works

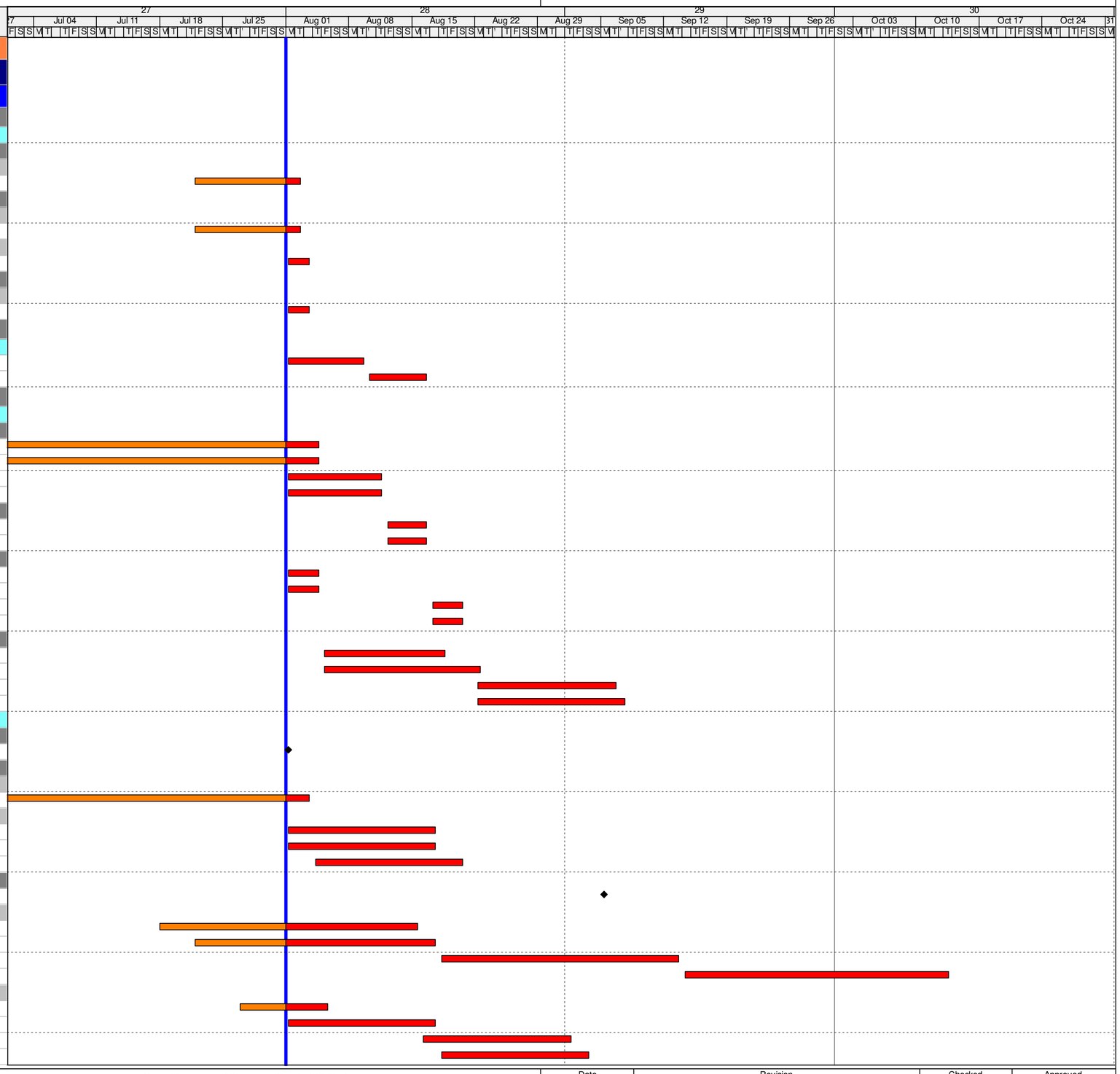
Project Organisation for Environmental Works



APPENDIX C

Construction Programme

Activity ID	Activity Name	Original Duration	Start	Finish
HY/2013/01 HKZMB HKBCF - PCB - 3MRP - June 2016 (Jul 16 Onwards)				
CONSTRUCTION				
Passenger Clearance Building				
Pile Caps and Tie Beam Construction				
Basement Tie Beams & Pile Caps				
Zone C3				
BF14 Stage 2				
PCB-02-23310	PCB - Backfilling to Ground Level at Basement Ext Walls BS14 (Rqd for BS28	3	22-Jul-16 A	02-Aug-16
Zone W3				
BS19				
PCB-02-23300	PCB - Backfilling to Ground Level at Basement Ext Walls BS19	3	22-Jul-16 A	02-Aug-16
BF21				
PCB-02-23200	PCB - Backfilling to Ground Level at Basement Ext Walls BS21	3	01-Aug-16	03-Aug-16
Zone E3				
BS24				
PCB-02-23170	PCB - Backfilling to Ground Level at Basement Ext Walls BS24 (Rqd for BS31	3	01-Aug-16	03-Aug-16
Tower Cranes				
Tower Crane No.2 - NORTH MIDDLE				
PCB-02-22160	PCB(A1) - Construct Tower Crane Footings TC2	8	01-Aug-16*	09-Aug-16
PCB-02-22170	PCB(A1) - Erect Tower Crane TC2	6	10-Aug-16	16-Aug-16
Superstructure				
Ground Floor Foundations South				
Pile Capping				
A2510	Pile Caps and Tie Beams to GF18 - North West Corner (Extended Working H	10	17-Jun-16 A	04-Aug-16
A2690	Pile Caps and Tie Beams to GF19b (Extended Working Hours) Middle North	10	24-Jun-16 A	04-Aug-16
A2520	Pile Caps and Tie Beams to GF20b - South West Corner (Extended Working I	10	01-Aug-16	11-Aug-16
A2480	Pile Caps and Tie Beams to GF20a (Extended Working Hours) Middle South	10	01-Aug-16	11-Aug-16
Water Proofing				
A2650	Waterproofing Pile Caps and Tie Beams to GF20b - South West Corner	4	12-Aug-16	16-Aug-16
A2610	Waterproofing Pile Caps and Tie Beams to GF20a Middle South	4	12-Aug-16	16-Aug-16
Backfilling to Top Level of Ground Beams (+5.0mPD Generally)				
A2700	Backfilling to Tie Beams to GF18 - North West Corner	4	01-Aug-16	04-Aug-16
A2760	Backfilling to Tie Beams to GF19b Middle North	4	01-Aug-16	04-Aug-16
A2710	Backfilling to Tie Beams to GF20b - South West Corner	4	17-Aug-16	20-Aug-16
A2670	Backfilling to Tie Beams to GF20a Middle South	4	17-Aug-16	20-Aug-16
Ground Slabs (+5.450mPD)				
A2770	Construct Ground Floor Base Slab GS18 - North West Corner	12	05-Aug-16	18-Aug-16*
A2820	Construct Ground Floor Base Slab GS19b Middle North	15	05-Aug-16	22-Aug-16
A2780	Construct Ground Floor Base Slab GS20b - South West Corner	14	22-Aug-16	06-Sep-16*
A2750	Construct Ground Floor Base Slab GS20a Middle South	15	22-Aug-16	07-Sep-16
Ground Floor Slabs (+5.450mPD)				
SOUTH - Gridline J-G				
PCB-AB-A0020	Earliest Commencement of ABWF/MEP in Basement SOUTH WEST	0	01-Aug-16	
MIDDLE - Gridline G-E				
Suspended Slabs (+5.450mPD)				
PCB-02-21360	Construct Ground Floor Suspended Slab Pour GS06 - 186m³	23	27-Jun-16 A	03-Aug-16
Cure and Strip Suspended Slabs				
PCB-02-21470	Cure & Strip Ground Floor Suspended Slab Pour GS08a	15	01-Aug-16	17-Aug-16
PCB-02-35580	Cure & Strip Ground Floor Suspended Slab Pour GS04b	15	01-Aug-16	17-Aug-16
PCB-02-21450	Cure & Strip Ground Floor Suspended Slab Pour GS06	15	04-Aug-16	20-Aug-16
NORTH - Gridline E-B				
PCB-AB-A0050	Earliest Commencement of ABWF/MEP in Basement NORTH EAST	0	05-Sep-16	
Suspended Slabs (+5.450mPD)				
PCB-02-35510	Construct Ground Floor Suspended Slab Pour GS17b	23	18-Jul-16 A	15-Aug-16
PCB-02-21680	Construct Ground Floor Suspended Slab Pour GS14 - 146m³	23	22-Jul-16 A	17-Aug-16
PCB-02-21670	Construct Ground Floor Suspended Slab Pour GS16a	23	18-Aug-16*	13-Sep-16
PCB-02-35500	Construct Ground Floor Suspended Slab Pour GS16b	23	14-Sep-16*	13-Oct-16
Cure and Strip Suspended Slabs				
PCB-02-21720	Cure & Strip Ground Floor Suspended Slab Pour GS15	15	27-Jul-16 A	05-Aug-16
PCB-02-21730	Cure & Strip Ground Floor Suspended Slab Pour GS17a	15	01-Aug-16	17-Aug-16
PCB-02-35520	Cure & Strip Ground Floor Suspended Slab Pour GS17b	15	16-Aug-16	01-Sep-16
PCB-02-23470	Cure & Strip Ground Floor Suspended Slab Pour GS14	15	18-Aug-16	03-Sep-16

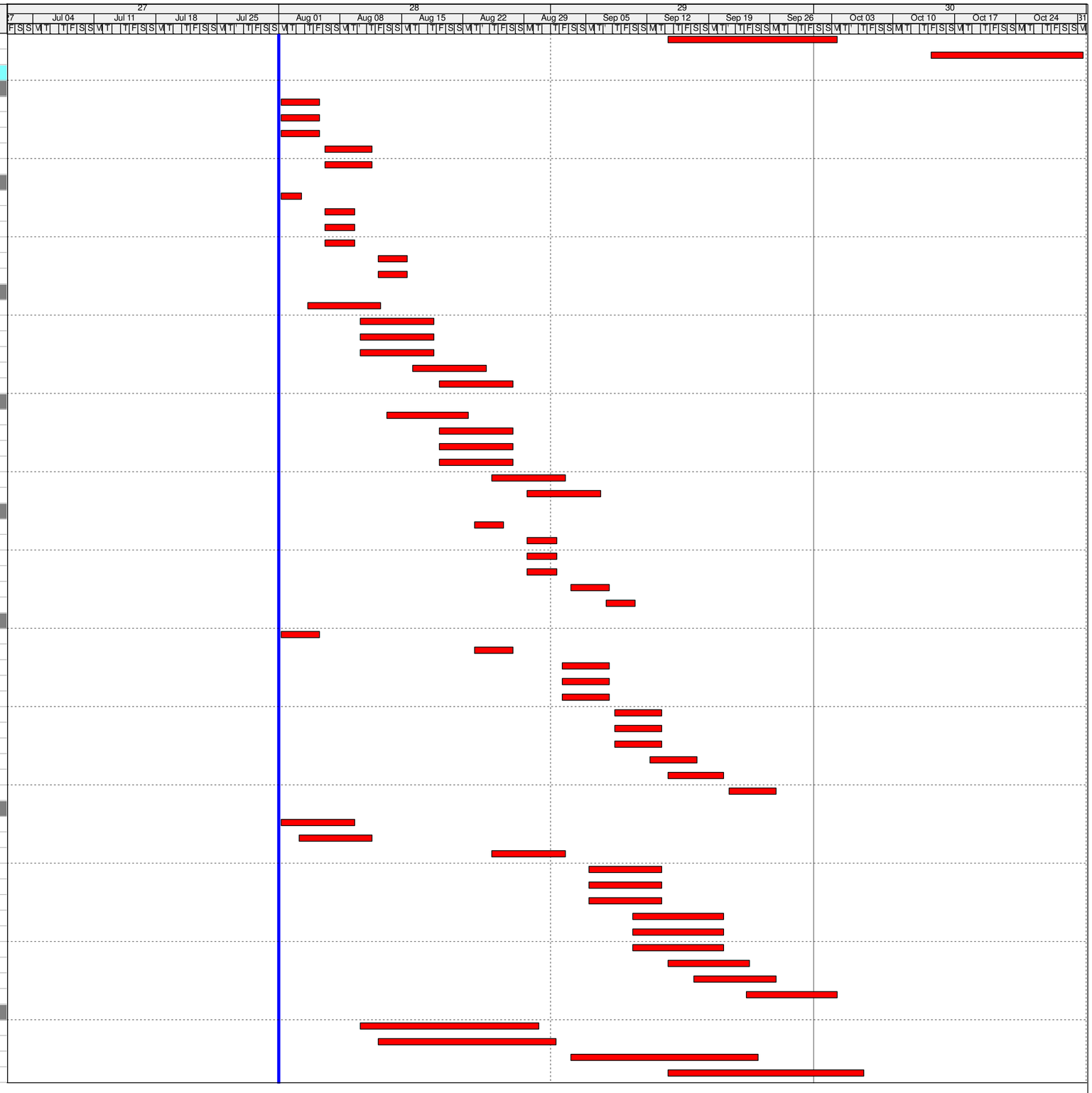


Actual Work
Remaining Work
Critical Remaining Work
Milestone

3 MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
	3-Month Rolling Programme		

Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-21710	Cure & Strip Ground Floor Suspended Slab Pour GS16a	15	14-Sep-16	03-Oct-16
PCB-02-35530	Cure & Strip Ground Floor Suspended Slab Pour GS16b	15	14-Oct-16	31-Oct-16
Ground Floor Foundations North				
Excavation for Service Troughs				
PCB-02-24460	PCB - Excavation for Service Trench BS28	5	01-Aug-16	05-Aug-16
PCB-02-24990	PCB - Excavation for Service Trench BS29a	5	01-Aug-16	05-Aug-16
PCB-02-35630	PCB - Excavation for Service Trench BS31b	5	01-Aug-16	05-Aug-16
PCB-02-25000	PCB - Excavation for Service Trench BS30	5	06-Aug-16	11-Aug-16
PCB-02-35620	PCB - Excavation for Service Trench BS29b	5	06-Aug-16	11-Aug-16
Waterproofing Trench Base slab				
PCB-02-25090	PCB - Waterproofing Trench Base Slab B31a	3	01-Aug-16	03-Aug-16
PCB-02-25020	PCB - Waterproofing Trench Base Slab B28	3	06-Aug-16	09-Aug-16
PCB-02-25030	PCB - Waterproofing Trench Base Slab B29a	3	06-Aug-16	09-Aug-16
PCB-02-35650	PCB - Waterproofing Trench Base Slab B31b	3	06-Aug-16	09-Aug-16
PCB-02-25040	PCB - Waterproofing Trench Base Slab B30	3	12-Aug-16	15-Aug-16
PCB-02-35640	PCB - Waterproofing Trench Base Slab B29b	3	12-Aug-16	15-Aug-16
Service Trough Slabs				
PCB-02-21890	PCB - Service Trough Base Slab - 134m³ Pour BS31a	8	04-Aug-16	12-Aug-16
PCB-02-21860	PCB - Service Trough Base Slab - 134m³ Pour BS28	8	10-Aug-16	18-Aug-16
PCB-02-21870	PCB - Service Trough Base Slab - 134m³ Pour BS29a	8	10-Aug-16	18-Aug-16
PCB-02-35670	PCB - Service Trough Base Slab - 134m³ Pour BS31b	8	10-Aug-16	18-Aug-16
PCB-02-35660	PCB - Service Trough Base Slab - 134m³ Pour BS29b	8	16-Aug-16	24-Aug-16
PCB-02-21880	PCB - Service Trough Base Slab - 134m³ Pour BS30	8	19-Aug-16	27-Aug-16
Service Trough Walls				
PCB-02-22950	PCB - Basement Ext Walls to BS31a	8	13-Aug-16	22-Aug-16
PCB-02-22960	PCB - Basement Ext Walls to BS28	8	19-Aug-16	27-Aug-16
PCB-02-22970	PCB - Basement Ext Walls to BS29a	8	19-Aug-16	27-Aug-16
PCB-02-35690	PCB - Basement Ext Walls to BS31b	8	19-Aug-16	27-Aug-16
PCB-02-35680	PCB - Basement Ext Walls to BS29b	8	25-Aug-16	02-Sep-16
PCB-02-21750	PCB - Basement Ext Walls to BS30	8	29-Aug-16	06-Sep-16
Backfilling behind Service Trough Walls				
PCB-02-23180	PCB - Backfilling to Ground Level at Basement Ext Walls BS31a	4	23-Aug-16	26-Aug-16
PCB-02-23210	PCB - Backfilling to Ground Level at Basement Ext Walls BS29a	4	29-Aug-16	01-Sep-16
PCB-02-23290	PCB - Backfilling to Ground Level at Basement Ext Walls BS28	4	29-Aug-16	01-Sep-16
PCB-02-35710	PCB - Backfilling to Ground Level at Basement Ext Walls BS31b	4	29-Aug-16	01-Sep-16
PCB-02-35700	PCB - Backfilling to Ground Level at Basement Ext Walls BS29b	4	03-Sep-16	07-Sep-16
PCB-02-23150	PCB - Backfilling to Ground Level at Basement Ext Walls BS30	4	07-Sep-16	10-Sep-16
Excavate for Pile Caps and Beams				
PCB-02-35720	PCB - Excavate Pile caps and Beams GF16c	5	01-Aug-16	05-Aug-16
PCB-02-34850	PCB - Excavate Pile caps and Beams GF27	5	23-Aug-16	27-Aug-16
PCB-02-34780	PCB - Excavate Pile caps and Beams GF24c	5	02-Sep-16	07-Sep-16
PCB-02-34830	PCB - Excavate Pile caps and Beams GF25a	5	02-Sep-16	07-Sep-16
PCB-02-34860	PCB - Excavate Pile caps and Beams GF26a	5	02-Sep-16	07-Sep-16
PCB-02-34790	PCB - Excavate Pile caps and Beams GF24a	5	08-Sep-16	13-Sep-16
PCB-02-34810	PCB - Excavate Pile caps and Beams GF24d	5	08-Sep-16	13-Sep-16
PCB-02-34820	PCB - Excavate Pile caps and Beams GF24e (for TC2)	5	08-Sep-16	13-Sep-16
PCB-02-34870	PCB - Excavate Pile caps and Beams GF26b	5	12-Sep-16	17-Sep-16
PCB-02-34840	PCB - Excavate Pile caps and Beams GF25b	5	14-Sep-16	20-Sep-16
PCB-02-34800	PCB - Excavate Pile caps and Beams GF24b	5	21-Sep-16	26-Sep-16
Pile Cropping				
PCB-02-35010	PCB - Pile Cropping to GF17c	8	01-Aug-16	09-Aug-16
PCB-02-35000	PCB - Pile Cropping to GF16c	8	03-Aug-16	11-Aug-16
PCB-02-34970	PCB - Pile Cropping to GF27	8	25-Aug-16	02-Sep-16
PCB-02-35740	PCB - Pile Cropping to GF24c	8	05-Sep-16	13-Sep-16
PCB-02-35790	PCB - Pile Cropping to GF25a	8	05-Sep-16	13-Sep-16
PCB-02-34980	PCB - Pile Cropping to GF26a	8	05-Sep-16	13-Sep-16
PCB-02-35750	PCB - Pile Cropping to GF24a	8	10-Sep-16	20-Sep-16
PCB-02-35770	PCB - Pile Cropping to GF24d	8	10-Sep-16	20-Sep-16
PCB-02-35780	PCB - Pile Cropping to GF24e (TC2)	8	10-Sep-16	20-Sep-16
PCB-02-34990	PCB - Pile Cropping to GF26b	8	14-Sep-16	23-Sep-16
PCB-02-34960	PCB - Pile Cropping to GF25b	8	17-Sep-16	26-Sep-16
PCB-02-35760	PCB - Pile Cropping to GF24b	8	23-Sep-16	03-Oct-16
Pile Capping				
PCB-02-35130	PCB - Pile Caps and Tie Beams to GF17c	18	10-Aug-16*	30-Aug-16
PCB-02-35120	PCB - Pile Caps and Tie Beams to GF16c	18	12-Aug-16*	01-Sep-16
PCB-02-35090	PCB - Pile Caps and Tie Beams to GF27	18	03-Sep-16*	24-Sep-16
PCB-02-35020	PCB - Pile Caps and Tie Beams to GF24c	18	14-Sep-16*	06-Oct-16

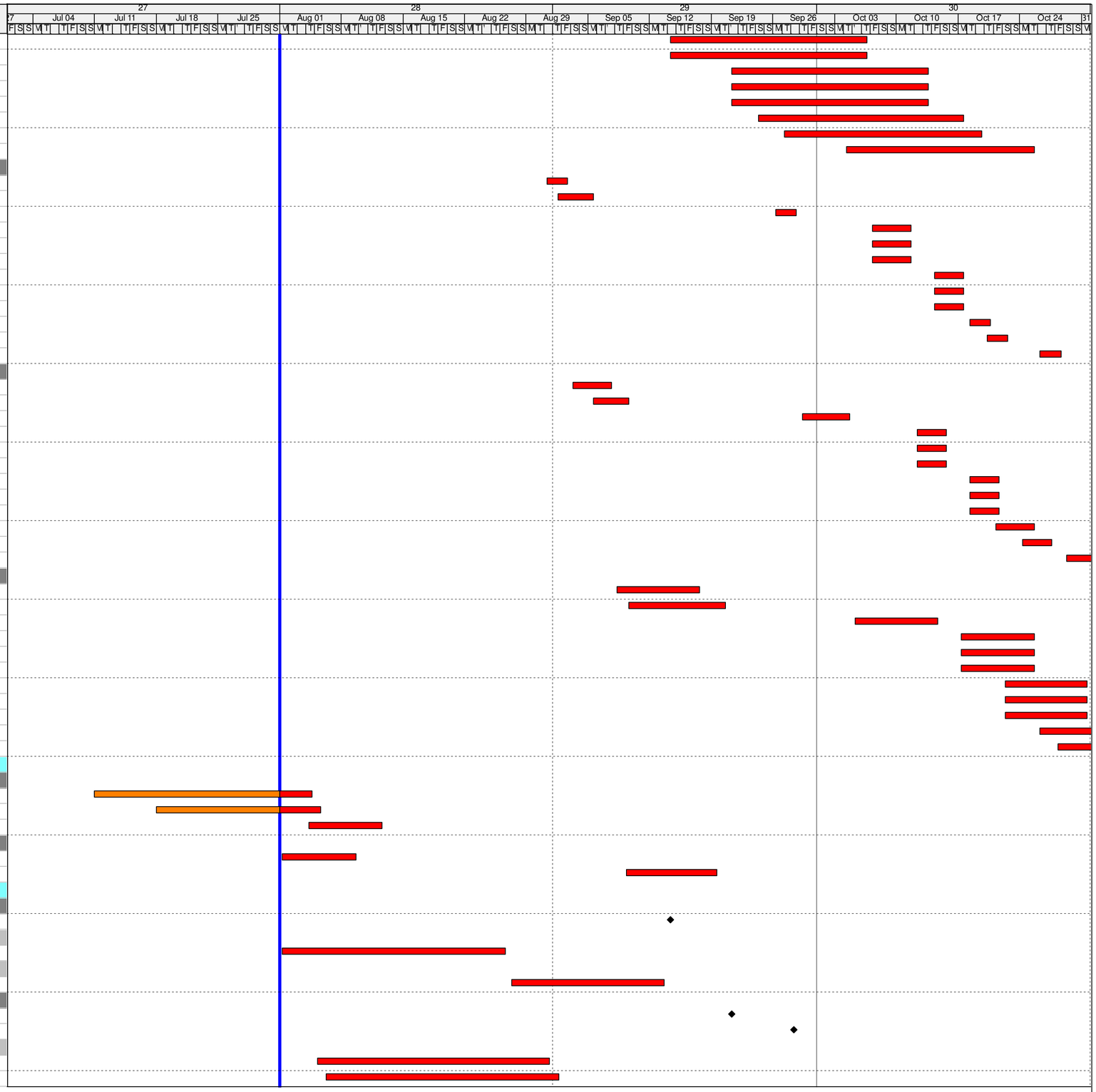


Actual Work
Remaining Work
Critical Remaining Work
Milestone

3 MOHTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
	3-Month Rolling Programme		

Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-35070	PCB - Pile Caps and Tie Beams to GF25a	18	14-Sep-16*	06-Oct-16
PCB-02-35100	PCB - Pile Caps and Tie Beams to GF26a	18	14-Sep-16*	06-Oct-16
PCB-02-35030	PCB - Pile Caps and Tie Beams to GF24a	18	21-Sep-16*	13-Oct-16
PCB-02-35050	PCB - Pile Caps and Tie Beams to GF24d	18	21-Sep-16*	13-Oct-16
PCB-02-35060	PCB - Pile Caps and Tie Beams to GF24e (TC2)	18	21-Sep-16	13-Oct-16
PCB-02-35110	PCB - Pile Caps and Tie Beams to GF26b	18	24-Sep-16*	17-Oct-16
PCB-02-35080	PCB - Pile Caps and Tie Beams to GF25b	18	27-Sep-16*	19-Oct-16
PCB-02-35040	PCB - Pile Caps and Tie Beams to GF24b	18	04-Oct-16*	25-Oct-16
Waterproofing				
PCB-02-35250	PCB - Waterproofing Pile Caps and Tie Beams to GF17c	3	31-Aug-16	02-Sep-16
PCB-02-35240	PCB - Waterproofing Pile Caps and Tie Beams to GF16c	3	01-Sep-16	05-Sep-16
PCB-02-35210	PCB - Waterproofing Pile Caps and Tie Beams to GF27	3	26-Sep-16	28-Sep-16
PCB-02-35140	PCB - Waterproofing Pile Caps and Tie Beams to GF24c	3	07-Oct-16	11-Oct-16
PCB-02-35190	PCB - Waterproofing Pile Caps and Tie Beams to GF25a	3	07-Oct-16	11-Oct-16
PCB-02-35220	PCB - Waterproofing Pile Caps and Tie Beams to GF26a	3	07-Oct-16	11-Oct-16
PCB-02-35150	PCB - Waterproofing Pile Caps and Tie Beams to GF24a	3	14-Oct-16	17-Oct-16
PCB-02-35170	PCB - Waterproofing Pile Caps and Tie Beams to GF24d	3	14-Oct-16	17-Oct-16
PCB-02-35800	PCB - Waterproofing Pile Caps and Tie Beams to GF24e (TC2)	3	14-Oct-16	17-Oct-16
PCB-02-35230	PCB - Waterproofing Pile Caps and Tie Beams to GF26b	3	18-Oct-16	20-Oct-16
PCB-02-35200	PCB - Waterproofing Pile Caps and Tie Beams to GF25b	3	20-Oct-16	22-Oct-16
PCB-02-35160	PCB - Waterproofing Pile Caps and Tie Beams to GF24b	3	26-Oct-16	28-Oct-16
Backfilling to Top Level of Ground Beams (+5.0mPD Generally)				
PCB-02-35370	PCB - Backfilling to Pile Caps and Tie Beams to GF17c	4	03-Sep-16	07-Sep-16
PCB-02-35360	PCB - Backfilling to Pile Caps and Tie Beams to GF16c	4	05-Sep-16	09-Sep-16
PCB-02-35330	PCB - Backfilling to Pile Caps and Tie Beams to GF27	4	29-Sep-16	04-Oct-16
PCB-02-35260	PCB - Backfilling to Pile Caps and Tie Beams to GF24c	4	12-Oct-16	15-Oct-16
PCB-02-35310	PCB - Backfilling to Pile Caps and Tie Beams to GF25a	4	12-Oct-16	15-Oct-16
PCB-02-35340	PCB - Backfilling to Pile Caps and Tie Beams to GF26a	4	12-Oct-16	15-Oct-16
PCB-02-35270	PCB - Backfilling to Pile Caps and Tie Beams to GF24a	4	18-Oct-16	21-Oct-16
PCB-02-35290	PCB - Backfilling to Pile Caps and Tie Beams to GF24d	4	18-Oct-16	21-Oct-16
PCB-02-35810	PCB - Backfilling to Pile Caps and Tie Beams to GF24e (TC2)	4	18-Oct-16	21-Oct-16
PCB-02-35350	PCB - Backfilling to Pile Caps and Tie Beams to GF26b	4	21-Oct-16	25-Oct-16
PCB-02-35320	PCB - Backfilling to Pile Caps and Tie Beams to GF25b	4	24-Oct-16	27-Oct-16
PCB-02-35280	PCB - Backfilling to Pile Caps and Tie Beams to GF24b	4	29-Oct-16	02-Nov-16
Ground Slabs (+5.450mPD)				
PCB-02-35490	PCB - Construct Ground Floor Base Slab Pour GS17c	8	08-Sep-16	17-Sep-16
PCB-02-35480	PCB - Construct Ground Floor Base Slab Pour GS16c	8	09-Sep-16	20-Sep-16
PCB-02-35450	PCB - Construct Ground Floor Base Slab Pour GS27	8	05-Oct-16	14-Oct-16
PCB-02-35380	PCB - Construct Ground Floor Base Slab Pour GS24c	8	17-Oct-16	25-Oct-16
PCB-02-35430	PCB - Construct Ground Floor Base Slab Pour GS25a	8	17-Oct-16	25-Oct-16
PCB-02-35460	PCB - Construct Ground Floor Base Slab Pour GS26a	8	17-Oct-16	25-Oct-16
PCB-02-35390	PCB - Construct Ground Floor Base Slab Pour GS24a	8	22-Oct-16	31-Oct-16
PCB-02-35410	PCB - Construct Ground Floor Base Slab Pour GS24d	8	22-Oct-16	31-Oct-16
PCB-02-35820	PCB - Construct Ground Floor Base Slab Pour GS24e (TC2)	8	22-Oct-16	31-Oct-16
PCB-02-35470	PCB - Construct Ground Floor Base Slab Pour GS26b	8	26-Oct-16	03-Nov-16
PCB-02-35440	PCB - Construct Ground Floor Base Slab Pour GS25b	8	28-Oct-16	05-Nov-16
Columns to Mezzanine Slab (+10.250mPD)				
MIDDLE - Gridline G-E				
PCB-02-20760	Construct Columns to Mezz Floor MS08	8	11-Jul-16 A	04-Aug-16
PCB-02-20790	Construct Columns to Mezz Floor MS07	8	18-Jul-16 A	05-Aug-16
PCB-02-20770	Construct Columns to Mezz Floor MS02	8	04-Aug-16	12-Aug-16
NORTH - Gridline E-B				
PCB-02-20750	Construct Columns to Mezz Floor Pour MS06	8	01-Aug-16	09-Aug-16
PCB-02-20740	Construct Columns to Mezz Floor Pour MS03	8	09-Sep-16	19-Sep-16
Mezzanine Floor Slabs (+10.250mPD)				
SOUTH - Gridline J-G				
PCB-AB-A0080	Earliest Commencement of ABWF/MEP in Cabin 1 Ground Floor SOUTH	0	14-Sep-16	
Suspended Slabs				
PCB-02-21100	Construct Mezzanine Floor Slab Cabin Pour MS01 - 315m³	23	01-Aug-16	26-Aug-16
Cure and Strip				
PCB-02-21120	Cure & Strip Mezzanine Floor Slab Cabin Pour MS01	15	27-Aug-16	13-Sep-16
MIDDLE - Gridline G-E				
PCB-AB-A0100	Earliest Commencement of ABWF/MEP in Cabin 7&8 Ground Floor MIDDLE	0	21-Sep-16	
PCB-AB-A0110	Earliest Commencement of ABWF/MEP in Cabin 2 Ground Floor MIDDLE	0	28-Sep-16	
Suspended Slabs				
PCB-02-21010	Construct Mezzanine Floor Slab Pour MS08 - 290m³	23	05-Aug-16	31-Aug-16
PCB-02-21000	Construct Mezzanine Floor Slab Pour MS07 - 260m³	23	06-Aug-16	01-Sep-16



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3 MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
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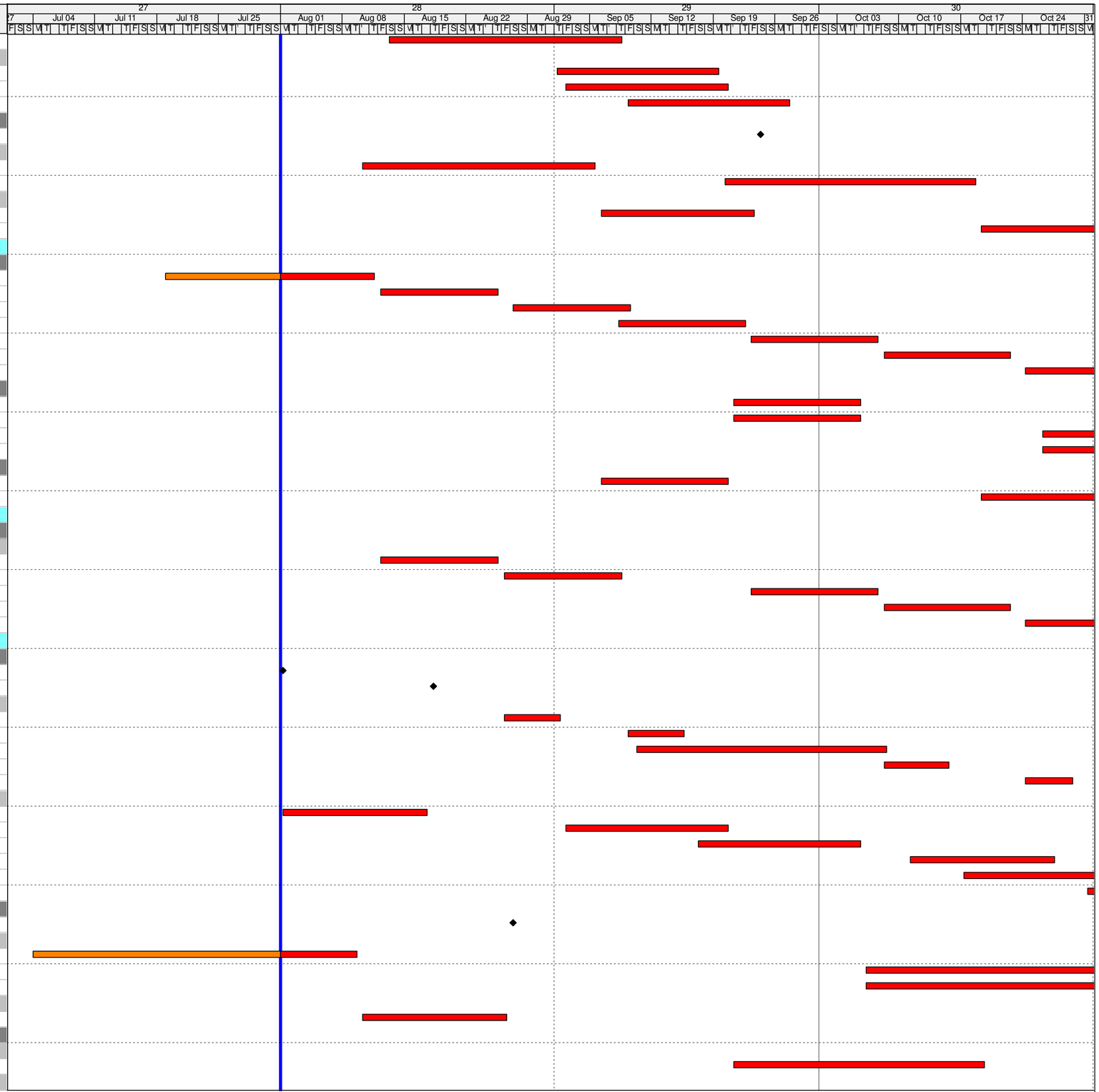
Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-20980	Construct Mezzanine Floor Slab Pour MS02 - 322m³	23	13-Aug-16	08-Sep-16
Cure and Strip				
PCB-02-21040	Cure & Strip Mezzanine Floor Slab Pour MS08	15	01-Sep-16	19-Sep-16
PCB-02-21030	Cure & Strip Mezzanine Floor Slab Pour MS07	15	02-Sep-16	20-Sep-16
PCB-02-21050	Cure & Strip Mezzanine Floor Slab Pour MS02	15	09-Sep-16	27-Sep-16
NORTH - Gridline E-B				
PCB-AB-A0120	Earliest Commencement of ABWF/MEP in Cabin 6 Ground Floor NORTH	0	24-Sep-16	
Suspended Slabs				
PCB-02-21060	Construct Mezzanine Floor Slab Pour MS06 - 323m³	23	10-Aug-16	05-Sep-16
PCB-02-21070	Construct Mezzanine Floor Slab Pour MS03 - 335m³	23	20-Sep-16	18-Oct-16
Cure and Strip				
PCB-02-21090	Cure & Strip Mezzanine Floor Slab Pour MS06	15	06-Sep-16	23-Sep-16
PCB-02-21080	Cure & Strip Mezzanine Floor Slab Pour MS03	15	19-Oct-16	04-Nov-16
Columns to First Floor (+14.700mPD)				
SOUTH - Gridline J-G				
A2790	Construct Columns to 1st Floor pour FS02 (Abv GS03a,03b,19a, 05b,21)	12	19-Jul-16 A	11-Aug-16
A2800	Construct Columns to 1st Floor pour FS03 (Abv GS19a,13,05b,21)	12	12-Aug-16	25-Aug-16
PCB-02-21170	Construct Columns to 1st Floor Pour FS09 (Abv MS01)	12	27-Aug-16	09-Sep-16
A2880	Construct Columns to 1st Floor pour FS04 (Abv GS11,1319a,19b,,20a,21)	12	08-Sep-16	22-Sep-16
A2900	Construct Columns to 1st Floor pour FS05 (Abv GS11,19b,20a)	12	23-Sep-16	07-Oct-16
A2890	Construct Columns to 1st Floor pour FS06 (Abv GS09,,11,19b,18, 20a,20b)	12	08-Oct-16	22-Oct-16
A2830	Construct Columns to 1st Floor pour FS07 (Abv GS09,18,20b)	12	24-Oct-16	05-Nov-16
MIDDLE - Gridline G-E				
PCB-02-33470	Construct Columns to 1st Floor pour FS15 (Abv MS07,MS08)	12	21-Sep-16	05-Oct-16
PCB-02-33460	Construct Columns to 1st Floor pour FS14 (Abv MS07,MS08)	12	21-Sep-16	05-Oct-16
PCB-02-21150	Construct Columns to 1st Floor pour FS12 (Abv GS25a,12b,12a,13,05b)	12	26-Oct-16	08-Nov-16
PCB-02-33490	Construct Columns to 1st Floor pour FS17 (Abv GS08a,14,24c,08b,04b,09)	12	26-Oct-16	08-Nov-16
NORTH - Gridline E-B				
PCB-02-21280	Construct Columns to 1st Floor pour FS19 (Abv MS06)	12	06-Sep-16	20-Sep-16
PCB-02-21180	Construct Columns to 1st Floor Pour FS27 - (Abv MS03)	12	19-Oct-16	01-Nov-16
First Floor Level Beams (+14.7mPD)				
SOUTH - Gridline J-G				
First Floor Beams				
A2870	Construct 1st Floor Beams FSB02 - 341m³	12	12-Aug-16	25-Aug-16
A2860	Construct 1st Floor Beams FSB03 - 490m³	12	26-Aug-16	08-Sep-16
A2990	Construct 1st Floor Beams FSB04 - 481m³	12	23-Sep-16	07-Oct-16
A3000	Construct 1st Floor Beams FSB05 - 502m³	12	08-Oct-16	22-Oct-16
A3010	Construct 1st Floor Beams FSB06 - 488m³	12	24-Oct-16	05-Nov-16
First Floor Level Slabs (+14.7mPD)				
SOUTH - Gridline J-G				
PCB-AB-A0150	Earliest Commencement of ABWF/MEP in Cabin 1 Mezz Floor SOUTH	0	01-Aug-16	
PCB-AB-A0140	Earliest Commencement of ABWF/MEP in Cabin 4 Mezz Floor SOUTH	0	18-Aug-16	
Suspended Slabs				
A2920	Construct 1st Floor Suspended Slab FS02 - 108m³ After Beams	6	26-Aug-16	01-Sep-16
A2910	Construct 1st Floor Suspended Slab FS03 - 156m³ After Beams	6	09-Sep-16	15-Sep-16
PCB-02-20900	Construct 1st Floor Suspended Slab FS09 - 111m³ - Above MS01	23	10-Sep-16	08-Oct-16
A3070	Construct 1st Floor Suspended Slab FS04 - 158m³ After Beams	6	08-Oct-16	15-Oct-16
A3080	Construct 1st Floor Suspended Slab FS05 - 162m³ After Beams	6	24-Oct-16	29-Oct-16
Cure and Strip				
PCB-02-20460	Cure & Strip 1st Floor Suspended Slab FS01 - Cabin 4 (East)	15	01-Aug-16	17-Aug-16
PCB-02-20930	Cure & Strip 1st Floor Suspended Slab FS02	15	02-Sep-16	20-Sep-16
PCB-02-20440	Cure & Strip 1st Floor Suspended Slab FS03	15	17-Sep-16	05-Oct-16
PCB-02-20920	Cure & Strip 1st Floor Suspended Slab FS09 - Cabin 1 (West)	15	11-Oct-16	27-Oct-16
PCB-02-20450	Cure & Strip 1st Floor Suspended Slab FS04	15	17-Oct-16	02-Nov-16
PCB-02-33700	Cure & Strip 1st Floor Suspended Slab FS05	15	31-Oct-16	16-Nov-16
MIDDLE - Gridline G-E				
PCB-AB-A0170	Earliest Commencement of ABWF/MEP in Cabin 5 Mezz Floor MIDDLE	0	27-Aug-16	
Suspended Slabs				
PCB-02-20400	Construct 1st Floor Suspended Slab FS10 - 104m³ - Above MS05	23	04-Jul-16 A	09-Aug-16
PCB-02-33580	Construct 1st Floor Suspended Slab FS14 - 155m³ Above MS08	23	06-Oct-16	02-Nov-16
PCB-02-33590	Construct 1st Floor Suspended Slab FS15 - 185m³ Above MS07	23	06-Oct-16	02-Nov-16
Cure and Strip				
PCB-02-20370	Cure & Strip 1st Floor Suspended Slab FS10 - Cabin 5	15	10-Aug-16	26-Aug-16
NORTH - Gridline E-B				
Suspended Slabs				
PCB-02-20340	Construct 1st Floor Suspended Slab FS19 - 108m³ - Above MS06	23	21-Sep-16	19-Oct-16
Cure and Strip				



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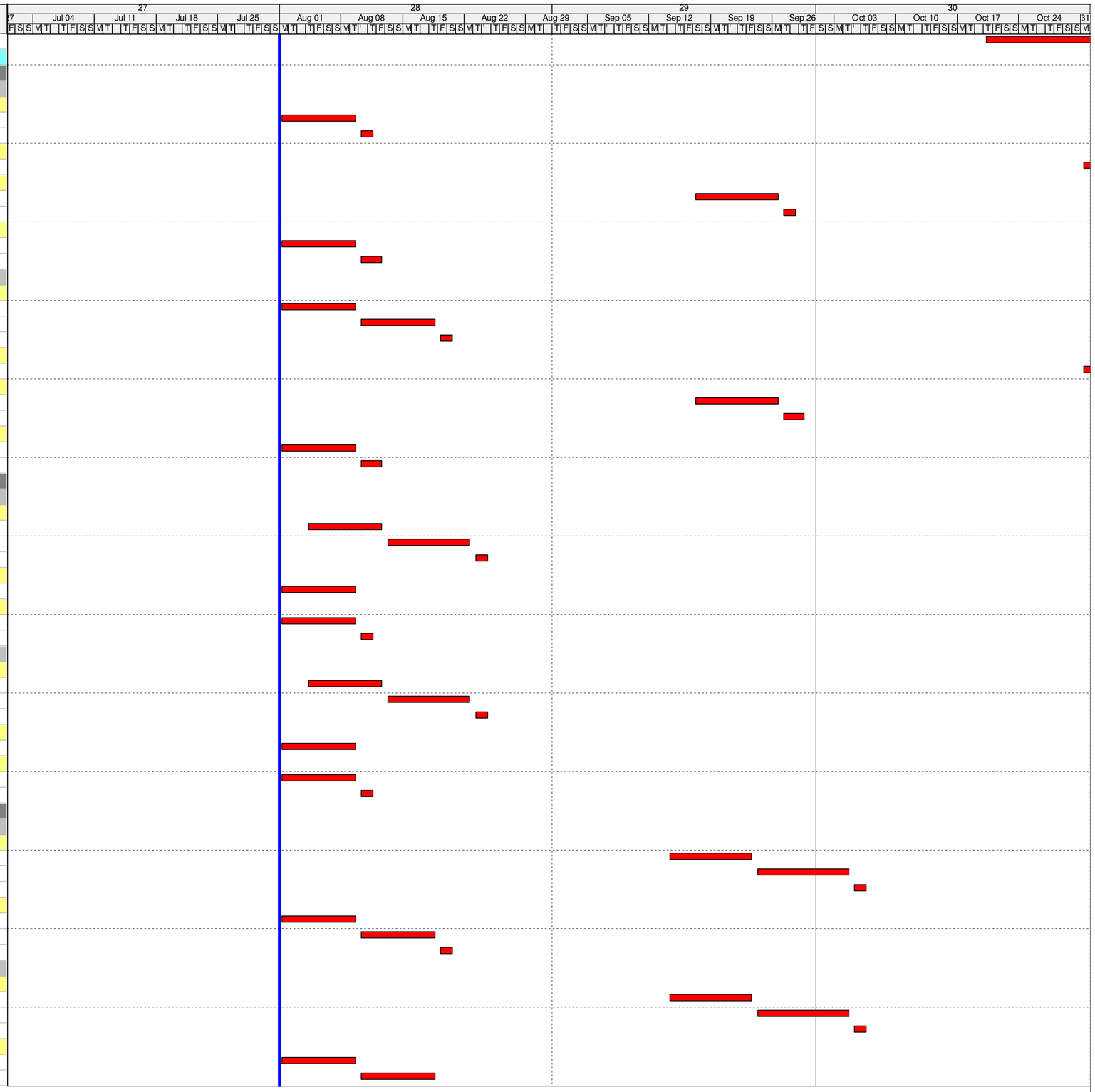
3 MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
	3-Month Rolling Programme		

Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-20360	Cure & Strip 1st Floor Suspended Slab FS19 - Cabin 19	15	20-Oct-16	05-Nov-16
Internal Mega Columns to +19.5mPD (Multi Lift)				
South - Gridline G to H				
Gridline H				
Mega Column H1				
PCB-02-23800	Construct Mega Column H1 (+15.45mPD to +19.50mPD)	8	01-Aug-16	09-Aug-16
PCB-02-24660	Mega Column H1 Minimum Curing Time and Strip 30h	2	10-Aug-16	11-Aug-16
Mega Column H3				
PCB-02-23820	Construct Mega Column H3 (+15.45mPD to +19.50mPD)	8	31-Oct-16	08-Nov-16
Mega Column H4				
PCB-02-23830	Construct Mega Column H4 (+15.45mPD to +19.50mPD)	8	17-Sep-16	26-Sep-16
PCB-02-24630	Mega Column H4 Minimum Curing Time and Strip 30h	2	27-Sep-16	28-Sep-16
Mega Column H5				
PCB-02-23850	Construct Mega Column H5 (+15.45mPD to +19.50mPD)	8	01-Aug-16	09-Aug-16
PCB-02-24620	Mega Column H5 Minimum Curing Time and Strip 30h	3	10-Aug-16	12-Aug-16
Gridline G				
Mega Column G1				
PCB-02-23860	Construct Mega Column G1 (+5.45mPD to +15.45mPD)	8	01-Aug-16	09-Aug-16
PCB-02-23870	Construct Mega Column G1 (+15.45mPD to +19.50mPD)	8	10-Aug-16	18-Aug-16
PCB-02-24610	Mega Column G1 Minimum Curing Time and Strip 30h	2	19-Aug-16	20-Aug-16
Mega Column G3				
PCB-02-24190	Construct Mega Column G3 (+15.45mPD to +19.50mPD)	8	31-Oct-16	08-Nov-16
Mega Column G4				
PCB-02-24200	Construct Mega Column G4 (+15.45mPD to +19.50mPD)	8	17-Sep-16	26-Sep-16
PCB-02-24580	Mega Column G4 Minimum Curing Time and Strip 30h	3	27-Sep-16	29-Sep-16
Mega Column G5				
PCB-02-23890	Construct Mega Column G5 (+15.45mPD to +19.50mPD)	8	01-Aug-16	09-Aug-16
PCB-02-24570	Mega Column G5 Minimum Curing Time and Strip 30h	3	10-Aug-16	12-Aug-16
Middle - Gridline F to E				
Gridline F				
Mega Column F1				
PCB-02-23980	Construct Mega Column F1 (+5.45mPD to +15.45mPD)	8	04-Aug-16	12-Aug-16
PCB-02-23990	Construct Mega Column F1 (+15.45mPD to +19.50mPD)	8	13-Aug-16	22-Aug-16
PCB-02-24560	Mega Column F1 Minimum Curing Time and Strip 30h	2	23-Aug-16	24-Aug-16
Mega Column F3				
PCB-02-25160	Construct Mega Column F3 (+5.45mPD to +15.50mPD)	8	01-Aug-16	09-Aug-16
Mega Column F5				
PCB-02-23970	Construct Mega Column F5 (+15.45mPD to +19.50mPD)	8	01-Aug-16	09-Aug-16
PCB-02-24520	Mega Column F5 Minimum Curing Time and Strip 30h	2	10-Aug-16	11-Aug-16
Gridline E				
Mega Column E1				
PCB-02-24030	Construct Mega Column E1 (+5.45mPD to +15.45mPD)	8	04-Aug-16	12-Aug-16
PCB-02-24040	Construct Mega Column E1 (+15.45mPD to +19.50mPD)	8	13-Aug-16	22-Aug-16
PCB-02-24510	Mega Column E1 Minimum Curing Time and Strip 30h	2	23-Aug-16	24-Aug-16
Mega Column E3				
PCB-02-25170	Construct Mega Column E3 (+5.45mPD to +15.50mPD)	8	01-Aug-16	09-Aug-16
Mega Column E5				
PCB-02-23950	Construct Mega Column E5 (+15.45mPD to +19.50mPD)	8	01-Aug-16	09-Aug-16
PCB-02-24470	Mega Column E5 Minimum Curing Time and Strip 30h	2	10-Aug-16	11-Aug-16
North Gridline D to C				
Gridline D				
Mega Column D1				
PCB-02-24080	Construct Mega Column D1 (+5.45mPD to +15.45mPD)	8	14-Sep-16	23-Sep-16
PCB-02-24090	Construct Mega Column D1 (+15.45mPD to +19.50mPD)	8	24-Sep-16	04-Oct-16
PCB-02-24670	Mega Column D1 Minimum Curing Time and Strip 30h	2	05-Oct-16	06-Oct-16
Mega Column D5				
PCB-02-23920	Construct Mega Column D5 (+5.45mPD to +15.45mPD)	8	01-Aug-16	09-Aug-16
PCB-02-23930	Construct Mega Column D5 (+15.45mPD to +19.50mPD)	8	10-Aug-16	18-Aug-16
PCB-02-24710	Mega Column D5 Minimum Curing Time and Strip 30h	2	19-Aug-16	20-Aug-16
Gridline C				
Mega Column C1				
PCB-02-24100	Construct Mega Column C1 (+5.45mPD to +15.45mPD)	8	14-Sep-16	23-Sep-16
PCB-02-24110	Construct Mega Column C1 (+15.45mPD to +19.50mPD)	8	24-Sep-16	04-Oct-16
PCB-02-24720	Mega Column C1 Minimum Curing Time and Strip 30h	2	05-Oct-16	06-Oct-16
Mega Column C5				
PCB-02-23900	Construct Mega Column C5 (+5.45mPD to +15.45mPD)	8	01-Aug-16	09-Aug-16
PCB-02-23910	Construct Mega Column C5 (+15.45mPD to +19.50mPD)	8	10-Aug-16	18-Aug-16



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Date	Revision	Checked	Approved
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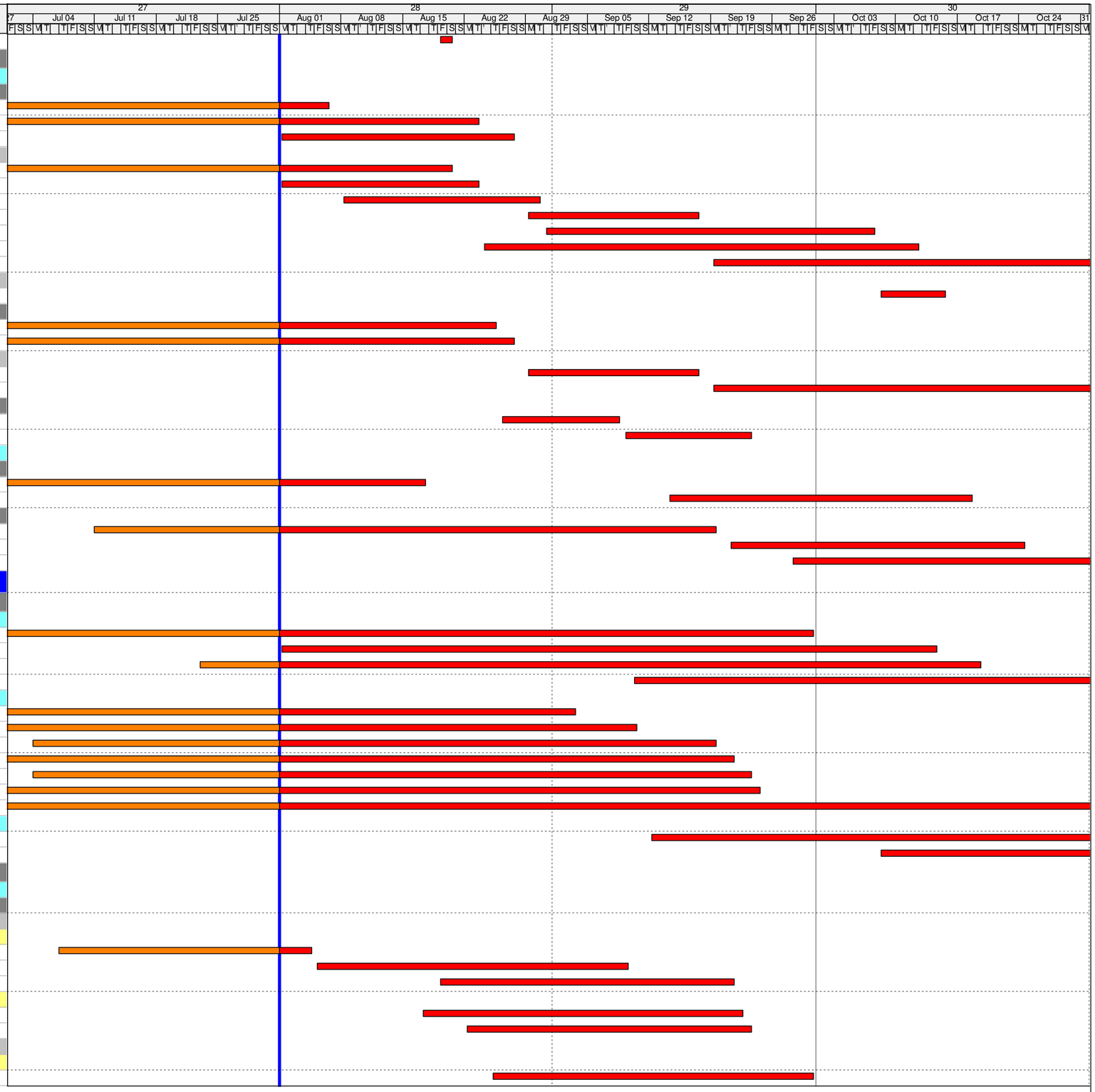
Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-24760	Mega Column C5 Minimum Curing Time and Strip 30h	2	19-Aug-16	20-Aug-16
ABWF & BS / MEP / E&M Works				
Level 1 Basement				
SOUTH - Gridline J-G				
PCB-02-B1010	PCB - ABWF BF Blockworks Zone J	24	26-Jun-16 A	06-Aug-16
PCB-02-W100	PCB - ABWF Wearing slab construction Zone G	28	01-Jul-16 A	23-Aug-16
PCB-02-B1020	PCB - ABWF BF Blockworks Zone G	24	01-Aug-16	27-Aug-16
Degree 1				
PCB-02-M1020	PCB - MEP high level works Zone J	24	30-May-16 A	20-Aug-16
PCB-02-A1000	PCB - ABWF DOC 1 Zone J Corridors and Lobby	20	01-Aug-16	23-Aug-16
PCB-02-A1030	PCB - ABWF DOC 1 Zone J Switchrooms	20	08-Aug-16	30-Aug-16
PCB-02-A1020	PCB - ABWF DOC 1 Zone G Corridors and Lobby	17	29-Aug-16	17-Sep-16
PCB-02-M1030	PCB - MEP DOC 1 Zone J Switchrooms	31	31-Aug-16	07-Oct-16
PCB-02-M1000	PCB - MEP DOC 1 Zone J Corridors and Lobby	40	24-Aug-16	12-Oct-16
PCB-02-A1050	PCB - MEP DOC 1 Zone G Corridors and Lobby	40	19-Sep-16	05-Nov-16
Degree 2				
PCB-02-A1040	PCB - ABWF DOC 2 Zone J Switchrooms	6	08-Oct-16	15-Oct-16
MIDDLE - Gridline G-E				
PCB-02-W110	PCB - Wearing slab construction Zone D,E,F	43	11-Jun-16 A	25-Aug-16
PCB-02-B1015	PCB - ABWF BF Blockworks Zone F	24	01-Jun-16 A	27-Aug-16
Degree 1				
PCB-02-A1060	PCB - ABWF DOC 1 Zone F Corridors and Lobby	17	29-Aug-16	17-Sep-16
PCB-02-M1060	PCB - MEP DOC 1 Zone F Corridors and Lobby	40	19-Sep-16	05-Nov-16
NORTH - Gridline E-B				
PCB-02-W120	PCB - ABWF Wearing slab construction Zone C	12	26-Aug-16	08-Sep-16
PCB-02-W130	PCB - ABWF Wearing slab construction Zone A	12	09-Sep-16	23-Sep-16
Level 3 Cabin Ground Floor +5.50mPD				
SOUTH - Gridline J-G				
PCB-02-B1025	PCB - ABWF GF Blockworks Zone J	27	27-Jun-16 A	17-Aug-16
PCB-02-B1035	PCB - ABWF GF Blockworks Zone G	27	14-Sep-16	18-Oct-16
MIDDLE - Gridline G-E				
PCB-02-B1055	PCB - ABWF GF Blockworks Zone F	50	11-Jul-16 A	19-Sep-16
PCB-02-B1065	PCB - ABWF GF Blockworks Zone E	27	21-Sep-16	24-Oct-16
PCB-02-B1045	PCB - ABWF GF Blockworks Zone D	37	28-Sep-16	11-Nov-16
Facade				
Off Site Works				
Fabrication of Bow Truss				
PCB-XX-0290	Fabrication of double bow truss	76	20-Jun-16 A	30-Sep-16
PCB-XX-0310	Fabrication of single bow truss	62	01-Aug-16	14-Oct-16
PCB-XX-0300	Assembly of double bow truss	76	23-Jul-16 A	19-Oct-16
PCB-XX-0320	Assembly of single bow truss	62	10-Sep-16	24-Nov-16
Window Wall to Cabins				
PCB-XX-3050	Fabrication of WTD extrusions	70	30-May-16 A	03-Sep-16
PCB-XX-3030	Fabrication of WTC glass	83	09-May-16 A	10-Sep-16
PCB-XX-3080	Assembly of WTE panels	66	04-Jul-16 A	19-Sep-16
PCB-XX-3040	Assembly of WTC panels	68	06-Jun-16 A	21-Sep-16
PCB-XX-3060	Assembly of WTD panels	70	04-Jul-16 A	23-Sep-16
PCB-XX-3070	Fabrication of WTE glass	74	13-May-16 A	24-Sep-16
PCB-XX-3020	Facade - Fabrication of Brackets	142	23-May-16 A	11-Nov-16
Facade - Curtain Wall				
PCB-XX-3090	Fabrication of WTA/B glass	110	12-Sep-16	24-Jan-17
PCB-XX-3100	Assembly of WTA/B panels	110	08-Oct-16	24-Feb-17
Façade - Window Wall to Cabins				
East Side				
SOUTH - Gridline J-G - CABIN 4				
Ground Floor				
Zone J				
PCB-02-31290	PCB (GF) - Set up works for GF Window wall erection Zone J	22	07-Jul-16 A	04-Aug-16
PCB-02-31295	PCB (GF) - Bracket Installations Zone J	31	05-Aug-16*	09-Sep-16
PCB-02-31300	PCB (GF) - Window Wall installation of glass units (Cabin 4) Zone J	28	19-Aug-16	21-Sep-16
Zone G				
PCB-02-31330	PCB (GF) - Bracket Installations Zone G	31	17-Aug-16*	22-Sep-16
PCB-02-31340	PCB (GF) - Window Wall installation of glass units (Cabin 1) Zone G	28	22-Aug-16	23-Sep-16
Mezzanine Floor				
Zone J				
PCB-02-31310	PCB (MZ) - Bracket Installations Zone J	31	25-Aug-16	30-Sep-16



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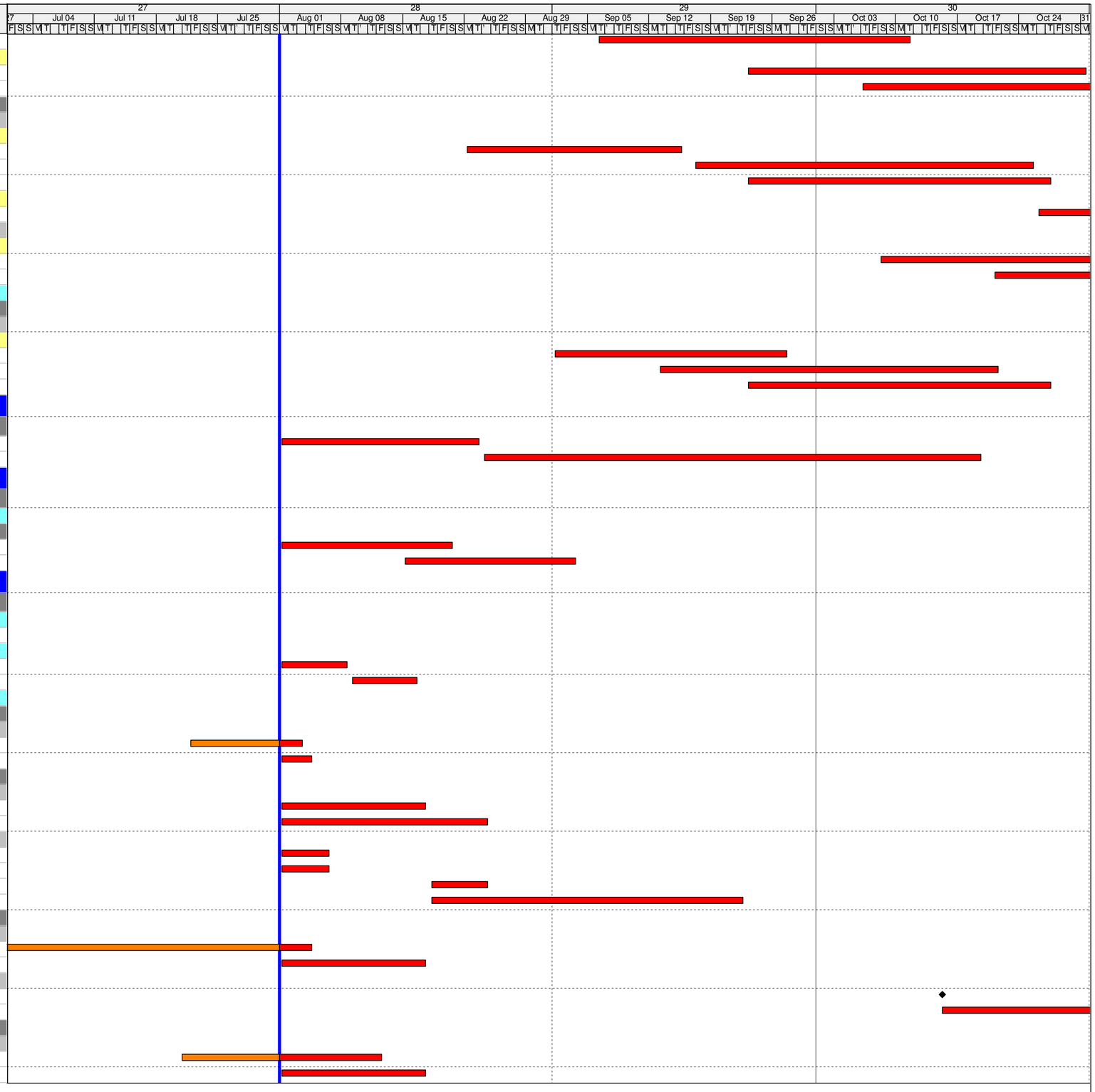
Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-31320	PCB (MZ) - Window Wall installation of glass units (Cabin 4) Zone J	28	06-Sep-16	11-Oct-16
Zone G				
PCB-XX-0930	PCB (MF) - Bracket Installations Zone G	31	23-Sep-16	31-Oct-16
PCB-XX-0940	PCB (MF) - Window Wall installation of glass units (Cabin 1) Zone G	28	06-Oct-16	08-Nov-16
MIDDLE - Gridline G-E - CABIN 5				
Ground Floor				
Zone F				
PCB-02-31350	PCB (GF) - Set up works for GF Window wall erection Zone F	22	22-Aug-16*	15-Sep-16
PCB-02-31400	PCB (GF) - Bracket Installations Zone F	31	17-Sep-16	25-Oct-16
PCB-02-31450	PCB (GF) - Window Wall installation of glass units (Cabin 4) Zone F	28	23-Sep-16	27-Oct-16
Zone D				
PCB-02-31510	PCB (GF) - Bracket Installations Zone D	31	26-Oct-16	30-Nov-16
Mezzanine Floor				
Zone F				
PCB-02-31490	PCB (MZ) - Bracket Installations Zone F	31	08-Oct-16	14-Nov-16
PCB-02-31500	PCB (MZ) - Window Wall installation of glass units (Cabin 4) Zone F	28	21-Oct-16	22-Nov-16
West Side				
SOUTH - Gridline J-G - CABIN 1				
Ground Floor				
Zone G				
PCB-02-31460	PCB (GF) - Set up works for GF Window wall erection Zone G	22	01-Sep-16	27-Sep-16
PCB-02-31470	PCB (GF) - Bracket Installations Zone G	31	13-Sep-16	21-Oct-16
PCB-02-31480	PCB (GF) - Window Wall Primary Steelwork (Cabin 4) Zone G	28	23-Sep-16	27-Oct-16
Misc Off site				
Balustrades				
PCB-YY-0330	Fabrication and Delivery - Mock-up	20	01-Aug-16*	23-Aug-16
PCB-YY-0340	Mock-up assembly and approval	46	24-Aug-16	19-Oct-16
Southern Drop-Off Area				
Southern Drop off Area - Pile Caps				
Southern Drop Off Area - West				
Columns, Piers and Bearings				
PCB-16-1680	DoA - WEST Construct Columns 3 No (to +11mPD)	18	01-Aug-16	20-Aug-16
PCB-16-2060	DoA - WEST Construct Columns 3 No (to +11mPD)	18	15-Aug-16	03-Sep-16
Steel Roof Erection				
Structural Steel Roof (HLEM)				
Marine Delivery				
PCB-02-7020	SR - Marine delivery of Roof Cassettes and Infill Panels	250	04-Aug-16	13-Jun-17
SPMT Path				
A3530	SR - Construct SPMT Path to Row 4	7	01-Aug-16	08-Aug-16
A3700	SR - Construct SPMT Path to Row 5	7	09-Aug-16	16-Aug-16
Temporary Support Towers				
Row 1				
Towers				
A3310	Erect Temporary Launch Towers - Stage 4	6	22-Jul-16 A	03-Aug-16
A3320	Erect Temporary Launch Towers - Stage 5	4	01-Aug-16	04-Aug-16
Row 2				
Footings				
A3260	Temporary Footings - ROW 2 - Lowering Zone (Tentative) Stage 3	15	01-Aug-16*	17-Aug-16
A3550	Conversion area Steel Frame ROW 2	21	01-Aug-16	24-Aug-16
Towers				
A3540	Erect Temporary Launch Towers ROW 2 - Stage 1	6	01-Aug-16	06-Aug-16
A3370	Erect Temporary Launch Towers ROW 2- Stage 2	6	01-Aug-16	06-Aug-16
A3560	Erect Temporary Launch Towers ROW 2 - Stage 3	6	18-Aug-16	24-Aug-16
A1770	Erect Temporary Launch Towers ROW 2 Gridline G-H (Row 2)	30	18-Aug-16	22-Sep-16
Row 3				
Footings				
A3280	Temporary Footings - ROW 3 - Gridline 0.1 (Tentative) - Stage 1	15	07-Jun-16 A	04-Aug-16
A3290	Temporary Footings - ROW 3 - Lowering Zone (Tentative) - Stage 2	15	01-Aug-16*	17-Aug-16
Towers				
A3570	SR - Structural Readiness for ROW 3 Rail	0	15-Oct-16*	
A1780	SR - Erect Temporary Launch Towers Gridline F-E (ROW 3)	30	15-Oct-16	18-Nov-16
Row 4				
Footings				
A3600	Temporary Footings - ROW 4 - Lifting Zone (Tentative) - Stage 3	15	21-Jul-16 A	12-Aug-16
A3580	Temporary Footings - ROW 4 - Gridline 0.1 (Tentative) - Stage 1	15	01-Aug-16*	17-Aug-16



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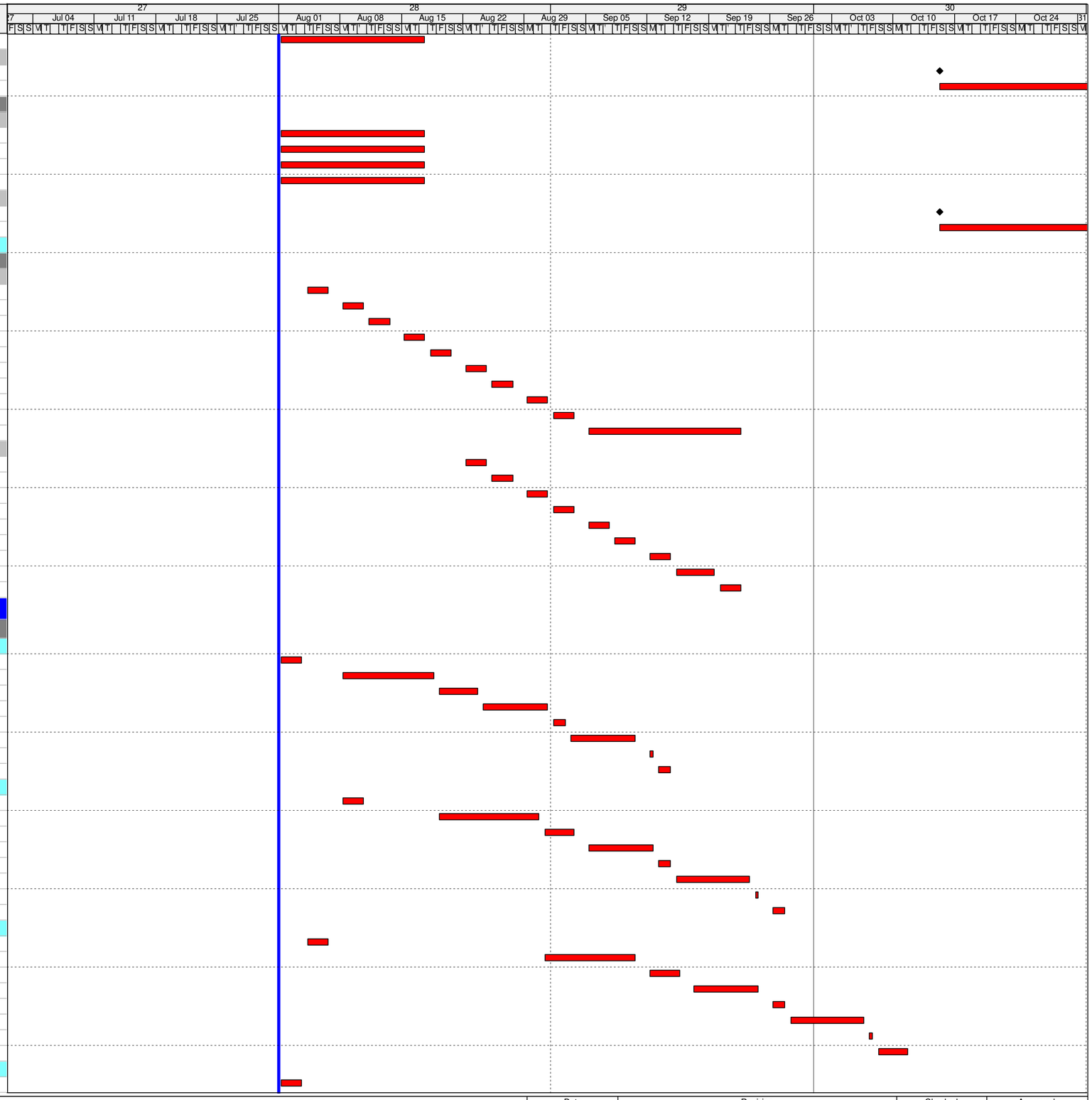
A3590	Temporary Footings - ROW 4 - Lowering Zone (Tentative) - Stage 2	15	01-Aug-16*	17-Aug-16
Towers				
A3620	SR - Structural Readiness for ROW 4 Rail	0	15-Oct-16*	
A3610	SR - Erect Temporary Launch Towers Gridline C-D (ROW 4)	30	15-Oct-16	18-Nov-16
Row 5				
Footings				
A3650	Temporary Footings - ROW 5 - Lifting Zone (Tentative) - Stage 3	15	01-Aug-16*	17-Aug-16
A3630	Temporary Footings - ROW 5 - Gridline 0.1 (Tentative) - Stage 1	15	01-Aug-16*	17-Aug-16
A3640	Temporary Footings - ROW 5 - Lowering Zone (Tentative) - Stage 2	15	01-Aug-16*	17-Aug-16
A3680	Temporary Footings - ROW 5 - Gridline 1 to 5 (Tentative) - Stage 4	15	01-Aug-16*	17-Aug-16
Towers				
A3670	SR - Structural Readiness for ROW 5 Rail	0	15-Oct-16*	
A3660	SR - Erect Temporary Launch Towers Gridline A-B (ROW 4)	30	15-Oct-16	18-Nov-16
Erection				
Row 1 (GL J-K)				
Segment Erection				
PCB-02-11810	SR - Row 1 - Launch Cassette R1/P1	3	04-Aug-16*	06-Aug-16
PCB-02-11820	SR - Row 1 - Launch Cassette R1/P2	3	08-Aug-16	10-Aug-16
PCB-02-11830	SR - Row 1 - Launch Cassette R1/P3	3	11-Aug-16	13-Aug-16
PCB-02-11840	SR - Row 1 - Launch Cassette R1/P4	3	15-Aug-16	17-Aug-16
PCB-02-11850	SR - Row 1 - Launch Cassette R1/P5	3	18-Aug-16	20-Aug-16
PCB-02-11860	SR - Row 1 - Launch Cassette R1/P6	3	22-Aug-16	24-Aug-16
PCB-02-11890	SR - Row 1 - Launch Cassette R1/P7	3	25-Aug-16	27-Aug-16
PCB-02-11870	SR - Row 1 - Launch Cassette R1/P8	3	29-Aug-16	31-Aug-16
PCB-02-11880	SR - Row 1 - Launch Cassette R1/P9	3	01-Sep-16	03-Sep-16
PCB-02-34730	SR - Row 1 - Remove Temp Launching Rail	15	05-Sep-16	22-Sep-16
Trolley Return				
PCB-02-36010	SR - Lower and Return Trolley 1 to Zhong Shan	3	22-Aug-16	24-Aug-16
PCB-02-36020	SR - Lower and Return Trolley 2 to Zhong Shan	3	25-Aug-16	27-Aug-16
PCB-02-36030	SR - Lower and Return Trolley 3 to Zhong Shan	3	29-Aug-16	31-Aug-16
PCB-02-36040	SR - Lower and Return Trolley 4 to Zhong Shan	3	01-Sep-16	03-Sep-16
PCB-02-36050	SR - Lower and Return Trolley 5 to Zhong Shan	3	05-Sep-16	07-Sep-16
PCB-02-36060	SR - Lower and Return Trolley 6 to Zhong Shan	3	08-Sep-16	10-Sep-16
PCB-02-36090	SR - Lower and Return Trolley 7 to Zhong Shan	3	12-Sep-16	14-Sep-16
PCB-02-36070	SR - Lower and Return Trolley 8 to Zhong Shan	3	15-Sep-16	19-Sep-16
PCB-02-36080	SR - Lower and Return Trolley 9 to Zhong Shan	3	20-Sep-16	22-Sep-16
Gridline B				
Gridline B - RC Works (5 Mega Columns)				
B1 (to +19.0mPD)				
PCB-02-2130	Break Piles to Cut Off Level (+2.08mPD) and Blind - B1	3	01-Aug-16	03-Aug-16
PCB-02-2135	Construct Pile Cap - B1	10	08-Aug-16	18-Aug-16
PCB-02-2140	PCB - Mega Columns B Kicker (+4.0 to +6.2mPD) - B1	4	19-Aug-16	23-Aug-16
PCB-ZZ-4140	Scaffolding and Rebar Fixing - B1	7	24-Aug-16	31-Aug-16
PCB-02-33880	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - B1	2	01-Sep-16	02-Sep-16
PCB-ZZ-5030	PCB - Scaffolding+Embbed Rebar Fixing+MEP - B1	7	03-Sep-16	10-Sep-16
PCB-ZZ-4920	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - B1	1	12-Sep-16	12-Sep-16
PCB-02-2145	Minimum Curing before Stripping Shutter - B1	2	13-Sep-16	14-Sep-16
B2 (to +19.0mPD)				
PCB-02-26650	Break Piles to Cut Off Level (+2.08mPD) and Blind - B2	3	08-Aug-16	10-Aug-16
PCB-02-26660	Construct Pile Cap - B2	10	19-Aug-16	30-Aug-16
PCB-02-26670	PCB - Mega Columns B Kicker (+4.0 to +6.2mPD) - B2	4	31-Aug-16	03-Sep-16
PCB-ZZ-4680	Scaffolding and Rebar Fixing - B2	7	05-Sep-16	12-Sep-16
PCB-02-33890	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - B2	2	13-Sep-16	14-Sep-16
PCB-ZZ-5050	PCB - Scaffolding+Embbed Rebar Fixing+MEP - B2	7	15-Sep-16	23-Sep-16
PCB-ZZ-4930	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - B2	1	24-Sep-16	24-Sep-16
PCB-02-26680	Minimum Curing before Stripping Shutter - B2	2	26-Sep-16	27-Sep-16
B3 (to +19.0mPD)				
PCB-02-26690	Break Piles to Cut Off Level (+2.08mPD) and Blind - B3	3	04-Aug-16	06-Aug-16
PCB-02-26700	Construct Pile Cap - B3	10	31-Aug-16	10-Sep-16
PCB-02-26710	PCB - Mega Columns B Kicker (+4.0 to +6.2mPD) - B3	4	12-Sep-16	15-Sep-16
PCB-ZZ-4700	Scaffolding and Rebar Fixing - B3	7	17-Sep-16	24-Sep-16
PCB-02-33900	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - B3	2	26-Sep-16	27-Sep-16
PCB-ZZ-5070	PCB - Scaffolding+Embbed Rebar Fixing+MEP - B3	7	28-Sep-16	06-Oct-16
PCB-ZZ-4940	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - B3	1	07-Oct-16	07-Oct-16
PCB-02-26720	Minimum Curing before Stripping Shutter - B3	2	08-Oct-16	11-Oct-16
B4 (to +19.0mPD)				
PCB-02-26730	Break Piles to Cut Off Level (+2.08mPD) and Blind - B4	3	01-Aug-16	03-Aug-16



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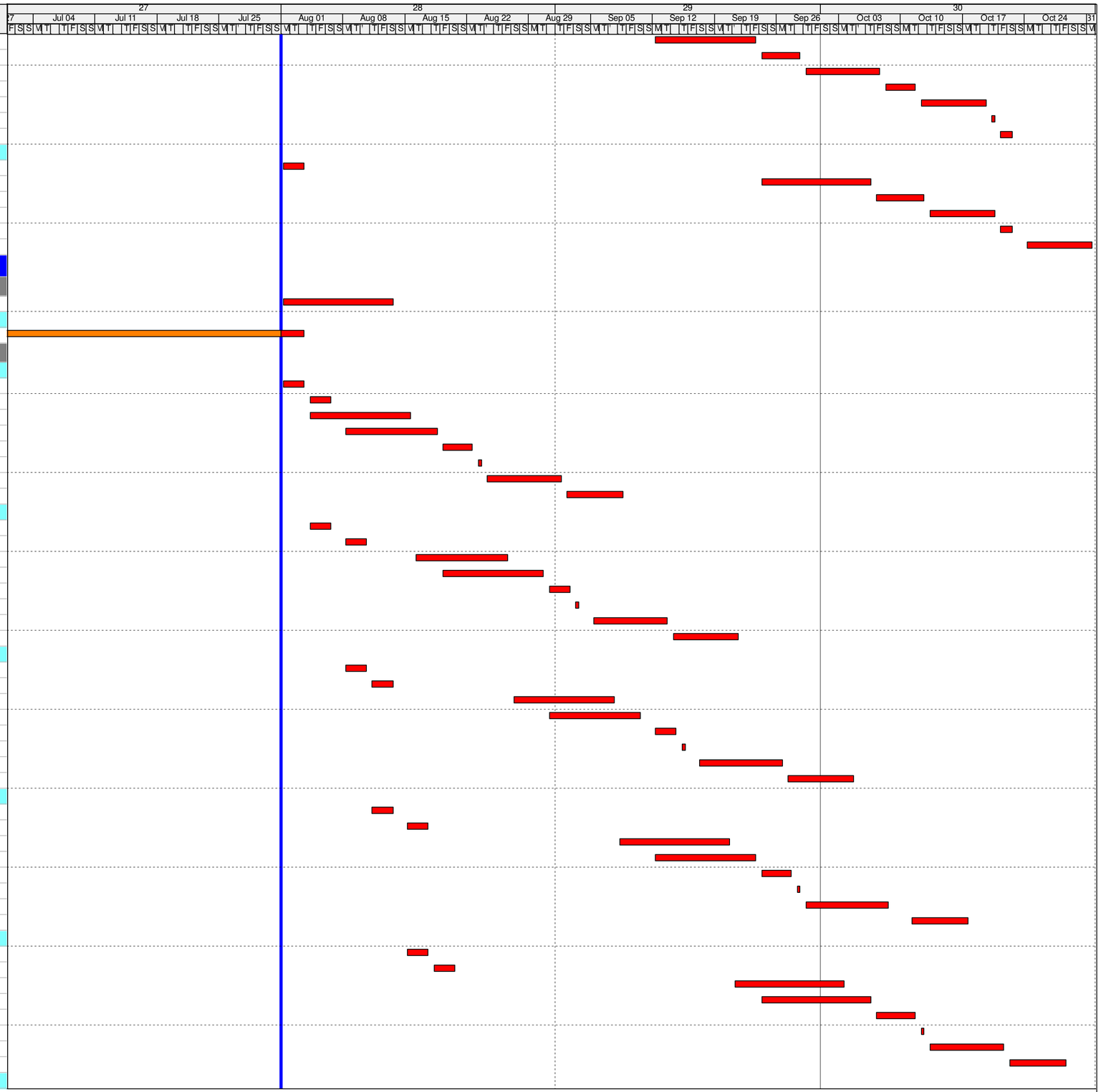
PCB-02-26740	Construct Pile Cap - B4	10	12-Sep-16	23-Sep-16
PCB-02-26750	PCB - Mega Columns B Kicker (+4.0 to +6.2mPD) - B4	4	24-Sep-16	28-Sep-16
PCB-ZZ-4720	Scaffolding and Rebar Fixing - B4	7	29-Sep-16	07-Oct-16
PCB-02-33910	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - B4	2	08-Oct-16	11-Oct-16
PCB-ZZ-5090	PCB - Scaffolding+Embbed Rebar Fixing+MEP - B4	7	12-Oct-16	19-Oct-16
PCB-ZZ-4950	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - B4	1	20-Oct-16	20-Oct-16
PCB-02-26760	Minimum Curing before Stripping Shutter - B4	2	21-Oct-16	22-Oct-16
B5 (to +19.0mPD)				
PCB-02-26770	Break Piles to Cut Off Level (+2.08mPD) and Blind - B5	3	01-Aug-16	03-Aug-16
PCB-02-26780	Construct Pile Cap - B5	10	24-Sep-16	06-Oct-16
PCB-02-26790	PCB - Mega Columns B Kicker (+4.0 to +6.2mPD)- B5	4	07-Oct-16	12-Oct-16
PCB-ZZ-4740	Scaffolding and Rebar Fixing - B5	7	13-Oct-16	20-Oct-16
PCB-02-33920	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - B5	2	21-Oct-16	22-Oct-16
PCB-ZZ-5110	PCB - Scaffolding+Embbed Rebar Fixing+MEP - B5	7	24-Oct-16	31-Oct-16
Gridline A				
Gridline A Bored Piling Works				
PCB-XX-720	GL A - Reinstate Compacted Earth Platform and Earth Slope	12	01-Aug-16	13-Aug-16
Gridline A Bored Piles (15 Piles)				
PCB-02-29200	GL A - Bored Pile Proof Coring and TPIDC	24	16-Jun-16 A	03-Aug-16
Gridline A - RC Works (5 Mega Columns)				
Tie Beams Gridline 1				
PCB-XX-1470	GL1 - Excavate, Pile Trimming and blinding Tie Beam A	3	01-Aug-16	03-Aug-16
PCB-XX-1500	GL1 - Excavate, Pile Trimming and blinding Tie Beam B	3	04-Aug-16	06-Aug-16
PCB-XX-1480	GL1 - Construct Tie Beam A	10	04-Aug-16	15-Aug-16
PCB-XX-1510	GL1 - Construct Tie Beam B	10	08-Aug-16	18-Aug-16
PCB-XX-1520	GL1 -Backfill to +4.28mPD on top of box culvert	3	19-Aug-16	22-Aug-16
PCB-XX-1530	GL1 - Blinding to beam (middle)	1	23-Aug-16	23-Aug-16
PCB-XX-1540	GL1 - Form and Cast beam (middle)	8	24-Aug-16	01-Sep-16
PCB-XX-1550	GL1 - Backfill to ground level at Box Culvert Bay 15 to 17	6	02-Sep-16	08-Sep-16
Tie Beams Gridline 2				
PCB-XX-1370	GL2 - Excavate, Pile Trimming and blinding Tie Beam A	3	04-Aug-16	06-Aug-16
PCB-XX-1400	GL2 - Excavate, Pile Trimming and blinding Tie Beam B	3	08-Aug-16	10-Aug-16
PCB-XX-1380	GL2 - Construct Tie Beam A	10	16-Aug-16	26-Aug-16
PCB-XX-1410	GL2 - Construct Tie Beam B	10	19-Aug-16	30-Aug-16
PCB-XX-1420	GL2 - Backfill to +4.28mPD on top of box culvert	3	31-Aug-16	02-Sep-16
PCB-XX-1430	GL2 - Blinding to beam (middle)	1	03-Sep-16	03-Sep-16
PCB-XX-1440	GL2 - Form and Cast beam (middle)	8	05-Sep-16	13-Sep-16
PCB-XX-1450	GL2 - Backfill to ground level at Box Culvert Bay 12 to 14	6	14-Sep-16	21-Sep-16
Tie Beams Gridline 3				
PCB-XX-1670	GL3 - Excavate, Pile Trimming and blinding Tie Beam A	3	08-Aug-16	10-Aug-16
PCB-XX-1300	GL3 - Excavate, Pile Trimming and blinding Tie Beam B	3	11-Aug-16	13-Aug-16
PCB-XX-1280	GL3 - Construct Tie Beam A	10	27-Aug-16	07-Sep-16
PCB-XX-1310	GL3 - Construct Tie Beam B	10	31-Aug-16	10-Sep-16
PCB-XX-1320	GL3 - Backfill to +4.28mPD on top of box culvert	3	12-Sep-16	14-Sep-16
PCB-XX-1330	GL3 - Blinding to beam (middle)	1	15-Sep-16	15-Sep-16
PCB-XX-1340	GL3 - Form and Cast beam (middle)	8	17-Sep-16	26-Sep-16
PCB-XX-1680	GL3 - Backfill to ground level at Box Culvert Bay 9 to 11	6	27-Sep-16	04-Oct-16
Tie Beams Gridline 4				
PCB-XX-1170	GL4 - Excavate, Pile Trimming and blinding Tie Beam A	3	11-Aug-16	13-Aug-16
PCB-XX-1200	GL4 - Excavate, Pile Trimming and blinding Tie Beam B	3	15-Aug-16	17-Aug-16
PCB-XX-1180	GL4 - Construct Tie Beam A	10	08-Sep-16	20-Sep-16
PCB-XX-1210	GL4 - Construct Tie Beam B	10	12-Sep-16	23-Sep-16
PCB-XX-1220	GL4 - Backfill to +4.28mPD on top of box culvert	3	24-Sep-16	27-Sep-16
PCB-XX-1230	GL4 - Blinding to beam (middle)	1	28-Sep-16	28-Sep-16
PCB-XX-1240	GL4 - Form and Cast beam (middle)	8	29-Sep-16	08-Oct-16
PCB-XX-1250	GL4 - Backfill to ground level at Box Culvert Bay 7 to 8	6	11-Oct-16	17-Oct-16
Tie Beams Gridline 5				
PCB-XX-1070	GL5 - Excavate, Pile Trimming and blinding Tie Beam A	3	15-Aug-16	17-Aug-16
PCB-XX-1090	GL5 - Excavate, Pile Trimming and blinding Tie Beam B	3	18-Aug-16	20-Aug-16
PCB-XX-1080	GL5 - Construct Tie Beam A	10	21-Sep-16	03-Oct-16
PCB-XX-1100	GL5 - Construct Tie Beam B	10	24-Sep-16	06-Oct-16
PCB-XX-1120	GL5 - Backfill to +4.28mPD on top of box culvert	3	07-Oct-16	11-Oct-16
PCB-XX-1130	GL5 - Blinding to beam (middle)	1	12-Oct-16	12-Oct-16
PCB-XX-1140	GL5 - Construct and Cast beam (middle)	8	13-Oct-16	21-Oct-16
PCB-XX-1150	GL5 - Backfill to ground level at Box Culvert Bay 4 to 6	6	22-Oct-16	28-Oct-16
A1 (to +19.0mPD)				



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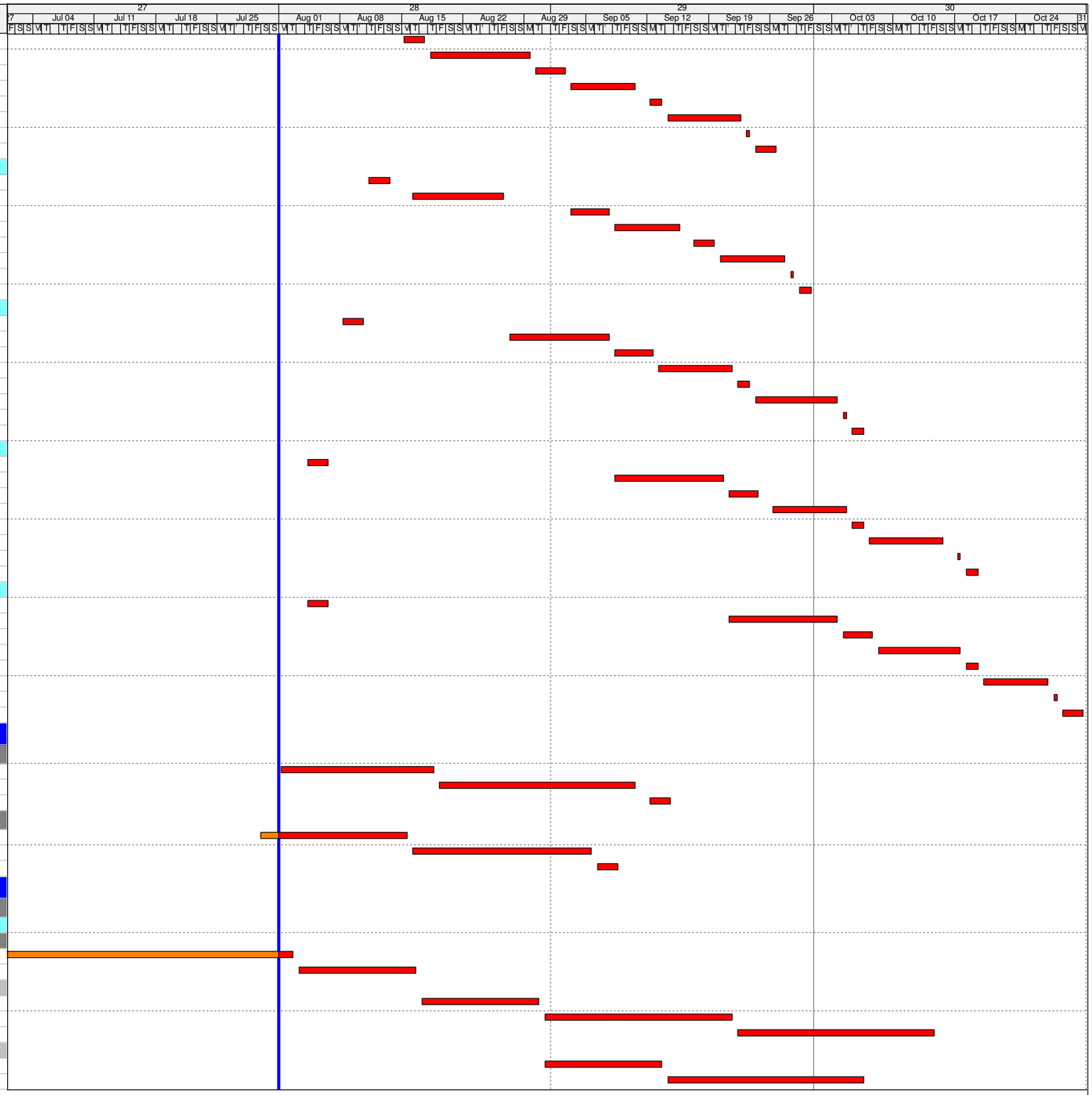
Activity ID	Activity Name	Original Duration	Start	Finish
PCB-02-34380	Break Piles to Cut Off Level (+2.08mPD) and Blind - A1	3	15-Aug-16	17-Aug-16
PCB-02-35880	Construct Pile Cap - A1	10	18-Aug-16	29-Aug-16
PCB-02-35890	PCB - Mega Columns J Kicker (+4.0 to +6.2mPD) - A1	4	30-Aug-16	02-Sep-16
PCB-ZZ-5220	Scaffolding and Rebar Fixing - A1	7	03-Sep-16	10-Sep-16
PCB-02-34580	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - A1	2	12-Sep-16	13-Sep-16
PCB-ZZ-5320	PCB - Scaffolding+Embbed Rebar Fixing+MEP - A1	7	14-Sep-16	22-Sep-16
PCB-ZZ-5230	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - A1	1	23-Sep-16	23-Sep-16
PCB-02-35900	Minimum Curing before Stripping Shutter - A1	2	24-Sep-16	26-Sep-16
A2 (to +19.0mPD)				
PCB-02-35840	Break Piles to Cut Off Level (+2.08mPD) and Blind - A2	3	11-Aug-16	13-Aug-16
PCB-02-35850	Construct Pile Cap - A2	10	16-Aug-16	26-Aug-16
PCB-02-35860	PCB - Mega Columns J Kicker (+4.0 to +6.2mPD) - A2	4	03-Sep-16	07-Sep-16
PCB-ZZ-5240	Scaffolding and Rebar Fixing - A2	7	08-Sep-16	15-Sep-16
PCB-02-34590	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - A2	2	17-Sep-16	19-Sep-16
PCB-ZZ-5330	PCB - Scaffolding+Embbed Rebar Fixing+MEP - A2	7	20-Sep-16	27-Sep-16
PCB-ZZ-5250	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - A2	1	28-Sep-16	28-Sep-16
PCB-02-35870	Minimum Curing before Stripping Shutter - A2	2	29-Sep-16	30-Sep-16
A3 (to +19.0mPD)				
PCB-02-35180	Excavate and Break Piles to Cut Off Level (+2.08mPD) and Blind - A3	3	08-Aug-16	10-Aug-16
PCB-02-35300	Construct Pile Cap - A3	10	27-Aug-16	07-Sep-16
PCB-02-35420	PCB - Mega Columns J Kicker (+4.0 to +6.2mPD) - A3	4	08-Sep-16	12-Sep-16
PCB-ZZ-5260	Scaffolding and Rebar Fixing - A3	7	13-Sep-16	21-Sep-16
PCB-02-34600	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - A3	2	22-Sep-16	23-Sep-16
PCB-ZZ-5340	PCB - Scaffolding+Embbed Rebar Fixing+MEP - A3	7	24-Sep-16	03-Oct-16
PCB-ZZ-5270	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - A3	1	04-Oct-16	04-Oct-16
PCB-02-35830	Minimum Curing before Stripping Shutter - A3	2	05-Oct-16	06-Oct-16
A4 (to +19.0mPD)				
PCB-02-34500	Excavate and Break Piles to Cut Off Level (+2.08mPD) and Blind - A4	3	04-Aug-16	06-Aug-16
PCB-02-34510	Construct Pile Cap - A4	10	08-Sep-16	20-Sep-16
PCB-02-34520	PCB - Mega Columns J Kicker (+4.0 to +6.2mPD) - A4	4	21-Sep-16	24-Sep-16
PCB-ZZ-5280	Scaffolding and Rebar Fixing - A4	7	26-Sep-16	04-Oct-16
PCB-02-34610	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - A4	2	05-Oct-16	06-Oct-16
PCB-ZZ-5350	PCB - Scaffolding+Embbed Rebar Fixing+MEP - A4	7	07-Oct-16	15-Oct-16
PCB-ZZ-5290	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - A4	1	17-Oct-16	17-Oct-16
PCB-02-34530	Minimum Curing before Stripping Shutter -A4	2	18-Oct-16	19-Oct-16
A5 (to +19.0mPD)				
PCB-02-34540	Excavate and Break Piles to Cut Off Level (+2.08mPD) and Blind - A5	3	04-Aug-16	06-Aug-16
PCB-02-34550	Construct Pile Cap - A5	10	21-Sep-16	03-Oct-16
PCB-02-34560	PCB - Mega Columns J Kicker (+4.0 to +6.2mPD) - A5	4	04-Oct-16	07-Oct-16
PCB-ZZ-5300	Scaffolding and Rebar Fixing - A5	7	08-Oct-16	17-Oct-16
PCB-02-34620	PCB - Mega Column Fix Shutters and Cast (+6.2 to +16.5mPD) - A5	2	18-Oct-16	19-Oct-16
PCB-ZZ-5360	PCB - Scaffolding+Embbed Rebar Fixing+MEP - A5	7	20-Oct-16	27-Oct-16
PCB-ZZ-5310	PCB - Mega Column Final Pour (+16.5 to +19.45mPD) - A5	1	28-Oct-16	28-Oct-16
PCB-02-34570	Minimum Curing before Stripping Shutter - A5	2	29-Oct-16	31-Oct-16
Common Utilities Enclosure				
Bay 5				
PCB-9A-400	CUE - Construct Base Slab of Bay 5	16	01-Aug-16	18-Aug-16
PCB-9A-410	CUE - Construct external/internal walls and Top Slab to Bay 5	20	19-Aug-16	10-Sep-16
PCB-9A-430	CUE - Apply Waterproofing to Bay 5	3	12-Sep-16	14-Sep-16
Bay 6				
PCB-9A-440	CUE - Construct Base Slab of Bay 6	16	30-Jul-16 A	15-Aug-16
PCB-9A-450	CUE - Construct external/internal walls and Top Slab to Bay 6	18	16-Aug-16	05-Sep-16
PCB-9A-470	CUE - Apply Waterproofing to Bay 6	3	06-Sep-16	08-Sep-16
Box Culvert A				
RC Structures				
Portion A2 (West)				
Portion A2 (West)				
PCB-09-1150	BCA (A2W) Sheetpiling and ELS (60m x 2) (Bays 21 to 24)	24	16-May-16 A	02-Aug-16
PCB-09-1160	BCA (A2W) Bulk Excavation (60m) (Bays 21 to 24)	12	03-Aug-16	16-Aug-16
Bay 19				
PCB-09-1200-1	BCA (A2E) Excavate and Construct PC20	12	17-Aug-16	30-Aug-16
PCB-09-1200-2	BCA (A2E) Construct Bay 19 Base Slab	18	31-Aug-16	21-Sep-16
PCB-09-1200-3	BCA (A2E) Construct Bay 19 Wall and Roof Slab	18	22-Sep-16	14-Oct-16
Bay 20				
PCB-09-1220-1	BCA (A2E) Excavate and Construct PC21	12	31-Aug-16	13-Sep-16
PCB-09-1220-2	BCA (A2E) Construct Bay 20 Base Slab	18	14-Sep-16	06-Oct-16

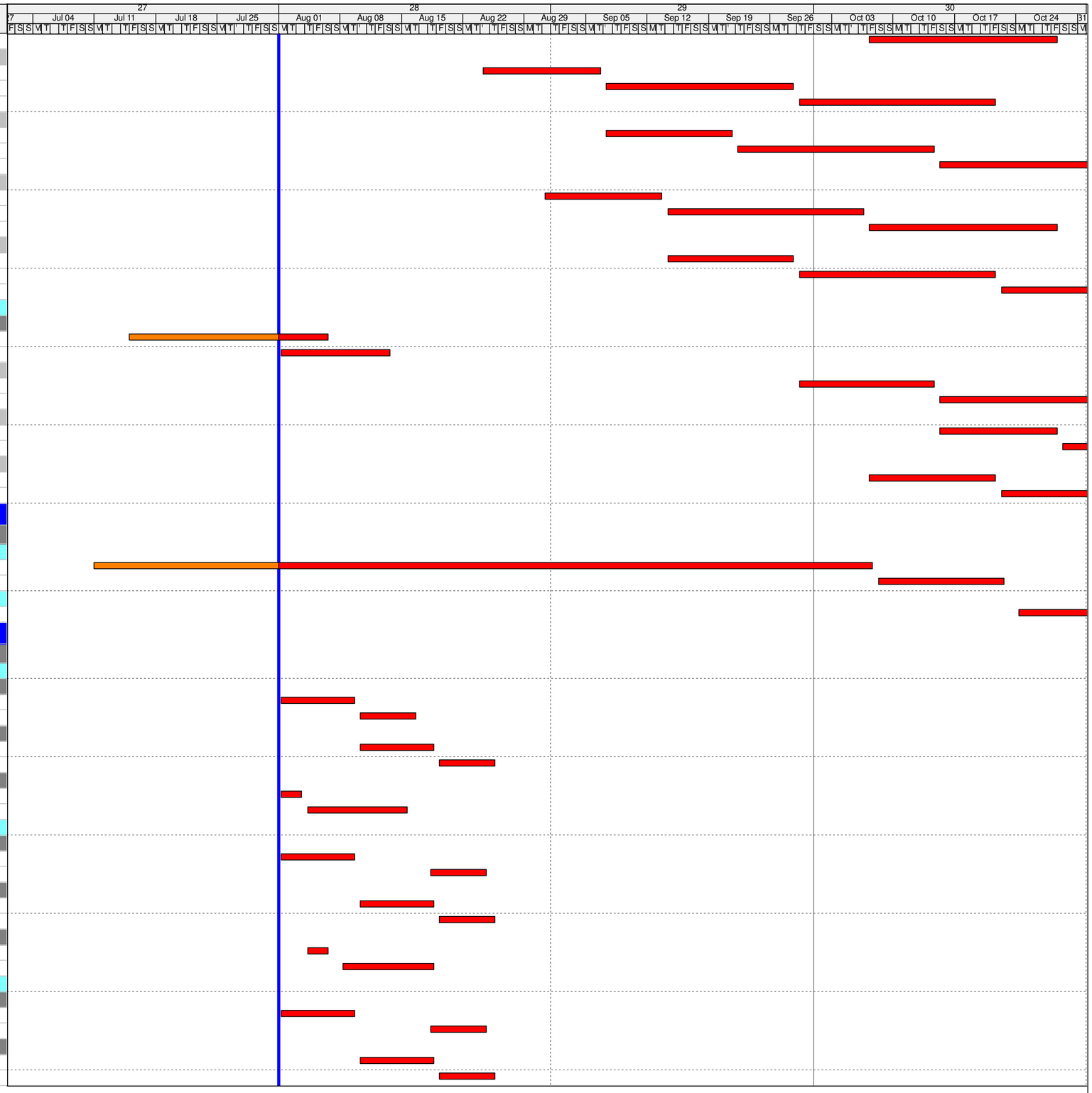


Actual Work
Remaining Work
Critical Remaining Work
Milestone

3 MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
	3-Month Rolling Programme		

Activity ID	Activity Name	Original Duration	Start	Finish
PCB-09-1220-3	BCA (A2E) Construct Bay 20 Wall and Roof Slab	18	07-Oct-16	28-Oct-16
Bay 21				
PCB-09-1230-1	BCA (A2E) Excavate and Construct PC22	12	24-Aug-16	06-Sep-16
PCB-09-1230-2	BCA (A2E) Construct Bay 21 Base Slab	18	07-Sep-16	28-Sep-16
PCB-09-1230-3	BCA (A2E) Construct Bay 21 Wall and Roof Slab	18	29-Sep-16	21-Oct-16
Bay 22				
PCB-09-1240-1	BCA (A2E) Excavate and Construct PC23	12	07-Sep-16	21-Sep-16
PCB-09-1240-2	BCA (A2E) Construct Bay 22 Base Slab	18	22-Sep-16	14-Oct-16
PCB-09-1240-3	BCA (A2E) Construct Bay 22 Wall and Roof Slab	18	15-Oct-16	04-Nov-16
Bay 23				
PCB-09-1260-1	BCA (A2E) Excavate and Construct PC24	12	31-Aug-16	13-Sep-16
PCB-09-1260-2	BCA (A2E) Construct Bay 23 Base Slab	18	14-Sep-16	06-Oct-16
PCB-09-1260-3	BCA (A2E) Construct Bay 23 Wall and Roof Slab	18	07-Oct-16	28-Oct-16
Bay 24				
PCB-09-1270-1	BCA (A2E) Excavate and Construct PC25	12	14-Sep-16	28-Sep-16
PCB-09-1270-2	BCA (A2E) Construct Bay 24 Base Slab	18	29-Sep-16	21-Oct-16
PCB-09-1270-3	BCA (A2E) Construct Bay 24 Wall and Roof Slab	18	22-Oct-16	11-Nov-16
Portion B				
Portion B				
PCB-09-1940	BCA (B) Install S1 Level ELS	9	15-Jul-16 A	06-Aug-16
PCB-09-2130	BCA (B) Excavation (45m) (Bays 25 to 27)	12	01-Aug-16	13-Aug-16
Bay 25				
PCB-09-1280-1	BCA (B)and Construct PC26	12	29-Sep-16	14-Oct-16
PCB-09-1280-2	BCA (B) Construct Bay 25 Base Slab	18	15-Oct-16	04-Nov-16
Bay 26				
PCB-09-1330-1	BCA (B) Excavate and Construct PC27	12	15-Oct-16	28-Oct-16
PCB-09-1330-2	BCA (B) Construct Bay 26 Base Slab	18	29-Oct-16	18-Nov-16
Bay 27				
PCB-09-1340-1	BCA (B) Excavate and Construct PC28	12	07-Oct-16	21-Oct-16
PCB-09-1340-2	BCA (B) Construct Bay 27 Base Slab	18	22-Oct-16	11-Nov-16
Seawater Pump House				
RC Structures				
Foundations				
PCB-13A-750	SWP - Jetgrouting	77	11-Jul-16 A	07-Oct-16
PCB-13A-140	SWP - Construct Pile caps & Tie beams	12	08-Oct-16	22-Oct-16
Basement				
PCB-13A-150	SWP - Construct Basement Base Slab at -2.8mPD (Including Waterproofing)	12	24-Oct-16	05-Nov-16
Northern Footbridge Links				
Pile Caps & Piers				
Footbridge 1				
Pier P1 - GL.A				
PCB-03-980	NFB1(P1) - VSL Install Roof Erection Temp Footings above P1	8	01-Aug-16	09-Aug-16
PCB-03-990	NFB1(P1) - VSL Install Roof Erection Temp Support Towers P1	6	10-Aug-16	16-Aug-16
Pier P2 - GL.B				
PCB-03-1020	NFB1(P2) - VSL Install Roof Erection Temp Footings above P2	8	10-Aug-16	18-Aug-16
PCB-03-1030	NFB1(P2) - VSL Install Roof Erection Temp Support Towers at P2	6	19-Aug-16	25-Aug-16
Abutment				
PCB-03-1280	NFB1(A) - Open Cut and Blind Excavation for Abutment	3	01-Aug-16	03-Aug-16
PCB-03-1290	NFB1(A) - Construct Abutment	10	04-Aug-16	15-Aug-16
Footbridge 2				
Pier P1 - GL.A				
PCB-03-1060	NFB2(P1) - VSL Install Roof Erection Temp Footings above P1	8	01-Aug-16	09-Aug-16
PCB-03-1070	NFB2(P1) - VSL Install Roof Erection Temp Support Towers P1	6	18-Aug-16	24-Aug-16
Pier P2 - GL.B				
PCB-03-1180	NFB2(P2) - VSL Install Roof Erection Temp Footings above P2	8	10-Aug-16	18-Aug-16
PCB-03-1190	NFB2(P2) - VSL Install Roof Erection Temp Support Towers at P2	6	19-Aug-16	25-Aug-16
Abutment				
PCB-03-1300	NFB2(A) - Open Cut and Blind Excavation for Abutment	3	04-Aug-16	06-Aug-16
PCB-03-1310	NFB2(A) - Construct Abutment	10	08-Aug-16	18-Aug-16
Footbridge 3				
Pier P1 - GL.A				
PCB-03-1100	NFB3(P1) - VSL Install Roof Erection Temp Footings above P1	8	01-Aug-16	09-Aug-16
PCB-03-1110	NFB3(P1) - VSL Install Roof Erection Temp Support Towers P1	6	18-Aug-16	24-Aug-16
Pier P2 - GL.B				
PCB-03-1220	NFB3(P2) - VSL Install Roof Erection Temp Footings above P2	8	10-Aug-16	18-Aug-16
PCB-03-1230	NFB3(P2) - VSL Install Roof Erection Temp Support Towers at P2	6	19-Aug-16	25-Aug-16

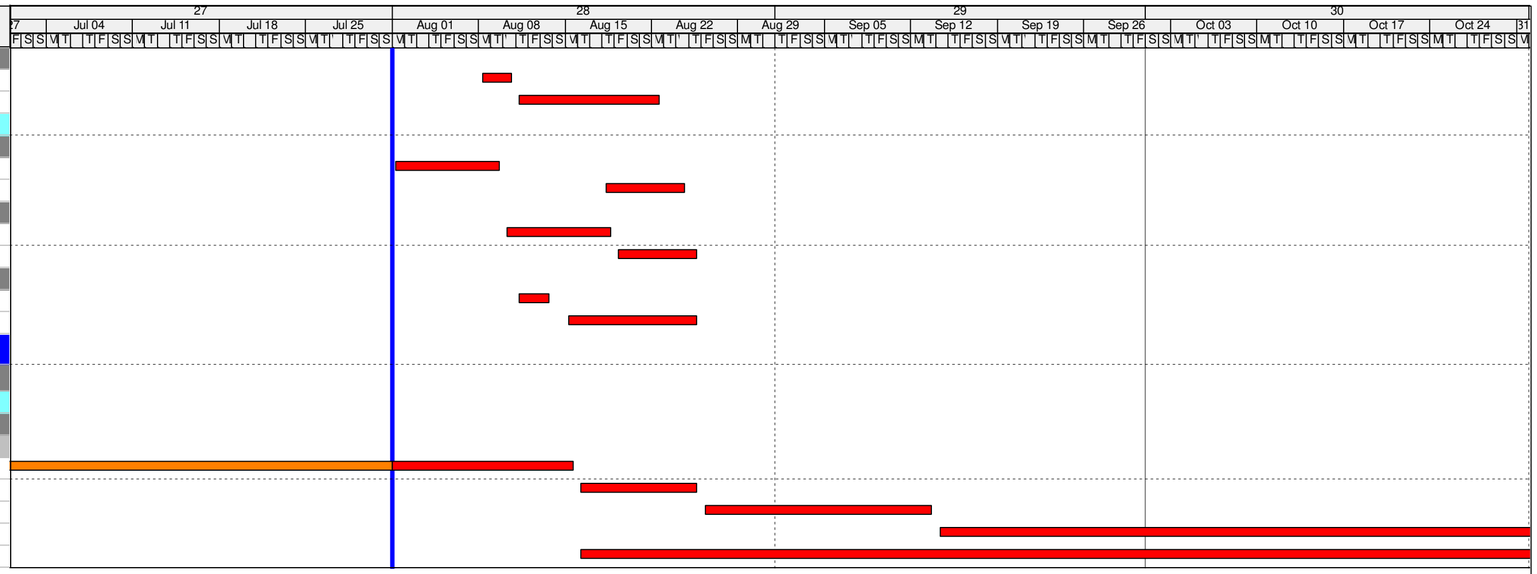


Actual Work
Remaining Work
Critical Remaining Work
Milestone

3 MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
	3-Month Rolling Programme		

Activity ID	Activity Name	Original Duration	Start	Finish
Abutment				
PCB-03-1320	NFB3(A) - Open Cut and Blind Excavation for Abutment	3	08-Aug-16	10-Aug-16
PCB-03-1330	NFB3(A) - Construct Abutment	10	11-Aug-16	22-Aug-16
Footbridge 4				
Pier P1 - GL.A				
PCB-03-1140	NFB4(P1) - VSL Install Roof Erection Temp Footings above P1	8	01-Aug-16	09-Aug-16
PCB-03-1150	NFB4(P1) - VSL Install Roof Erection Temp Support Towers P1	6	18-Aug-16	24-Aug-16
Pier P2 - GL.B				
PCB-03-1260	NFB4(P2) - VSL Install Roof Erection Temp Footings above P2	8	10-Aug-16	18-Aug-16
PCB-03-1270	NFB4(P2) - VSL Install Roof Erection Temp Support Towers at P2	6	19-Aug-16	25-Aug-16
Abutment				
PCB-03-1340	NFB4(A) - Open Cut and Blind Excavation for Abutment	3	11-Aug-16	13-Aug-16
PCB-03-1350	NFB4(A) - Construct Abutment	10	15-Aug-16	25-Aug-16
Seawater Cooling Mains and Chilled Water Supply				
Seawater Intake & Discharge				
RC Structures				
Seawater Outfall Culvert				
Stage 1				
PCB-14-2080	C2 - Contract Hy/2013/02 complete Bore Piling at Abutment (assumed)	49	03-May-16 A	15-Aug-16
PCB-14-2030	SOC - Install Sheetpiles to Cofferdam	9	16-Aug-16	25-Aug-16
PCB-14-2040	SOC - Excavation and ELS	16	26-Aug-16	13-Sep-16
PCB-14-240	SOC - Construct Seawater Outfall Structure	40	14-Sep-16	02-Nov-16
PCB-14-2090	C2 - Contract Hy/2013/02 Construct Abutment Pilecap and Wall (assumed)	74	16-Aug-16	12-Nov-16



Actual Work
Remaining Work
Critical Remaining Work
Milestone

3 MONTH ROLLING PROGRAMME

Date	Revision	Checked	Approved
	3-Month Rolling Programme		

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)

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

Implementation Schedule for Environmental Mitigation Measures

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√
S5.5.6.4	A3	The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact	√
S5.5.6.5	A4	Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	Control construction dust	Engineer	All construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation	√
S5.5.6.5	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation • To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√ (The dust monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02 and Contract No. HY/2011/03.)

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Air borne)								
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	√
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m^2), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises • The movable barrier should achieve at least 5dB(A) and the full enclosure should be	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance & its TM • Annex 5, TM-EIA	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	√
/	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises	√ (The noise monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02.)
Sediment								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	• Waste Disposal Ordinance • ETW B TC 34/2002	N/A

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

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

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

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

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

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

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

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
EM&A								
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	√
S15.5 - S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Contractor	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	√

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

APPENDIX F

Site Audit Findings and Corrective Actions

Appendix F – Site Audit Findings and Corrective Actions

1.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting period, thirteen site inspections were carried out on 6, 13, 20 and 27 July, 3, 10, 17, 24 and 31 August and 7, 14, 21 and 28 September 2016.

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

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
29 June 2016	1. Rubbish was found on the basement floor at Common Utilities Enclosure (CUE).	1. The rubbish was cleared on the basement floor at CUE.	6 July 2016
6 July 2016	1. Chemical drums were placed on the ground near the site office of sub-contractor.	1. Drip trays were provided for the chemical drums near the site office of sub-contractor.	13 July 2016
13 July 2016	1. General refuse was found on the ground at WA1	1. The general refuse was cleared on the ground at WA1.	20 July 2016
	2. The doors of power room were opened when a crawler crane was in operation	2. The doors of power room were closed when a crawler crane was in operation.	
20 July 2016	No particular environmental issue was recorded during the site inspection.	Nil	Nil
27 July 2016	1. A haul road at eastern side of site area was observed dry.	1. The haul road at eastern side of site area was observed wet.	3 August 2016
	2. A chemical Dim was found on the ground without drip tray near seawater pump house	2. The chemical drum near the seawater pump house was removed.	
	3. Construction waste was accumulated on the ground near seawater pump house.	3. The construction waste near the seawater pump house was removed.	
3 August 2016	No particular environmental issue was recorded during the site inspection.	Nil	Nil
10 August 2016	1. Chemical Containers were found on the ground near Box Culvert A.	1. The chemical containers were removed from Box Culvert A.	17 August 2016

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
	2. An oil stain was found on the ground near Box Culvert A.	2. The oil stain was cleared on the ground from Box Culvert A.	
	3. Oil Product was stored in plastic bottles and found without proper drip trays near Box Culvert A.	3. The oil product which was stored in plastic bottles was removed from Box Culvert A.	
17 August 2016	1. Dust emission was generated from jet grouting work at seawater pump house.	1. Water spraying was provided for the grouting works.	24 August 2016
24 August 2016	1. Food containers were found on the ground floor slab	1. The food containers were cleared from the ground floor slab.	31 August 2016
31 August 2016	1. An oil stain was found on the ground at PCB building.	1. The oil stain was cleared on the ground at PCB building	7 September 2016
7 September 2016	1. Stagnant water/ chemicals inside a drip tray was nearly full.	1. The chemicals and drip tray were removed.	14 September 2016
	2. Oil product was stored in plastic bottles near site office and no drip trays were provided for these plastic bottles.	2. The plastic bottles were removed.	
14 September 2016	1. General reuse was accumulated at WA1.	1. The general refuse was removed from WA1	21 September 2016
	2. Mould oil spillage was observed at WA1.	2. The mould oil was cleaned up at WA1.	
21 September 2016	1. Silty wastewater discharge into marine waters through the seawall was observed.	1. No silty wastewater discharged into marine water. An additional wastewater treatment facility was on-site and it would be used to treat the wastewater generated on-site.	28 September 2016
28 September 2016	1. Chemical containers were not placed inside a drip tray.	1. The Contractor was reminded to provide a drip tray for the chemical containers.	Follow-up actions undertaken by the Contractor will be inspected during the site inspection to be undertaken in October 2016.
	2. No chemical labels were provided for chemical containers.	2. The Contractor was reminded to provide proper chemical labels for the chemical containers.	

APPENDIX G

Waste Flow Table

Name of Department: Highways Department

Contract No.: HY/2013/01

LEIGHTON 俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Monthly Summary Waste Flow Table for 2016

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects (see Note 11)	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
January	3.209	0.233	0.000	2.079	1.130	0.000	145.240	0.935	0.000	1.200	0.123
February	1.526	0.025	0.000	0.000	1.526	0.000	74.800	0.000	0.000	0.000	0.125
March	3.698	0.364	0.000	0.099	3.599	0.036	100.720	1.908	0.000	0.000	0.170
April	3.300	0.605	0.000	0.198	3.102	0.000	102.030	0.000	0.000	0.000	0.169
May	1.016	0.264	0.000	0.000	1.016	0.000	88.010	1.062	0.000	2.600	0.278
June	0.903	0.038	0.000	0.000	0.903	5.382	139.740	1.197	0.000	0.000	0.262
Sub-total	13.652	1.529	0.000	2.376	11.276	5.418	650.540	5.102	0.000	3.800	1.127
July	1.863	0.220	0.000	1.238	0.625	21.896	16.520	0.000	0.000	0.600	0.445
August	4.056	0.000	4.056	0.000	0.000	9.290	15.930	1.344	0.000	0.000	0.390
September	0.806	0.000	0.806	0.000	0.000	2.591	30.360	1.290	0.000	0.000	0.469
October											
November											
December											
Total	20.377	1.749	4.862	3.614	11.901	39.195	713.350	7.736	0.000	4.400	2.431

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

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

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

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

Leighton - Chun Wo Joint Venture

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

Diesel density: 0.8kg/l

(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.

(11) The item d “Reused in Other Projects” includes sand only. Other projects refer to Contracts No. HY/2010/02 and HY/2014/05. Inert C&D Materials were transferred to Contract No. HY/2010/02 in January 2016 and to Contract No. HY/2014/05 in March and April 2016.

Monthly Summary of Excavated Marine Sediment for 2016

Month	a. Estimated Volume of Excavated Marine Sediment Generated (m^3)	b. Estimated Volume of Accumulated Excavated Marine Sediment Treated (m^3)	c. Reused in the Contract (m^3)	d. Estimated Volume of Excavated Marine Sediment Reused in Other Project (m^3) (2)	e. Estimated Volume of Treated Excavated Marine Sediment Stored on Site (Unused) (m^3)
Year 2016					
Jan 2016	511	400	0	0	2155
Feb 2016	693	275	0	0	2430
Mar 2016	672	1,363	1215	0	2578
Apr 2016	259	756	700	0	2634
May 2016	287	402	0	0	3036
Jun 2016	240	336	2836	0	536
Jul 2016	331	464	1000	0	0
Aug 2016	0	0	0	0	0
Sep 2016	0	0	0	0	0
Total	**2,993**	**3,996**	**5,751**	**0**	**0** (1)

Notes: (1) This presents the total quantity of unused treated excavated marine sediment stored on site during the reporting month. This figure includes 1,755 m^3 of treated excavated marine sediment from 2015.

APPENDIX H

Environmental Licenses and Permits

Environmental License/ Permits /Notification Register

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

Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1.	All Areas	29 Jul 2013	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/G	6 Aug 2013	N/A	EPD	Superseded by EP-353/2009/H
2.	All Areas	16 Jan 2015	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/H	19 Jan 2015	N/A	EPD	Superseded by EP-353/2009/I
3.	All Areas	30 Jun 2015	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/I	17 Jul 2015	N/A	EPD	Superseded by EP-353/2009/J
4.	All Areas	18 Feb 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K
5.	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	
6.	All Areas	29 Apr 2014	H2620-LTR-EPD-AU-000006	**Billing Account** for disposal of construction waste	Billing Account No.: 7019944	16 May 2014	N/A	EPD	

Environmental License/ Permits /Notification Register

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

Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
7.	PCB	30 Apr 2014	H2620-LTR- EPD-000002	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373961	5 May 2014	N/A	EPD	
8.	WA2	30 Apr 2014	H2620-LTR- EPD-000003	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373956	5 May 2014	N/A	EPD	
9.	WA3	30 Apr 2014	H2620-LTR-EPD-AU-000001	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373962	5 May 2014	N/A	EPD	
10.	PCB	30 May 2014	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	8 Jul 2014	N/A	EPD	
11.	PCB	23 Jun 2014	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	3 Jul 2014	29 Dec 2014	EPD	Superseded by GW-RS0908-14

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Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
12.	WA2	2 Jul 2014	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 2014	15 Jan 2015	EPD	Superseded by GW-RS1034-14
13.	WA3	2 Jul 2014	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 2014	15 Jan 2015	EPD	Expired
14.	PCB	23 Jun 2014	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	3 Sep 2014	22 Dec 2014	EPD	Superseded by GW-RS1044-14
15.	PCB	29 Sep 2014	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 2014	24 Dec 2014	EPD	Superseded by GW-RS1300-14

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Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
16.	WA2	12 Sep 2014	H2620-LTR-EPD-AU-000032	**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-RS1034-14	29 Sep 2014	28 Mar 2015	EPD	Expired
17.	WA4	17 Oct 2014	H2620-LTR-EPD-AU-000036	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0814-14	20 Oct 2014	19 Apr 2015	EPD	Expired and replaced by GW-RW0171-15
18.	PCB	3 Nov 2014	H2620-LTR-EPD-AU-000040	**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-RS1300-14	17 Nov 2014	16 Feb 2015	EPD	Superseded by GW-RS0087-15
19.	PCB	12 Jan 2015	H2620-LTR-EPD-AU-000046	**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-RS0087-15	26 Jan 2015	25 Apr 2015	EPD	Superseded by GW-RS0308-15

Environmental License/ Permits /Notification Register

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

Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
20.	PCB	12 Mar 2015	H2620-LTR-EPD-AU-000051	**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-RS0308-15	26 Mar 2015	25 Jun 2015	EPD	Superseded by GW-RS0476-15
21.	PCB	31 Jul 2014	H2620-LTR-EPD-AU-000038	**Water Discharge License** for construction works on PCB island	WT00020335-2014	13 Nov 2014	30 Nov 2019	EPD	
22.	WA4	27 Mar 2015	H2620-LTR-EPD-AU-000054	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0171-15	20 Apr 2015	19 Oct 2015	EPD	Superseded by GW-RW0351-15
23.	PCB	15 Apr 2015	H2620-LTR-EPD-AU-000057	**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-RS0476-15	1 May 2015	31 Jul 2015	EPD	Superseded by GW-RS0685-15

Environmental License/ Permits /Notification Register

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Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
24.	PCB	9 Jun 2015	H2620-LTR-EPD-AU-000063	**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-RS0685-15	1 Jul 2015	30 Sep 2015	EPD	Superseded by GW-RS0877-15
25.	WA4	29 Jun 2015	H2620-LTR-EPD-AU-000066	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0351-15	17 Jul 2015	12 Jan 2016	EPD	Expired. Replaced by GW-RW0003-16
26.	PCB	27 Jul 2015	H2620-LTR-EPD-AU-000069	**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-RS0877-15	10 Aug 2015	09 Nov 2015	EPD	Superseded by GW-RS1016-15
27.	PCB	2 Sep 2015	H2620-LTR-EPD-AU-000072	**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-RS1016-15	18 Sep 2015	17 Dec 2015	EPD	Superseded by GW-RS1195-15

Environmental License/ Permits /Notification Register

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

Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
28.	PCB	22 Oct 2015	H2620-LTR-EPD-AU-000075	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1195-15	9 Nov 2015	8 Feb 2016	EPD	Superseded by GW-RS1444-15
29.	PCB	17 Dec 2015	H2620-LTR-EPD-AU-000076	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1444-15	31 Dec 2015	30 Mar 2016	EPD	Superseded by GW-RS0191-16
30.	WA4	24 Dec 2015	H2620-LTR-EPD-AU-000080	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0003-16	13 Jan 2016	6 Jul 2016	EPD	Superseded by GW-RW0394-16
31.	PCB	17 Feb 2016	H2620-LTR-EPD-AU-000083	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0191-16	3 Mar 2016	2 Jun 2016	EPD	Superseded by GW-RS0543-16

Environmental License/ Permits /Notification Register

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

Date : September 2016

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
32.	PCB	18 May 2016	H2620-LTR-EPD-AU-000086	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0543-16	2 Jun 2016	1 Sep 2016	EPD	Superseded by GW-RS0879-16
33.	WA4	20 Jun 2016	H2620-LTR-EPD-AU-000089	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0394-16	07 Jul 2016	06 Jan 2017	EPD	
34.	PCB	09 Aug 2016	H2620-LTR-EPD-AU-000092	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0879-16	23 Aug 2016	22 Dec 2016	EPD	

APPENDIX I

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Complaint Register

Complaint No.	Complaint Received Date	Category	Complaint Details	Follow up Action /Recommendation	Status
001	22 May 2015	Air Quality and Noise	According to ENPO's email to the ET on 22 May 2015, it was noted that EPD had received a complaint regarding the noise nuisance and dark smoke emission during the night time at HKBCF Project work area recently.	After investigation, there is no sufficient evidence to justify the concerned dark smoke and noise nuisance are related to Contract No. HY/2013/01. In this case, no follow up action is required. However, the Contractor has been reminded to provide maintenance for all machinery regularly to prevent dark smoke emission and comply with CNP conditions for construction works undertaken during the restricted hours.	Closed.
002	13 July 2015	Noise	According to ENPO's email to Highways Department on 13 July 2015, it is noted that EPD received a complaint regarding the noise nuisance generated from the construction site near Tung Chung Development Ferry Pier and HKBCF construction site opposite to Seaview Crescent during night time period from 3 to 12 July 2015. Afterwards, EPD sent an email to Highways Department on 15 July 2015 to clarify that the noise complaint referred to the noise generated due to excavation with a grab dredger, transfer of excavated material using a derrick barge and a tug boat, and backfilling with a pelican barge at the Hong Kong Boundary Crossing Facilities Site near Hong Kong Skycity Marriott Hotel. Based on EPD's record, the above construction activities were covered by Construction Noise Permit (CNP) no. GW-RS0503-15.	The Contractor confirmed that CNP no. GW-S0503-15 is not for Contract No. HY/2013/01. In addition, no barges, dredger and tug boats were used for Contract No. HY/2013/01. Based on the investigation results, it is found that the noise nuisance is not related to Contract No. HY/2013/01. No follow up action is required. It is noted that the Contractor has Construction Noise Permit (CNP) No. GW-RS0685-15 to undertake construction works during restricted hours. The Contractor has been reminded to comply with CNP conditions for construction works undertaken during the restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following measures to minimize noise nuisance. – Minimize the quantities of plant used during restricted hours as far as practicable; and – Regular review of working duration for restricted hours works and switch off all unnecessary machinery and plant during restricted hours.	Closed

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

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