

**JOB No.: TCS00975/18**

**CEDD CONTRACT AGREEMENT NO. EDO/04/2018 -  
ENVIRONMENTAL TEAM FOR CROSS BAY LINK, TSEUNG  
KWAN O**

**QUARTERLY ENVIRONMENTAL MONITORING AND  
AUDIT (EM&A) SUMMARY REPORT  
(JUNE 2021 TO AUGUST 2021)**

**PREPARED FOR  
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
(CEDD)**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified By</b>
28 January 2022	TCS00975/18/600/R0580v3	 Martin Li (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

<b>Version</b>	<b>Date</b>	<b>Remarks</b>
1	22 October 2021	First Submission
2	26 January 2022	Amended as Per IEC' comment on 24 January 2022
3	28 January 2022	Amended as Per IEC' comment on 26 January 2022



Acuity Sustainability Consulting Limited –  
Nature & Technologies (HK) Limited Joint Venture



Our ref: PL-202202014

AECOM Asia Company Limited  
8/F., Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin, New Territories, Hong Kong

Attention: Mr. Conrad NG

12 February 2022

Dear Sir,

**Contract No. NE/2017/07 & NE/2017/08**  
**Cross Bay Link, Tseung Kwan O**  
**Quarterly EM&A Report for June to August 2021**

I refer to the email of ET concerning the Quarterly EM&A Report for June to August 2021 (Version 3) with Ref. No. TCS00975/18/600/R0580v3. I have no adverse comment on it and verify the captioned according to section 1.9 of Environmental Permit with No. EP-459-2013.

Yours faithfully,

A handwritten signature in black ink, appearing to be 'Li Wai Ming Kevin'.

Li Wai Ming Kevin  
Independent Environmental Checker

cc. Mr. T.W. TAM (ETL)  
Mr. Wilson CHUNG (CEDD)

## EXECUTIVE SUMMARY

- ES01 Civil Engineering and Development Department (hereafter referred as “CEDD”) is the Project Proponent and the Permit Holder of the Project Cross Bay Link, Tseung Kwan O (hereinafter referred as “the Project”) which is a Designated Project to be implemented under Environmental Permit number EP-459/2013 (hereinafter referred as “the EP-459/2013” or “the EP”).
- ES02 AUES was awarded the CEDD Contract Agreement No. EDO/04/2018 - Environmental Team for Cross Bay Link, Tseung Kwan O (hereinafter called “the Service Contract”). The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the Approved EM&A Manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Agreement No. CE 43/2008 (HY) Cross Bay Link, Tseung Kwan O - Investigation and other relevant statutory requirements.
- ES03 This is the **11<sup>th</sup>** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1<sup>st</sup> June 2021** to **31<sup>st</sup> August 2021** (hereinafter ‘the Reporting Period’).

## ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

- ES04 Environmental monitoring activities under the EM&A program in this Reporting Period are summarized in the following table.

**Table ES-4 Summary Environmental Monitoring Activities Undertaken in the Reporting Period**

Issues	Environmental Monitoring Parameters / Inspection		Sessions
Air Quality	1-Hour TSP		96
	24-Hr TSP		25
Construction Noise	Leq (30min) Daytime		42
	Leq (5min) Evening <sup>(Note 1)</sup>		6
	Leq (5min) Night <sup>(Note 1)</sup>		9
Water Quality	Marine Water Sampling <sup>(Note 2) (Note 3)</sup>		0
Inspection / Audit	Contract 1	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3
	Contract 2	ET Regular Environmental Site Inspection	13
		Joint site audit with Project Consultant and IEC	3

*Note 1 Total sessions are counted by every 3 consecutive Leq5min*

*Note 2 Total sessions are counted by monitoring days*

*Note 3 Since the marine construction works that requires marine water quality monitoring as stated in the EM&A Manual were completed, the impact water quality monitoring was ceased with effect from 1 May 2020.*

## BREACH OF ACTION AND LIMIT (A/L) LEVELS

- ES05 No air quality monitoring exceedance was recorded in this Reporting Period. **Seven (7)** noise complaints (which triggered Action Level), **four (4)** sessions of evening construction noise monitoring limit level exceedances and **nine (9)** sessions of night time construction noise monitoring limit level exceedances were recorded in this Reporting Period. The statistics of environmental exceedance and investigation of exceedance are summarized in the following table.

**Table ES-5 Summary Environmental Monitoring Parameter Exceedance in the Reporting Period**

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action	
				Investigation Results	Corrective Actions
Air Quality	1-Hour TSP	0	0	--	--
	24-Hr TSP	0	0	--	--
Construction Noise	Leq <sub>30min</sub> Daytime	7	0	Six (6) Project Related; One (1) Invalid	Although the complaints were considered related to the Project, the Contractor has strictly followed the CNP requirement.
	Leq <sub>5min</sub> Evening	0	4	Not Project Related	--
	Leq <sub>5min</sub> Night	0	9	Not Project Related	--
Water Quality (Marine Water)	DO	0	0	--	--
	Turbidity	0	0	--	--
	SS	0	0	--	--

**ENVIRONMENTAL COMPLAINT**

ES06 Ten (10) environmental complaint was recorded in this Reporting Period for the Project. The statistics of environmental complaint are summarized in the following table.

**Table ES-6 Summary Environmental Complaint Records in the Reporting Period**

Reporting Period	Contract	Environmental Complaint Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 June 2021 – 31 August 2021	1	7	23	Noise (6)	Six (5) Project Related; One (1) Invalid
				Light (1)	Project Related
	2	3	14	Noise (1)	Project Related
				Water (2)	Not Project Related

**NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

ES07 No environmental summons or prosecutions was received in this Reporting Period for the Project. The statistics of environmental summons or prosecutions are summarized in the following tables.

**Table ES-7 Summary Environmental Summons Records in the Reporting Period**

Reporting Period	Contract	Environmental Summons Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 June 2021 – 31 August 2021	1	0	0	NA	NA
	2	0	0	NA	NA

**Table ES-8 Summary Environmental Prosecutions Records in the Reporting Period**

Reporting Period	Contract	Environmental Prosecution Statistics			Related with the Works Contract(s)
		Frequency	Cumulative	Complaint Nature	
1 June 2021 – 31 August 2021	1	0	0	NA	NA
	2	0	0	NA	NA

**SITE INSPECTION BY EXTERNAL PARTIES**

ES08 No site inspection was undertaken by AFCD within the Reporting Period. However, EPD inspection were undertaken on 30 June 2021, 6 & 22 July 2021 and 4 & 30 August 2021.

**Table of Contents**

<b>1. INTRODUCTION</b>	<b>3</b>
1.1 PROJECT BACKGROUND	3
1.2 REPORT STRUCTURE	3
<b>2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION</b>	<b>4</b>
2.1 PROJECT ORGANIZATION	4
2.2 CONSTRUCTION PROGRESS	4
2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS	4
<b>3. SUMMARY OF ENVIRONMENTAL MONITORING PROGRAMMES AND REQUIREMENTS</b>	<b>5</b>
3.1 GENERAL	5
3.2 MONITORING PARAMETERS	5
3.3 MONITORING LOCATIONS	5
3.4 MONITORING FREQUENCY AND PERIOD	6
3.5 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS	7
<b>4. IMPACT MONITORING RESULT</b>	<b>9</b>
4.1 RESULTS OF AIR QUALITY MONITORING IN THE REPORTING MONTH	9
4.2 RESULTS OF CONSTRUCTION NOISE MONITORING	9
4.3 RESULTS OF WATER QUALITY MONITORING	10
<b>5. WASTE MANAGEMENT</b>	<b>11</b>
5.1 GENERAL WASTE MANAGEMENT	11
5.2 RECORDS OF WASTE QUANTITIES	11
<b>6. SITE INSPECTION</b>	<b>12</b>
6.1 REQUIREMENTS	12
6.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH	12
<b>7. LANDFILL GAS MONITORING</b>	<b>13</b>
7.1 GENERAL REQUIREMENT	13
7.2 LIMIT LEVELS AND EVENT AND ACTION PLAN	13
7.3 LANDFILL GAS MONITORING	13
<b>8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE</b>	<b>15</b>
8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION	15
<b>9. IMPLEMENTATION STATUS OF MITIGATION MEASURES</b>	<b>16</b>
9.1 GENERAL REQUIREMENTS	16
<b>10. CONCLUSIONS AND RECOMMENDATIONS</b>	<b>17</b>
10.1 CONCLUSIONS	17
10.2 RECOMMENDATIONS	17

### **LIST OF TABLES**

TABLE 3-1	SUMMARY OF EM&A REQUIREMENTS
TABLE 3-2	DESIGNATED AIR QUALITY MONITORING LOCATION RECOMMENDED IN EM&A MANUAL
TABLE 3-3	DESIGNATED CONSTRUCTION NOISE MONITORING LOCATION RECOMMENDED IN EM&A MANUAL
TABLE 3-4	DESIGNATED AND INTERIM ALTERNATIVE LOCATION FOR AIR QUALITY AND NOISE MONITORING IN THE REPORTING PERIOD
TABLE 3-5	LOCATION OF WATER QUALITY MONITORING STATION
TABLE 3-6	ACTION AND LIMIT LEVELS FOR AIR QUALITY
TABLE 3-7	ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
TABLE 3-8	ACTION AND LIMIT LEVELS FOR WATER QUALITY
TABLE 4-1	SUMMARY OF AIR QUALITY IMPACT MONITORING RESULTS
TABLE 4-2	SUMMARY OF CONSTRUCTION NOISE IMPACT MONITORING RESULTS
TABLE 5-1	SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
TABLE 5-2	SUMMARY OF QUANTITIES OF C&D WASTES
TABLE 6-1	SUMMARY OF SITE OBSERVATIONS OF CONTRACT 1
TABLE 6-2	SUMMARY OF SITE OBSERVATIONS OF CONTRACT 2
TABLE 7-1	ACTIONS IN THE EVENT OF LANDFILL GAS BEING DETECTED IN EXCAVATIONS
TABLE 8-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 8-2	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 8-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 9-1	ENVIRONMENTAL MITIGATION MEASURES IN THE REPORTING PERIOD

### **LIST OF APPENDICES**

APPENDIX A	PROJECT LAYOUT PLAN
APPENDIX B	PROJECT ORGANIZATION CHART & CONTACT DETAILS OF KEY PERSONNEL
APPENDIX C	3-MONTH ROLLING CONSTRUCTION PROGRAM
APPENDIX D	MONITORING LOCATION (AIR QUALITY, NOISE AND WATER QUALITY)
APPENDIX E	GRAPHICAL PLOTS OF MONITORING RESULTS
APPENDIX F	METEOROLOGICAL INFORMATION
APPENDIX G	WASTE FLOW TABLE
APPENDIX H	COMPLAINT SUMMARY
APPENDIX I	IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)

## 1. INTRODUCTION

### 1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (hereafter referred as “CEDD”) is the Project Proponent and the Permit Holder of the Project Cross Bay Link, Tseung Kwan O (hereinafter referred as “the Project”) which is a Designated Project to be implemented under Environmental Permit number EP-459/2013 (hereinafter referred as “the EP-459/2013” or “the EP”).

1.1.2 AUES was awarded the CEDD Contract Agreement No. EDO/04/2018 - Environmental Team for Cross Bay Link, Tseung Kwan O (hereinafter called “the Service Contract”). The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the Approved EM&A Manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Agreement No. CE 43/2008 (HY) Cross Bay Link, Tseung Kwan O - Investigation and other relevant statutory requirements.

1.1.3 As part of the EM&A programme, baseline monitoring shall be undertaken before the Project construction work commencement to determine the ambient environmental condition. The baseline air quality, background noise and water quality monitoring has been carried out between **21<sup>st</sup> September 2018** and **13<sup>th</sup> November 2018** at the designated and interim locations. The baseline monitoring report under the EP-459/2013 has been compiled by the ET and verified by Independent Environmental Checker (hereinafter the “IEC”) prior submitted to EPD on **19<sup>th</sup> November 2018** for endorsement.

1.1.4 This is the **11<sup>th</sup>** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1<sup>st</sup> June 2021** to **31<sup>st</sup> August 2021** (hereinafter ‘the Reporting Period’).

### 1.2 REPORT STRUCTURE

1.2.1 The Environmental Monitoring and Audit (EM&A) Monthly Report is structured into the following sections:-

<b>Section 1</b>	<i>Introduction</i>
<b>Section 2</b>	<i>Project Organization and Construction Progress</i>
<b>Section 3</b>	<i>Summary of Impact Monitoring Requirements</i>
<b>Section 4</b>	<i>Impact Monitoring Results</i>
<b>Section 5</b>	<i>Waste Management</i>
<b>Section 6</b>	<i>Site Inspections</i>
<b>Section 7</b>	<i>Landfill Gas Monitoring</i>
<b>Section 8</b>	<i>Environmental Complaints and Non-Compliance</i>
<b>Section 9</b>	<i>Implementation Status of Mitigation Measures</i>
<b>Section 10</b>	<i>Conclusions and Recommendations</i>

## 2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION

### 2.1 PROJECT ORGANIZATION

2.1.1 The project organization is shown in *Appendix B*. The responsibilities of respective parties can be referred to Monthly Report.

### 2.2 CONSTRUCTION PROGRESS

2.2.1 3-month rolling construction program of each Works Contract is enclosed in *Appendix C*; and the major construction activities undertaken in the Reporting Period is presented in below sub-sections.

#### Contract 1 (Contract No. NE/2017/07)

2.2.2 The major construction activities of Contract 1 undertaken in this Reporting Period are:-

- Predrilling, Piling Work at Portion I
- Precast Pier and box girder installation at Portion II
- Stage Concrete for pile caps at portion II
- ABWF works, E&M Work and External Work at Portion V Plant Room Building
- Load-out and Transportation of Steel Main Bridge
- Load-out and Transportation of Floating-in of Steel Bridge Side Span
- E&M Work and External Work at Portion V Plant Room Building

#### Contract 2 (Contract No. NE/2017/08)

2.2.3 The major construction activities of Contract 2 undertaken in this Reporting Period are:-

- Excavation (Portion III,VI)
- Drainage Installation (Portion VI)
- Footing construction(Portion VI)
- Excavation & RC works (Superstructure) (Portion III)
- RC construction for U-trough(Portion III)
- Seawall modification
- ELS & manhole construction at SMH012 &SMH011,lift shaft
- Noise barrier installation(Portion VI)
- Backfilling (Portion VI)

### 2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 All the documents required under Environmental Permit No. EP-459/2013 were submitted within the required timeframe. The details can be referred to the Monthly Report.

2.3.2 Upon completed baseline monitoring, a Baseline Monitoring Report was verified by IEC on 19 November 2018 and submitted to EPD on that day for endorsement.

2.3.3 The notification of Project dedicated web site to EPD was made on 9 January 2019 (<http://www.envcbltko.hk/>).

### 3. SUMMARY OF ENVIRONMENTAL MONITORING PROGRAMMES AND REQUIREMENTS

#### 3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit Programmes and requirements are set out in the Approved EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project. A summary of EM&A programmes and requirements are presented in the sub-sections below.

#### 3.2 MONITORING PARAMETERS

3.2.1 Monitoring parameters of air quality, noise and water quality are summarized in *Table 3-1*.

**Table 3-1 Summary of EM&A Requirements**

Environmental Issue	Parameters
Air Quality	<ul style="list-style-type: none"> <li>1-hour TSP by Real-Time Portable Dust Meter; and</li> <li>24-hour TSP by High Volume Air Sampler</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Leq (30min) in six consecutive Leq(5 min) between 07:00-19:00 on normal weekdays</li> <li>Supplementary information for data auditing, statistical results such as L<sub>10</sub> and L<sub>90</sub> shall also be obtained for reference.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>In-situ measurement – Dissolved Oxygen (DO) concentration (mg/L) &amp; saturation (%), pH, Salinity (mg/L), Temperature (°C) and Turbidity (NTU); and</li> <li>Laboratory analysis – SS (mg/L)</li> </ul>

#### 3.3 MONITORING LOCATIONS

##### *Air Quality and Construction Noise*

3.3.1 According to the Approved EM&A Manual Section 5.4 and Section 6.3, three (3) representative air sensitive receivers (ASR) and four (4) representative noise sensitive receivers were designated as monitoring stations. The designated air quality and noise monitoring locations are listed in *Table 3-2* and *Table 3-3*, and illustrated in *Appendix D*.

**Table 3-2 Designated Air Quality Monitoring Location recommended in EM&A Manual**

ID	Location in the EM&A Manual	Currently Situation
AM1	Tung Wah Group of Hospitals Aided Primary School & Secondary School	Not yet construct
AM2	Lohas Park Stage 2 (Planned Development in Area 86)	Available for resident occupation in February 2021
AM3	Lohas Park Stage 3 (Planned Development in Area 86)	Under Construction

**Table 3-3 Designated Construction Noise Monitoring Location recommended by EM&A Manual**

ID	Location	Currently Situation
CNMS-1	Lohas Park Stage 1(Planned Development in Area 86, Package 5) (Southeast facade)	Available for resident occupation in November 2019
CNMS-2	Lohas Park Stage 1 (Planned Development in Area 86, Package 6) (Southeast facade)	Available for resident occupation in February 2021
CNMS-3	Lohas Park Stage 3 (Planned Development in Area 86,Package 11) (West facade)	Under Construction
CNMS-4	Tung Wah Group of Hospitals Aided Primary School & Secondary School (Southwest facade)	Not yet construct

3.3.2 As observed and confirmed by ET and IEC during the joint site visit on 29<sup>th</sup> August 2018, the designated air quality and noise monitoring locations are under construction or yet to construct. It is considered that these designated locations are not appropriate to perform air quality and noise

monitoring. In this regard, alternative locations were proposed as interim arrangement to carry out air quality and noise monitoring before occupation of the designated monitoring location. A letter enclosed with the alternative location proposal and IEC verification (Our Ref: TCS00975/18/300/L0038) was sent to EPD on 19<sup>th</sup> October 2018 and the proposal was agreed by EPD. Therefore, air quality and construction noise impact monitoring would be performed at the agreed alternative locations until the designated sensitive receivers occupied and granted the premises.

3.3.3 The designated and interim alternative monitoring location for impact air quality and noise monitoring in the Reporting Period are summarized in Table 3-4 and illustrated in *Appendix D*.

**Table 3-4 Designated and interim alternative location for air quality and noise monitoring in the Reporting Period**

Location ID	Monitoring Parameter	Location
AM2	1-Hour TSP Air Quality	Lohas Park Phase 6
AM4	1-Hour TSP Air Quality	Podium of Lohas Park Phase 2A (Le Prestige)
AM5	24-Hour TSP Air Quality	Boundary of Site Office near Junction of Wan Po Road and Wan O Road
CNMS-1	Noise (L <sub>eq</sub> , L <sub>10</sub> & L <sub>90</sub> )	Podium of Lohas Park Package 4
CNMS-2	Noise (L <sub>eq</sub> , L <sub>10</sub> & L <sub>90</sub> )	Lohas Park Package 6
CNMS-5	Noise (L <sub>eq</sub> , L <sub>10</sub> & L <sub>90</sub> )	Podium of Lohas Park Phase 2A (Le Prestige)

Remark:

1. Since 24-Hour TSP Air Quality monitoring is not granted at AM4 Lohas Park Phase 2A, the 24-Hour TSP monitoring was therefore proposed at AM5 which is located at the boundary of the project site office.
2. 24-Hour TSP Air Quality Monitoring at AM2 will be commenced once approval of High Volume Sampler installation was obtained from Lohas Park 6.

Water Quality

3.3.4 According to Table 7.1 of the approved EM&A Manual Section 7.4, two Control Stations (C3 & C4), six (6) sensitive receivers (CC1, CC2, CC3, CC4, CC13 & SWI1) and one (1) Gradient station (II) are recommended to perform water quality monitoring. Details and coordinate of these water quality monitoring stations are described in *Table 3-5* and the locations is shown in *Appendix D*.

**Table 3-5 Location of Water Quality Monitoring Station**

Station	Coordinates		Description
	Easting	Northing	
CC1	843201	816416	<b>Sensitive Receiver</b> – Coral Sites at Chiu Keng Wan
CC2	844076	817091	<b>Sensitive Receiver</b> – Coral Sites at Junk Bay
CC3	844606	817941	<b>Sensitive Receiver</b> – Coral Sites at Junk Island
CC4	845444	815595	<b>Sensitive Receiver</b> – Coral Sites at Fat Tong Chau West
CC13	844200	817495	<b>Sensitive Receiver</b> – Coral Sites at Junk Bay near Chiu Keng Wan
SWI1	845512	817442	<b>Sensitive Receiver</b> – Tseung Kwan O Salt Water Intake
C3	843821	816211	<b>Control Station</b> (Ebb Tide) – within Junk Bay
C4	844621	815770	<b>Control Station</b> (Flood Tide) – within Junk Bay
II	844602	817675	<b>Gradient Station</b> – in between Lam Tin Tunnel (LTT) and CBL

**3.4 MONITORING FREQUENCY AND PERIOD**

3.4.1 To according with the approved *EM&A Manual*, impact monitoring requirements are presented as follows.

Air Quality Monitoring

3.4.2 Air quality impact monitoring frequency is as follows:

- Once every 6 days of 24-hour TSP and 3 times of 1-hour TSP monitoring; during course of works throughout the construction period

Construction Noise Monitoring

3.4.3 Construction noise monitoring frequency is as follows:

- One set of  $Leq_{(30min)}$  measurements in a weekly basis between 07:00 and 19:00 hours on normal weekdays during course of works as throughout the construction period
- If construction works are extended to include works during the hours of 1900-0700, additional weekly impact monitoring shall be carried out during evening and night-time works. Applicable permits under the NCO shall be obtained by the Contractor.

Water Quality (Marine Water) Monitoring

3.4.4 Marine water impact monitoring frequency is as follows:

- Three days a week, at mid ebb and mid flood tides during course of pile excavation works for the bridge pier foundations underway. Moreover, the intervals between 2 consecutive sets of monitoring day shall not be less than 36 hours.

**3.5 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS**

3.5.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. A summary of the Action/Limit (A/L) Levels for air quality, construction noise and water quality are shown in **Tables 3-6, 3-7 and 3-8** respectively.

**Table 3-6 Action & Limit Levels of Air Quality (1-Hour & 24-Hr TSP)**

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )		Limit Level ( $\mu\text{g}/\text{m}^3$ )	
	1-Hour TSP	24-Hr TSP	1-Hour TSP	24-Hr TSP
AM2	278	NA	500	NA
AM4	278	NA	500	NA
AM5	NA	190	NA	260

*Note: 1-Hour & 24-Hr TSP of Action Level = (Average Baseline Results  $\times$  1.3 + Limit level)/2*

**Table 3-7 Action and Limit Levels for Construction Noise, dB(A)**

Monitoring Location	Action Level	Limit Level (Leq30min)
	<b>Time Period: 0700-1900 hours on normal weekdays</b>	
CNMS-1 CNMS-2 CNMS-5	When one or more documented complaints are received	75 dB(A)
	<b>Time Period: 1900-2300 hours on all days (Leq15min)</b>	
	When one or more documented complaints are received	55 dB(A)

*Remarks:*

1. Construction noise monitoring will be resumed at the designated locations CNMS-3 and CNMS4 once they are available and permission are granted;
2. The designated locations CNMS-3 is located at residential building which is still under construction, Limit Level of 75dB(A) will be adopted until they are occupied;
3. The designated location CNMS-4 is located at planned school and still not yet to construction. When the school occupied and operated, Limit Level of 70dB(A) should be adopted and should be reduced to 65dB(A) during examination period; and
4. If construction works are required during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority shall be followed.

**Table 3-8 Action and Limit Levels for Water Quality**

Monitoring Station	Depth Average of SS (mg/L)			
	Action Level		Limit Level	
CC1	7.8	OR 120% of upstream control station at the same	9.3	OR 130% of upstream control station at the same
CC2	9.0		9.2	

Monitoring Station	Depth Average of SS (mg/L)			
	Action Level		Limit Level	
CC3	8.2	tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher	9.0	tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher
CC4	13.8		15.4	
CC13	8.9		10.3	
SWI1	8 mg/L		10 mg/L	
Monitoring Location	Dissolved Oxygen (mg/L)			
	Depth Average of Surface and Mid-depth		Bottom	
	Action Level	Limit Level	Action Level	Limit Level
CC1	5.8	5.7	5.3	5.2
CC2	5.8	5.7	5.3	5.1
CC3	5.5	5.4	4.9	4.7
CC4	5.7	5.7	5.5	5.4
CC13	5.6	5.5	5.3	5.2
SWI1	5.4	4.8	5.1	5.0
Monitoring Location	Depth Average of Turbidity (NTU)			
	Action Level		Limit Level	
CC1	5.8	<b>OR</b> 120% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher	6.0	<b>OR</b> 130% of upstream control station at the same tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher
CC2	4.6		5.5	
CC3	4.8		5.4	
CC4	6.1		7.1	
CC13	6.0		6.3	
SWI1	6.1		7.1	

3.5.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan as stated EM&A Manual.

#### 4. IMPACT MONITORING RESULT

##### 4.1 RESULTS OF AIR QUALITY MONITORING IN THE REPORTING MONTH

4.1.1 As notified that Lohas Park Package 6 was available for resident occupation in late January 2021, air quality monitoring at designated monitoring location AM2 was therefore commenced in February 2021. Since the installation of High Volume Sampler for 24-Hour TSP monitoring is still under review by Property Management Team of Lohas Park Package 6, an interim alternative monitoring location AM2a was proposed for the 24-Hour TSP monitoring and was commenced on 13 July 2021 upon agreed by ER and IEC.

4.1.2 In the Reporting Period, 1-Hour TSP monitoring was performed at designated monitoring location AM2 and interim alternative monitoring locations AM4, and 24-Hr TSP of air quality monitoring was performed at interim alternative monitoring locations AM2a and AM5.

4.1.3 During the Reporting Period, **96** sessions of 1-hour TSP and **25** sessions of 24-hours TSP monitoring were carried out and the monitoring results are summarized in **Table 4-1**. The relevant graphical plots are shown in **Appendix E**.

**Table 4-1 Summary of Air Quality Impact Monitoring Results**

Monitoring Location	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )			24-hour TSP ( $\mu\text{g}/\text{m}^3$ )		
	Min	Max	Average	Min	Max	Average
AM2	47	89	75	/		
Record Date	24-Aug-21	4-Jun-21 28-Jun-21	48 events			
AM2a	/			17	103	42
Record Date				28-Aug-21	13-Jul-21	9 events
AM4	42	86	72	/		
Record Date	24-Aug-21	4-Jun-21	48 events			
AM5	/			24	107	50
Record Date				19-Jul-21	28-Aug-21	16 events

4.1.4 As shown in **Table 4-1**, all the 1-hour TSP and 24-hour TSP monitoring results were below the Action / Limit Levels. No Notification of Exceedance (NOE) was issued in this Reporting Period.

4.1.5 No adverse impact due to weather condition on the monitoring result was observed in reporting quarter. The summary of meteorological information for the Reporting Period is shown in **Appendix F**.

##### 4.2 RESULTS OF CONSTRUCTION NOISE MONITORING

4.2.1 **14** sessions of daytime construction noise monitoring were performed at the designated location CNMS-1, CNMS-2 and interim alternative monitoring location CNMS-5 respectively in the reporting period. The daytime noise monitoring results at designated location CNMS-1 and CNMS-2, and interim alternative monitoring location CNMS-5 are summarized in **Table 4-2**. The relevant graphical plots are shown in **Appendix E**.

**Table 4-2 Summary of Daytime Construction Noise Impact Monitoring Results**

Monitoring Location	Leq, 30min (dB(A))		
	Min	Max	Average
CNMS-1	64.3	72.2	67.7
Record Date	20-Jul-21	10-Jun-21	14 sessions
CNMS-2	64.4	72.0	67.6
Record Date	24-Aug-21	16-Jun-21	14 sessions
CNMS-5	64.2	69.3	66.9

Monitoring Location	Leq, 30min (dB((A))		
	Min	Max	Average
Record Date	24-Aug-21	30-Aug-21	14 sessions

4.2.2 All the measured daytime construction noise results were below 75dB(A) of the limit level acceptance criteria.

4.2.3 2 sessions of evening construction noise monitoring were performed at the designated location CNMS-1, CNMS-2 and interim alternative monitoring location CNMS-5 respectively in the reporting period. The daytime noise monitoring results at designated location CNMS-1 and CNMS-2, and interim alternative monitoring location CNMS-5 are summarized in **Table 4-3**.

**Table 4-3 Summary of Evening Construction Noise Impact Monitoring Results**

Monitoring Location	Leq, 30min (dB((A))		
	Min	Max	Average
CNMS-1	54.8	56.3	55.6
Record Date	29-Jun-21	18-Jun-21	2 sessions
CNMS-2	51.6	52.0	51.8
Record Date	18-Jun-21	29-Jun-21	2 sessions
CNMS-5	59.5	60.6	66.9
Record Date	18-Jun-21	29-Jun-21	2 sessions

4.2.4 Four (4) sessions of evening noise monitoring results triggered the Limit Level (55 dB(A)) in the reporting period and investigations were undertaken by ET accordingly and indicated that the exceedance recorded were not Project related.

4.2.5 3 sessions of nighttime construction noise monitoring were performed at the designated location CNMS-1, CNMS-2 and interim alternative monitoring location CNMS-5 respectively in the reporting period. The daytime noise monitoring results at designated location CNMS-1 and CNMS-2, and interim alternative monitoring location CNMS-5 are summarized in **Table 4-4**.

**Table 4-4 Summary of Nighttime Construction Noise Impact Monitoring Results**

Monitoring Location	Leq, 30min (dB((A))		
	Min	Max	Average
CNMS-1	53.5	55.8	54.5
Record Date	18-Jun-21	14-Aug-21	3 sessions
CNMS-2	50.1	52.6	51.3
Record Date	18-Jun-21	14-Aug-21	3 sessions
CNMS-5	55.6	57.0	56.3
Record Date	18-Jun-21	14-Aug-21	3 sessions

4.2.6 Nine (9) sessions of Nighttime noise monitoring results triggered the Limit Level (40 dB(A)) in the reporting period and investigations were undertaken by ET accordingly and indicated that the exceedance recorded were not Project related.

### 4.3 RESULTS OF WATER QUALITY MONITORING

4.3.1 According to the approved EM&A Manual Section 7.6.1, the impact marine water quality monitoring work shall be carried out during the CBL piling and pile excavation works (marine construction activity) of the Project. Impact marine water quality monitoring was commenced in December 2018 when CBL piling and pile excavation works started.

4.3.2 As confirmed, all the marine piling and piling excavation work were completed in January 2020 and all pile cap installation work was completed in mid-March 2020. Due to the marine construction works that requires marine water quality monitoring as stated in the EM&A Manual were completed, the impact water quality monitoring was ceased with effect from 1 May 2020 and IEC has no particular comment on this arrangement.

4.3.3 No impact water quality monitoring was therefore carried out in the reporting period.

## 5. WASTE MANAGEMENT

### 5.1 GENERAL WASTE MANAGEMENT

5.1.1 Waste management would be carried out by an on-site Environmental Officer or an Environmental Consultant from time to time.

### 5.2 RECORDS OF WASTE QUANTITIES

5.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste; and
- General Refuse

5.2.2 According to the information provided by Contractor of Contract 1 and Contract 2, waste disposal was made in the Reporting period are summarized in *Tables 5-1* and *5-2*.

**Table 5-1 Summary of Quantities of Inert C&D Materials**

Type of Waste	Contract No	Quantity			Disposal Location
		Jun 2021	July 2021	August 2021	
Total Generated C&D Materials (Inert) (in '000m <sup>3</sup> )	1	1.170	0.060	0.018	-
	2	0.287	0.147	0.284	
Reused in this Project (Inert) (in '000m <sup>3</sup> )	1	0	0	0	-
	2	0	0	0	-
Reused in other Projects (Inert) (in '000m <sup>3</sup> )	1	0	0	0	-
	2	0	0	0	-
Disposal as Public Fill (Inert) (in '000m <sup>3</sup> )	1	1.170	0.060	0.018	TKO 137
	2	0.287	0.147	0.284	
Imported Fill ('000m <sup>3</sup> )	1	0	0	0	-
	2	0	0	0	-

**Table 5-2 Summary of Quantities of C&D Wastes**

Type of Waste	Contract No	Quantity			Disposal Location
		Jun 2021	July 2021	August 2021	
Recycled Metal ('000kg)	1	0	0	0	Licensed collector
	2	0.002	0.002	0.005	
Recycled Paper / Cardboard Packing ('000kg)	1	0.210	0.155	0.170	Licensed collector
	2	0.150	0.150	0.100	
Recycled Plastic ('000kg)	1	0	0	0	Licensed collector
	2	0.030	0.030	0.005	
Chemical Wastes ('000kg)	1	0	0	0	Licensed collector
	2	0	0	0	
General Refuses ('000m <sup>3</sup> )	1	0.437	0.204	0.157	NENT
	2	0.009	0.019	0.035	

5.2.3 The Monthly Summary Waste Flow Table of the Contracts 1 and Contract 2 are shown in [Appendix G](#).

## 6. SITE INSPECTION

### 6.1 REQUIREMENTS

6.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

### 6.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

#### Contract 1

6.2.1 In this Reporting Period, **13** events of weekly joint site inspection was carried out for Contract 1 to evaluate site environmental performance. The summaries of the findings during site inspection are presented in **Table 6-1** and the details of site inspection can be found in relevant EM&A monthly report.

**Table 6-1 Summary of Site Observations of the Contract 1**

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
June 2021	2, 8,16, 23 & 30 June 2021	4	Completed
July 2021	7, 14, 20, & 28 July 2021	4	Completed
August 2021	4, 9, 17, & 25 August 2021	6	Completed

6.2.2 In the Reporting Period, no non-compliance was recorded for Contract 1; however, **14** observations were recorded during the site inspections and the major findings were related to water quality and chemical management mitigation measures. Details of the findings of the inspection in the reporting period can be referred to the Monthly EM&A Report. The findings found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

#### Contract 2

6.2.3 In this Reporting Period, **13** events of weekly joint site inspection was carried out for Contract 2 to evaluate site environmental performance. The summaries of the findings during site inspection are presented in **Table 6-2** and the details of site inspection can be found in relevant EM&A monthly report.

**Table 6-2 Summary of Site Observations of the Contract 2**

Reporting Period	Date of site inspection	Nos. of Findings/ Deficiencies	Follow-Up Status
June 2021	2, 9,16, 23 & 30 June 2021	4	Completed
July 2021	7, 14, 20, & 28 July 2021	4	Completed
August 2021	4, 9, 17, & 25 August 2021	4	Completed

6.2.4 In the Reporting Period, no non-compliance was recorded for Contract 2; however, **12** observations were recorded during the site inspections and the major findings were related to general housekeeping and chemical management mitigation measures. Details of the findings of the inspection in the reporting period can be referred to the Monthly EM&A Report. The findings found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

## 7. LANDFILL GAS MONITORING

### 7.1 GENERAL REQUIREMENT

- 7.1.1 Pursuant to Section 13 of the Project’s EM&A Manual, Landfill gas monitoring shall perform during construction activities within the 250m Consultation Zone of Tseung Kwan O Stage II & III Landfill. For landfill gas monitoring requirements, pre entry and routine measurement shall be undertaken in accordance with the *Factories and Industrial Undertaking (Confined Spaces) Regulation*.
- 7.1.2 According to Environmental Mitigation Implementation Schedule (EMIS) S14.7.6, portable monitoring equipment can be used to conduct landfill gas monitoring. Moreover, the frequency and areas to be monitored should be set down prior to commencement of the works either by the Safety Officer or by an appropriately qualified person.

### 7.2 LIMIT LEVELS AND EVENT AND ACTION PLAN

- 7.2.1 In event of the trigger levels specified in Table 14.6 of the EIA report being exceeded, a person, such as the Safety Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG. In an emergency situation the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The Limit levels and relevant Action Plans for landfill gas detected in utilities and any on-site areas following construction is listed in *Table 7-1*.

**Table 7-1 Actions in the Event of Landfill Gas Being Detected in Excavations**

Parameter	Limit Level	Actions
Methane	>10% LEL (i.e. >0.5% by volume)	<ul style="list-style-type: none"> <li>• Post “No Smoking” signs</li> <li>• Prohibit hot works</li> <li>• Ventilate to restore methane to &lt;10% LEL</li> </ul>
	>20% LEL (i.e. >1% by volume)	<ul style="list-style-type: none"> <li>• Stop excavation works</li> <li>• Evacuate personnel/prohibit entry</li> <li>• Increase ventilation to restore methane to &lt;10% LEL</li> </ul>
Carbon dioxide	>0.5%	<ul style="list-style-type: none"> <li>• Ventilate to restore carbon dioxide to &lt;0.5%</li> </ul>
	>1.5%	<ul style="list-style-type: none"> <li>• Stop excavation works</li> <li>• Evacuate personnel/prohibit entry</li> <li>• Increase ventilation to restore carbon dioxide to &lt;0.5%</li> </ul>
Oxygen	<19%	Ventilation to restore oxygen >19%
	<18%	<ul style="list-style-type: none"> <li>• Stop excavation works</li> <li>• Evacuate personnel/prohibit entry</li> <li>• Increase ventilation to restore oxygen to &gt;19%</li> </ul>

- 7.2.2 In the event of the trigger levels specified in Table 9-1 being exceeded, the Safety Officer shall be responsible for dealing with any emergency which may occur due to landfill gas.

### 7.3 LANDFILL GAS MONITORING

- 7.3.1 In the Reporting Period, landfill gas monitoring was conducted at the zone Wan O Road which excavation work of Contract 2 was carried out.
- 7.3.2 There were a total of 78 days monitoring were carried by the Safety Officer or an approved and qualified persons. The results of landfill gas measurement are summarized in *Table 7-2*.

**TABLE 7-2 SUMMARY OF LANDFILL GAS MEASUREMENT RESULTS**

Landfill Gas Parameter	Action Level	Limit Level	Detectable at LMR	
			Min	Max
<b>Methane</b>	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	0.0%	0.0%
<b>Oxygen</b>	<19%	<18%	20.6%	20.8%
<b>Carbon Dioxide</b>	>0.5%	>1.5%	0.0%	0.0%

7.3.3 The measurement results shown that slightly methane concentration was detected, oxygen concentration measured was over 19.0 %. No exceedance was triggered and therefore no corrective action was required accordingly.

## 8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### 8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, ten (10) environmental complaints were received with respect to the noise nuisance arising from the Project. Besides, no summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in *Tables 8-1, 8-2 and 8-3*. A summarized record of all complaints received was provided in *Appendix H*.

**Table 8-1 Statistical Summary of Environmental Complaints**

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 June 2021	1	2	18	Noise/Light
1 – 31 July 2021		5	23	Noise
1 – 31 August 2021		0	23	NA
1 – 30 June 2021	2	2	13	Noise/Water
1 – 31 July 2021		0	13	NA
1 – 31 August 2021		1	14	Water

**Table 8-2 Statistical Summary of Environmental Summons**

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 June 2021	1	0	0	NA
1 – 31 July 2021		0	0	NA
1 – 31 August 2021		0	0	NA
1 – 30 June 2021	2	0	0	NA
1 – 31 July 2021		0	0	NA
1 – 31 August 2021		0	0	NA

**Table 8-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 30 June 2021	1	0	0	NA
1 – 31 July 2021		0	0	NA
1 – 31 August 2021		0	0	NA
1 – 30 June 2021	2	0	0	NA
1 – 31 July 2021		0	0	NA
1 – 31 August 2021		0	0	NA

## 9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

### 9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in [Appendix I](#).

9.1.2 The Contractors had been implementing the required environmental mitigation measures according to the Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by the Contractors in this Reporting Month are summarized in [Table 9-1](#).

**Table 9-1 Environmental Mitigation Measures in the Reporting Period**

Issues	Environmental Mitigation Measures
Construction Noise	<ul style="list-style-type: none"> <li>• Regularly to maintain all plants, so only the good condition plants were used on-site ;</li> <li>• If possible, all mobile plants onsite operation has located far from NSRs;</li> <li>• When machines and plants (such as trucks) were not in using, it was switched off;</li> <li>• Wherever possible, plant was prevented oriented directly the nearby NSRs;</li> <li>• Provided quiet powered mechanical equipment to use onsite;</li> <li>• Weekly noise monitoring was conducted to ensure construction noise meet the criteria.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet;</li> <li>• The construction plants regularly maintained to avoid the emissions of black smoke;</li> <li>• The construction plants switched off when it not in use;</li> <li>• Water spraying on haul road and dry site area was provided regularly;</li> <li>• Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting; and</li> <li>• Before any vehicle leaving the works site, wheel watering has been performed.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>• Debris and refuse generated on-site collected daily;</li> <li>• Oils and fuels were stored in designated areas;</li> <li>• The chemical waste storage as sealed area provided;</li> <li>• Site hoarding with sealed foot were provided surrounding the boundary of working site to prevent wastewater or site surface water runoff get into public areas; and</li> <li>• Portable chemical toilets were provided on-site. A licensed contractor was regularly disposal and maintenance of these facilities.</li> <li>• Silt curtain was installed and maintained in accordance with EP condition</li> </ul>
Waste and Chemical Management	<ul style="list-style-type: none"> <li>• Excavated material reused on site as far as possible to minimize off-site disposal.</li> <li>• Scrap metals or abandoned equipment should be recycled if possible;</li> <li>• Waste arising kept to a minimum and be handled, transported and disposed of in a suitable manner;</li> <li>• Disposal of C&amp;D wastes to any designated public filling facility and/or landfill followed a trip ticket system; and</li> <li>• Chemical waste handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> </ul>
General	<ul style="list-style-type: none"> <li>• The site is generally kept tidy and clean.</li> <li>• Mosquito control is performed to prevent mosquito breeding on site.</li> </ul>

## 10. CONCLUSIONS AND RECOMMENDATIONS

### 10.1 CONCLUSIONS

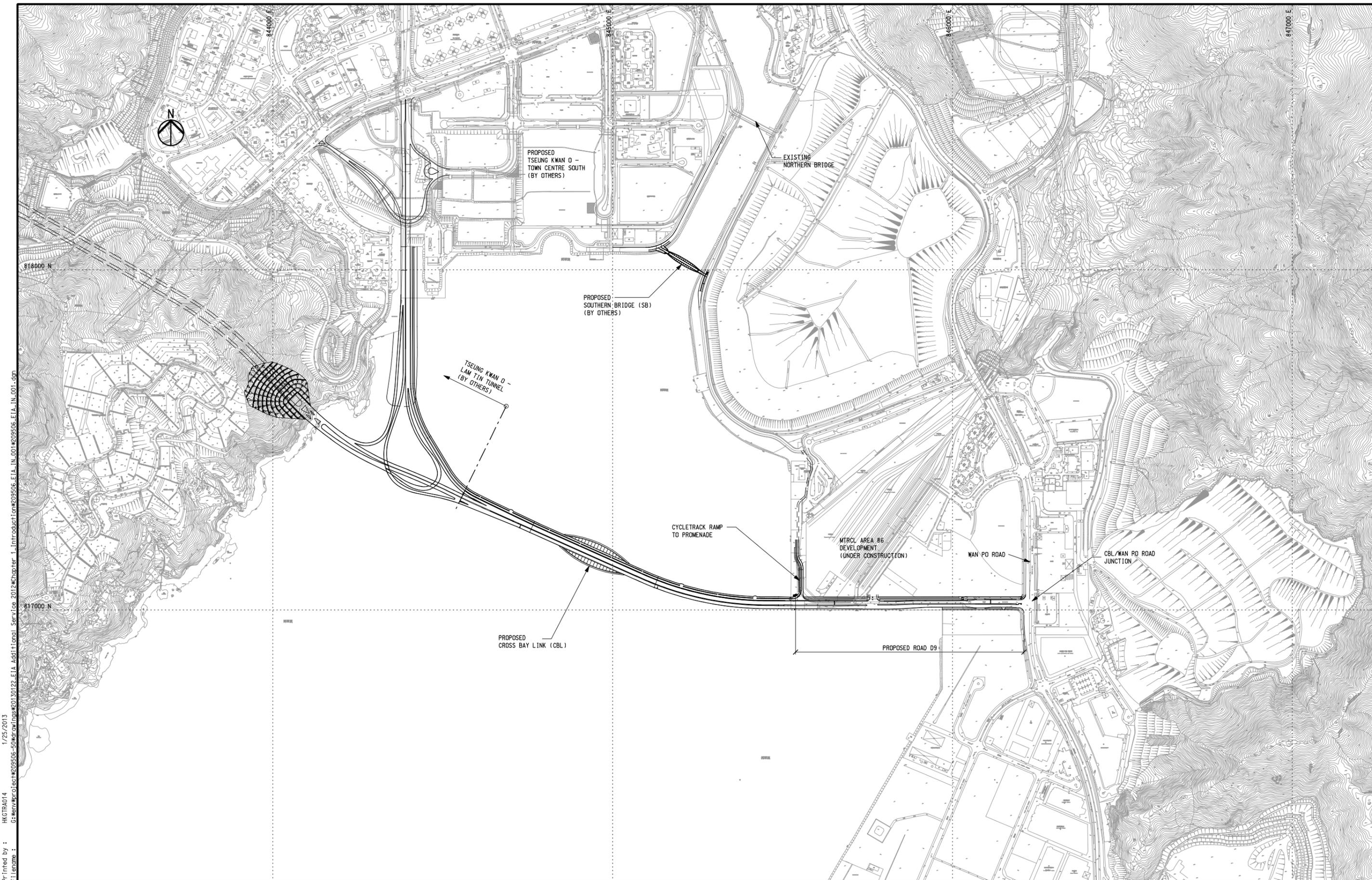
- 10.1.1 This is the **11<sup>th</sup>** Quarterly EM&A report as presented the monitoring results and inspection findings for the reporting period from **1<sup>st</sup> June 2021** to **31<sup>st</sup> August 2021**.
- 10.1.2 In the Reporting Period, seven (7) construction noise action level exceedance was recorded, and four (4) session of evening construction noise and nine (9) session of night time monitoring results triggered the Limit Level. Investigations were undertaken by ET. The evening and night time construction noise limit level exceedances triggered are unlikely caused by the Project. Six (6) daytime construction noise action level exceedances triggered was Project related.
- 10.1.3 In this Reporting Period, no 1-Hour TSP or 24-Hr TSP air quality monitoring exceedance was recorded. No NOE or the associated corrective actions were therefore issued.
- 10.1.4 No water quality monitoring was carried out in the reporting period.
- 10.1.5 In the Reporting Period, ten (10) environmental complaints were received with respect to the noise nuisance, lighting nuisance and water quality arising from the Project. Investigation for the complaints were undertaken by ET and it is considered the six noise complaints are related to the Project. One noise compliant and water quality complaint was not Project related. The lighting nuisance complaint is considered related to the Project.
- 10.1.6 No notification of summons or prosecution was received and recorded for the Project.

### 10.2 RECOMMENDATIONS

- 10.2.1 Due to wet season has approached, the Contractor was reminded that all the works being undertaken must fulfill environmental statutory requirements and to paid attention to water quality mitigation measures to prevent surface runoff into nearby water bodies or public areas.
- 10.2.2 Construction noise would be the key environmental issue as Lohas Park Phase 4 & 6 were already available for resident occupation. The noise mitigation measures such as use of quiet plants and installation of temporary noise barrier at the construction noise predominate area should be fully implemented in accordance with the EM&A requirement.

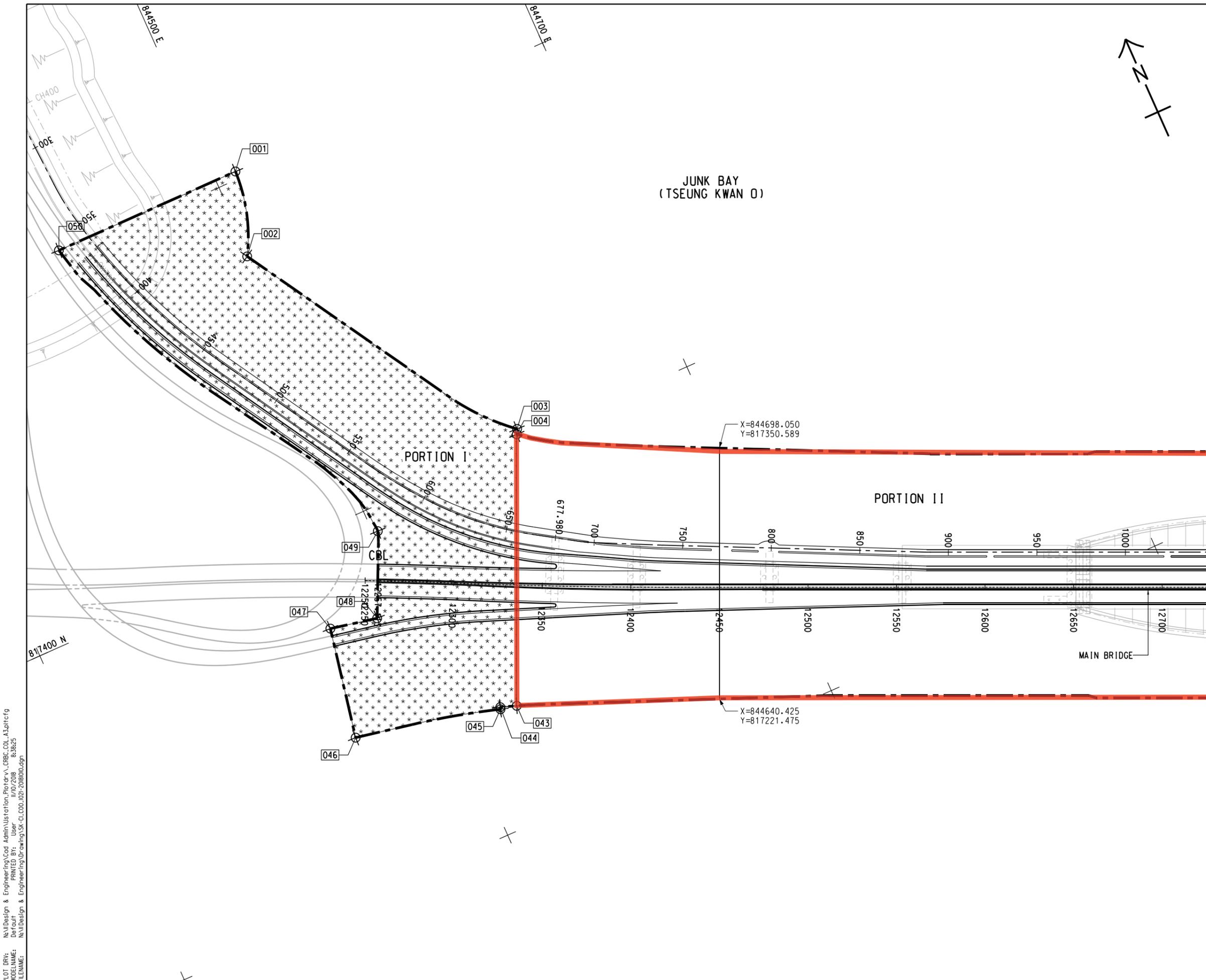
# **Appendix A**

## **Project Layout Plan**



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 1/25/2013

 <b>土木工程拓展署</b> Civil Engineering and Development Department	 <b>ARUP</b> Ove Arup & Partners Hong Kong Limited	Job Title <b>Agreement No. CE 43/2008(HY)</b> <b>Cross Bay Link, Tseung Kwan O – Investigation</b>	Drawing Title <b>GENERAL LAYOUT PLAN</b>	Drawn	GL	Date	01/13	Drawing No. <b>209506/EIA/IN/001</b>
				Checked	JP	Approved	ST	
Rev. Description				Scale	1:5000 on A1 & 1:10000 on A3		Status	FINAL
				Date			Rev.	B



**NOTES:**

1. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE FOR REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/COO/1022 AND 1023.

**LEGEND:**

- SITE BOUNDARY
- PORTION I
- PORTION II
- PORTION III
- PORTION IV
- PORTION V
- PORTION VI
- PORTION VII
- WORKS AREA A
- WORKS AREA B

Works area under Contract 1

A	FIRST ISSUE	HK	KN	AC	19/09/18
Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER: PROJECT MANAGER:  
 土木工程拓展署  
 Civil Engineering and Development Department

SUPERVISOR:

CONTRACTOR:  
 中國路橋工程有限責任公司  
 China Road and Bridge Corp.

CONTRACT NO. AND TITLE:  
 Contract No. NE/2017/07  
 CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS

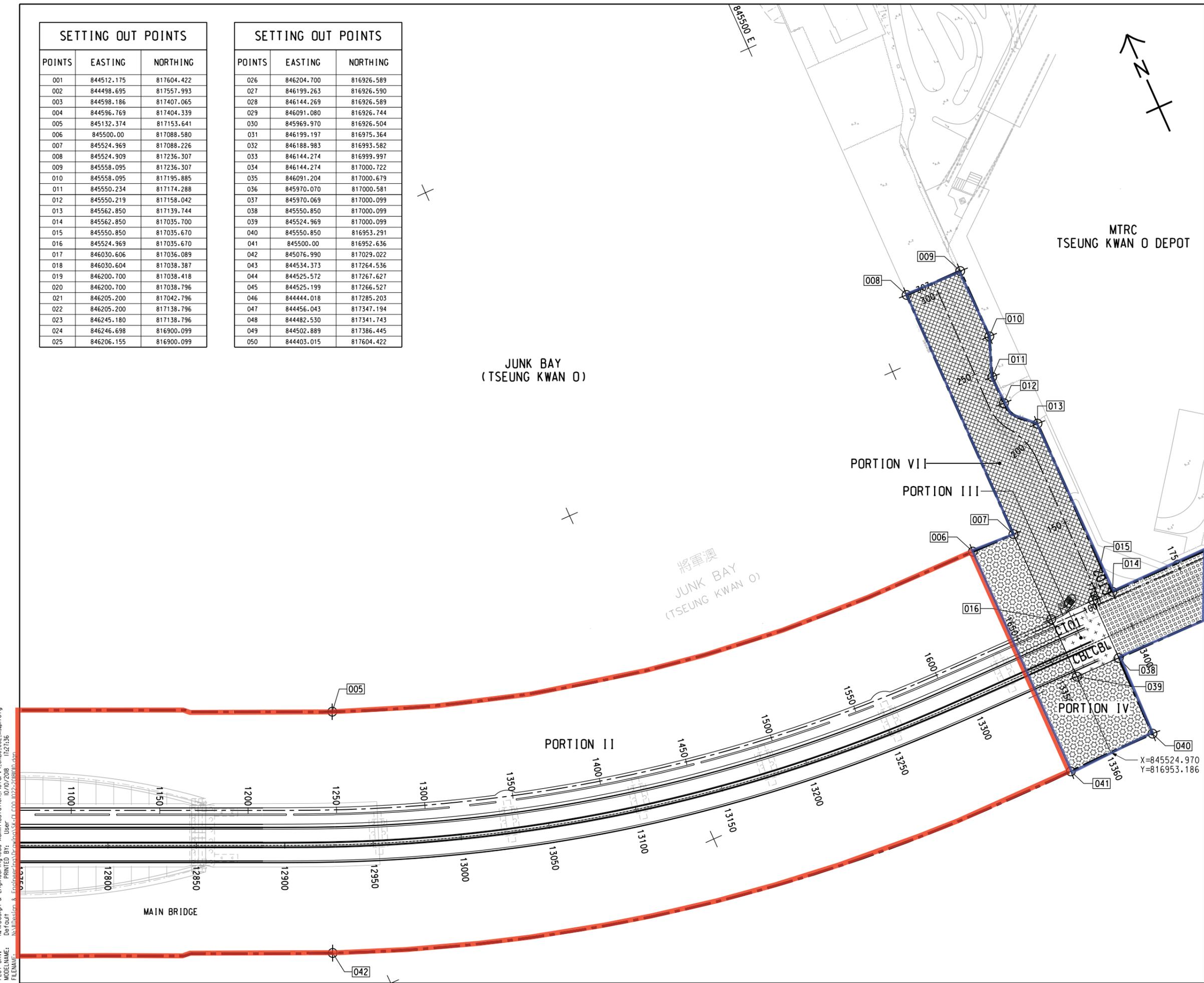
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004	844596.769	817404.339
005	845132.374	817153.641
006	845500.00	817088.580
007	845524.969	817088.226
008	845524.909	817236.307
009	845558.095	817236.307
010	845558.095	817195.885
011	845550.234	817174.288
012	845550.219	817158.042
013	845562.850	817139.744
014	845562.850	817035.700
015	845550.850	817035.670
016	845524.969	817035.670
017	846030.606	817036.089
018	846030.604	817038.387
019	846200.700	817038.418
020	846200.700	817038.796
021	846205.200	817042.796
022	846205.200	817138.796
023	846245.180	817138.796
024	846246.698	816900.099
025	846206.155	816900.099

SETTING OUT POINTS		
POINTS	EASTING	NORTHING
026	846204.700	816926.589
027	846199.263	816926.590
028	846144.269	816926.589
029	846091.080	816926.744
030	845969.970	816926.504
031	846199.197	816975.364
032	846188.983	816993.582
033	846144.274	816999.997
034	846144.274	817000.722
035	846091.204	817000.679
036	845970.070	817000.581
037	845970.069	817000.099
038	845550.850	817000.099
039	845524.969	817000.099
040	845550.850	816953.291
041	845500.00	816952.636
042	845076.990	817029.022
043	844534.373	817264.536
044	844525.572	817267.627
045	844525.199	817266.527
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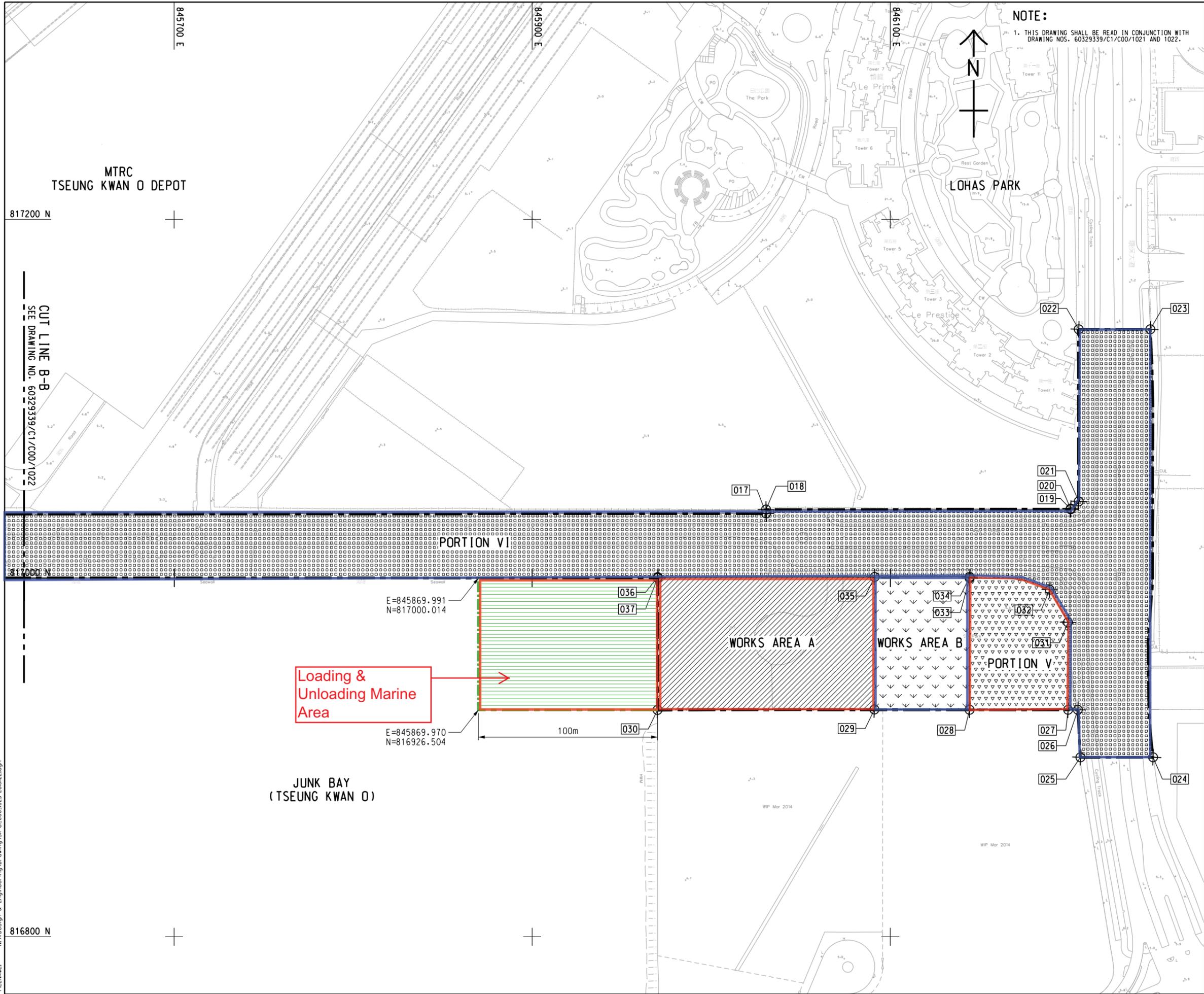


**NOTE:**  
 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/COO/1021 AND 1023.

**LEGEND:**  
 Works area under Contract 1  
 Works area under Contract 2

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Rev	Amendment	By	Chk.	App.	Date
PROJECT MANAGER:		PROJECT MANAGER:			
 <b>土木工程拓展署</b> <b>Civil Engineering and Development Department</b>					
SUPERVISOR:					
CONTRACTOR:		 <b>中國路橋工程有限責任公司</b> <b>China Road and Bridge Corp.</b>			
CONTRACT NO. AND TITLE: <b>Contract No. NE/2017/07</b> <b>CROSS BAY LINK, TSEUNG KWAN O - MAIN BRIDGE AND ASSOCIATED WORKS</b>					
DRAWING TITLE:					
SCALE @ A1		DRAWING NO:			
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NOTE:  
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH  
DRAWING NOS. 60329339/C1/COO/1021 AND 1022.

- LEGEND:
- Works area under Contract 1
  - Works area under Contract 2

MTRC  
TSEUNG KWAN O DEPOT

LOHAS PARK

CUT LINE B-B  
SEE DRAWING NO. 60329339/C1/COO/1022

Loading & Unloading Marine Area

JUNK BAY  
(TSEUNG KWAN O)

Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER: PROJECT MANAGER:  
 土木工程拓展署  
 Civil Engineering and Development Department

SUPERVISOR:

CONTRACTOR:  
 中國路橋工程有限責任公司  
 China Road and Bridge Corp.

CONTRACT NO. AND TITLE:  
 Contract No. NE/2017/07  
 CROSS BAY LINK, TSEUNG KWAN O -  
 MAIN BRIDGE AND ASSOCIATED WORKS

DRAWING TITLE:

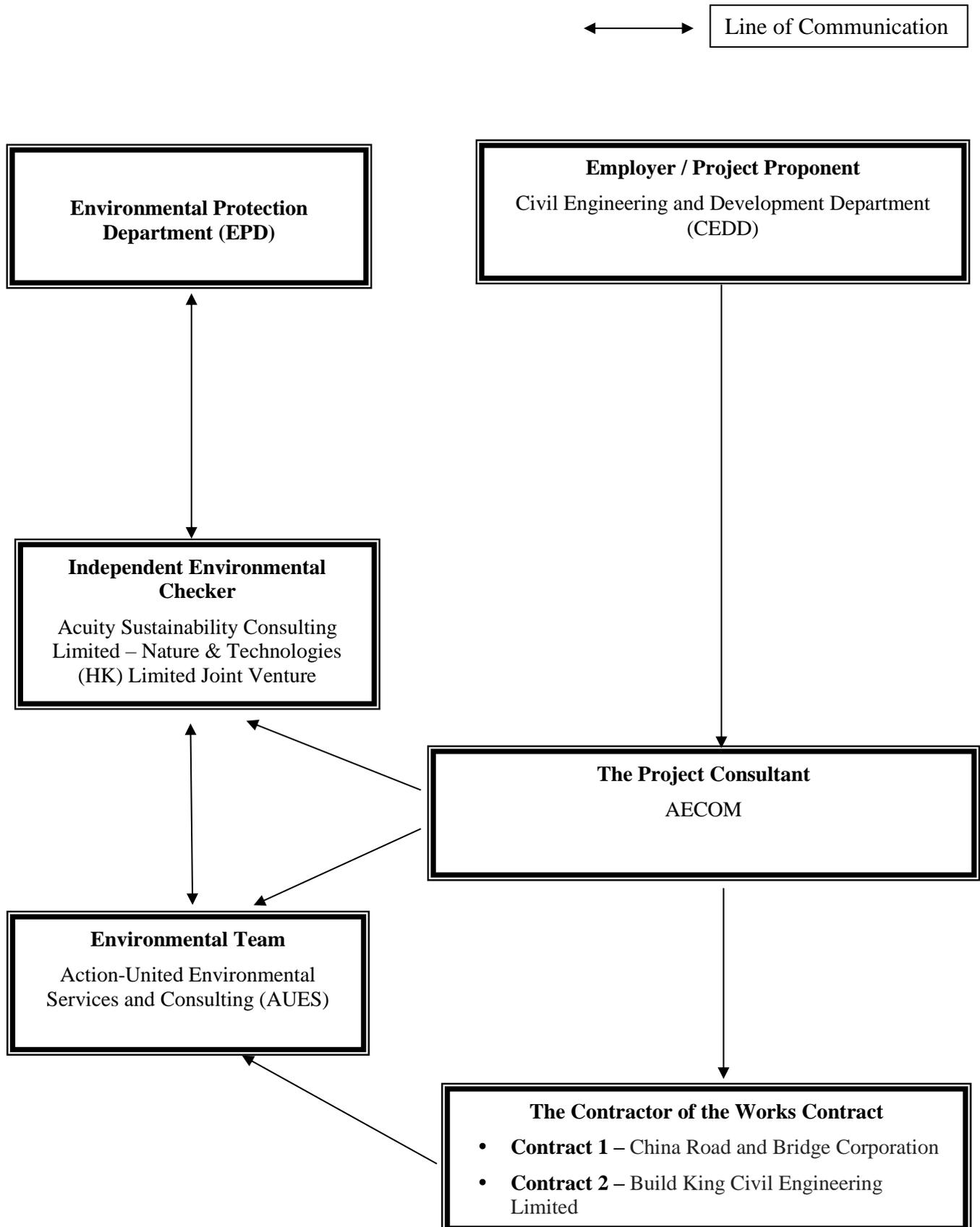
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## **Appendix B**

### **Project Organization Chart & Contact Details of Key Personnel for the Project**

**Project Organization Structure**



**Contact Details of Key Personnel for the Project**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
CEDD	Project Proponent	CK Lam	2301 1398	2714 5174
CEDD	Project Proponent	Sheri Leung	2301 1398	2714 5174
AECOM	Senior Resident Engineer	Jackie Chan	3595 8045	3596 6118
AECOM	Resident Engineer	Kingman Chan	3595 8045	3596 6118
ASC – N&T JV	Independent Environmental Checker	Kevin Li	2698 6833	2698 9383
ASC – N&T JV	Senior Environmental Consultant	Tandy Tse	2698 6833	2698 9383
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Martin Li	2959 6059	2959 6079
CRBC	Site Agent	Raymond Suen	9779 8871	2283 1689
CRBC	Environmental Officer	Calvin So	9724 6254	2283 1689
CRBC	Environmental Supervisor	Lila Lui	9790 5433	2283 1689
Build King	Site Agent	Stephen Leung	9071 7657	TBA
Build King	Environmental Officer	Michael Lam	6476 4299	TBA
Build King	Environmental Supervisor	Kenneth Hung	6170 9304	TBA

**Legend:**

*CEDD (Employer) – Civil Engineering and Development Department*

*AECOM (Project Consultant) – AECOM Asia Co. Ltd.*

*ASC – N&T JV (IEC) – Acuity Sustainability Consulting Limited – Nature & Technologies (HK) Limited Joint Venture*

*AUES (ET) – Action-United Environmental Services & Consulting*

*CRBC (the Main Contractor of the Works Contract 1) – China Road and Bridge Corporation*

*Build King (the Main Contractor of the Works Contract 2) - Build King Civil Engineering Limited*

## **Appendix C**

### **3-Month Rolling Construction Programme**

## **Contract 1**

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	August 2021							September 2021				October 2021				November 2021	
							25	01	08	15	22	29	05	12	19	26	03	10	17	24	31	07	
<b>Cross Bay Link, Tseng Kwan O Main Bridge and Associated Works</b>							25	01	08	15	22	29	05	12	19	26	03	10	17	24	31	07	
<b>Contractual Key Dates and Section of the Works</b>							<ul style="list-style-type: none"> <li>Contractual Key Dates and Section of the Works</li> <li>Contractual Key Dates</li> <li>Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&amp;C of the TCSS</li> </ul>																
<b>Contractual Key Dates</b>							<ul style="list-style-type: none"> <li>Access Date</li> <li>Access To Portion I (For Pile Holes : 5B,9B, 5C,9C)</li> <li>Access to Portion VI</li> </ul>																
KDS1240	Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&C of the TCSS	0	0	08-Aug-21	08-Aug-21	0%																	
<b>Access Date</b>							<ul style="list-style-type: none"> <li>Planned Key Dates and Section of the Works</li> <li>Planned Key Dates</li> <li>Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&amp;C of the TCSS</li> </ul>																
PAD1030	Access To Portion I (For Pile Holes : 5B,9B, 5C,9C)	0	0	29-Jul-21 A		100%																	
PAD1110	Access to Portion VI	0	0	13-Aug-21*		0%																	
<b>Planned Key Dates and Section of the Works</b>							<ul style="list-style-type: none"> <li>Planned Key Dates and Section of the Works</li> <li>Planned Key Dates</li> <li>Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&amp;C of the TCSS</li> </ul>																
<b>Planned Key Dates</b>							<ul style="list-style-type: none"> <li>Preliminaries, Contractor's Design &amp; Method Statement Submission &amp; Approval</li> <li>Contractor's Design Submission and Approval</li> </ul>																
KDS1060	Key Date 2- Completion of all Works in Bridges in Portion II of the Site necessary for installation and T&C of the TCSS	0	0	08-Aug-21	08-Aug-21	0%																	
<b>Preliminaries, Contractor's Design &amp; Method Statement Submission &amp; Approval</b>							<ul style="list-style-type: none"> <li>Design of Functional lighting system, road lighting system, etc (incl. 7 days TRA)</li> <li>Design of cycle rack (incl. 14 days TRA)</li> </ul>																
CDS1140	Design of Functional lighting system, road lighting system, etc (incl. 7 days TRA)	97	13	24-Apr-20 A	20-Aug-21	82%																	
CDS1230	Design of cycle rack (incl. 14 days TRA)	111	85	12-Jun-21 A	31-Oct-21	35%																	
<b>Precasting &amp; Fabrication Works</b>							<ul style="list-style-type: none"> <li>Precast Shell</li> <li>TKOI</li> <li>Precast Segments (TKOI Entrustment Works)</li> </ul>																
<b>Fabrication of Precast Shell and Precast Segments</b>							<ul style="list-style-type: none"> <li>Precast Shell</li> <li>TKOI</li> <li>Fabrication and Pre-stressing of segments for 5HU1-12, 9HU1-12, 5DU1-12 &amp; 9DU1-12 (total 48nos) (incl. 7 days TRA)</li> <li>Fabrication and Pre-stressing of segments for 5EU1-12, 9EU1-12, 1KNU0-15, 1LSU2-15, 1LNU2-15 (total 70nos) (incl. 7 days TRA)</li> <li>Fabrication and Pre-stressing of segments for 1KSU0-15, 5AU4-12, 9AU4-12, 5BU1-13, 9BU1-12 (total 59nos) (incl. 7 days TRA)</li> <li>Fabrication and Pre-stressing of segments for 5CU1-13, 9CU1-12, 5FU1-13, 9FU1-12, 5GU1-13 (total 53nos) (incl. 7 days TRA)</li> <li>Fabrication and Pre-stressing of segments for 9GU1-12, 2JU1-13, 2KU1-13, 2LU1-13 (total 51nos) (incl. 7 days TRA)</li> <li>Fabrication of segment for pier head at 5D, 9D, 5E, 9E, 5F, 9F, 5H, 9H &amp; 1L (total 18nos) (incl. 3 days TRA)</li> <li>Fabrication of segment for pier head at 5A, 9A, 5B, 9B, 5C, 9C, 5G, 9G, 2J, 2K &amp; 2L (total 17nos) (incl. 3 days TRA)</li> </ul>																
P-PS3145	Fabrication of Precast shell for pile cap of TKOI entrustment work (total 17nos)	240	26	09-Dec-20 A	02-Sep-21	94.1%																	
<b>Section 1 of the Works- All Works within Portion I of the Site (Entrusted Works of TKOI Viaduct)</b>							<ul style="list-style-type: none"> <li>Piling Works</li> <li>Bored Pile Machine 2</li> <li>Piling Works for Pier 2L (Bridge S200)</li> <li>Testing</li> <li>Installation of Precast Pile Cap &amp; 1st Pour for Pile Cap</li> <li>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</li> </ul>																
<b>Construction Work (Works Available for Piles 5D, 9D, 5E, 9E, 5F, 9F, 5H, 9H, 1L, 2L)</b>							<ul style="list-style-type: none"> <li>Piling Works</li> <li>Bored Pile Machine 2</li> <li>Piling Works for Pier 2L (Bridge S200)</li> <li>Testing</li> <li>Sonic Test, interface core and full core for bored pile</li> <li>Installation of Precast Pile Cap &amp; 1st Pour for Pile Cap</li> <li>Delivery of precast pile cap shell</li> <li>Installation of pilecap and 1st pour for Pier 5H (Bridge S400-2)</li> <li>Installation of pilecap and 1st pour for Pier 9H (Bridge CT-2)</li> <li>Installation of pilecap and 1st pour for Pier 5D (Bridge S400-1)</li> <li>Installation of pilecap and 1st pour for Pier 5E (Bridge S400-1)</li> <li>Installation of pilecap and 1st pour for Pier 1L (Bridge ML-3-2)</li> <li>Installation of pilecap and 1st pour for Pier 9D (Bridge CT-1)</li> <li>Installation of pilecap and 1st pour for Pier 9E (Bridge CT-1)</li> <li>Installation of pilecap and 1st pour for Pier 5F (Bridge S400-2)</li> <li>Installation of pilecap and 1st pour for Pier 9F (Bridge CT-2)</li> <li>Fabrication and delivery of precast pier</li> <li>Installation of precast pier and 2nd pour for pile cap -5H</li> </ul>																
<b>Piling Works</b>							<ul style="list-style-type: none"> <li>Installation of Precast Pile Cap &amp; 1st Pour for Pile Cap</li> <li>Delivery of precast pile cap shell</li> <li>Installation of pilecap and 1st pour for Pier 5H (Bridge S400-2)</li> <li>Installation of pilecap and 1st pour for Pier 9H (Bridge CT-2)</li> <li>Installation of pilecap and 1st pour for Pier 5D (Bridge S400-1)</li> <li>Installation of pilecap and 1st pour for Pier 5E (Bridge S400-1)</li> <li>Installation of pilecap and 1st pour for Pier 1L (Bridge ML-3-2)</li> <li>Installation of pilecap and 1st pour for Pier 9D (Bridge CT-1)</li> <li>Installation of pilecap and 1st pour for Pier 9E (Bridge CT-1)</li> <li>Installation of pilecap and 1st pour for Pier 5F (Bridge S400-2)</li> <li>Installation of pilecap and 1st pour for Pier 9F (Bridge CT-2)</li> </ul>																
<b>Bored Pile Machine 2</b>							<ul style="list-style-type: none"> <li>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</li> <li>Fabrication and delivery of precast pier</li> <li>Installation of precast pier and 2nd pour for pile cap -5H</li> </ul>																
<b>Piling Works for Pier 2L (Bridge S200)</b>							<ul style="list-style-type: none"> <li>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</li> <li>Fabrication and delivery of precast pier</li> <li>Installation of precast pier and 2nd pour for pile cap -5H</li> </ul>																
<b>Testing</b>							<ul style="list-style-type: none"> <li>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</li> <li>Fabrication and delivery of precast pier</li> <li>Installation of precast pier and 2nd pour for pile cap -5H</li> </ul>																
S1-PW2060	Sonic Test, interface core and full core for bored pile	7	7	09-Aug-21	16-Aug-21	0%																	
<b>Installation of Precast Pile Cap &amp; 1st Pour for Pile Cap</b>							<ul style="list-style-type: none"> <li>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</li> <li>Fabrication and delivery of precast pier</li> <li>Installation of precast pier and 2nd pour for pile cap -5H</li> </ul>																
S1-PC1000	Delivery of precast pile cap shell	16	16	09-Aug-21	26-Aug-21	0%																	
S1-PC1020	Installation of pilecap and 1st pour for Pier 5H (Bridge S400-2)	26	26	27-Aug-21	27-Sep-21	0%																	
S1-PC1040	Installation of pilecap and 1st pour for Pier 9H (Bridge CT-2)	26	26	02-Sep-21	04-Oct-21	0%																	
S1-PC1060	Installation of pilecap and 1st pour for Pier 5D (Bridge S400-1)	26	26	09-Sep-21	11-Oct-21	0%																	
S1-PC1080	Installation of pilecap and 1st pour for Pier 5E (Bridge S400-1)	26	26	11-Sep-21	13-Oct-21	0%																	
S1-PC1100	Installation of pilecap and 1st pour for Pier 1L (Bridge ML-3-2)	26	26	21-Sep-21	23-Oct-21	0%																	
S1-PC1120	Installation of pilecap and 1st pour for Pier 9D (Bridge CT-1)	26	26	16-Sep-21	19-Oct-21	0%																	
S1-PC1140	Installation of pilecap and 1st pour for Pier 9E (Bridge CT-1)	26	26	16-Sep-21	19-Oct-21	0%																	
S1-PC1160	Installation of pilecap and 1st pour for Pier 5F (Bridge S400-2)	26	26	18-Sep-21	21-Oct-21	0%																	
S1-PC1180	Installation of pilecap and 1st pour for Pier 9F (Bridge CT-2)	26	26	21-Sep-21	23-Oct-21	0%																	
<b>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</b>							<ul style="list-style-type: none"> <li>Installation of Precast Pier &amp; 2nd Pour for Pile Cap</li> <li>Fabrication and delivery of precast pier</li> <li>Installation of precast pier and 2nd pour for pile cap -5H</li> </ul>																
S1-PP1000	Fabrication and delivery of precast pier	35	35	06-Sep-21*	19-Oct-21	0%																	
S1-PP1020	Installation of precast pier and 2nd pour for pile cap -5H	22	22	30-Sep-21	27-Oct-21	0%																	

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

**Three Month Rolling Programme (August 2021 - November 2021)**

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		





Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	August 2021							September 2021				October 2021				November 2021			
							25	01	08	15	22	29	05	12	19	26	03	10	17	24	31	07			
S1-PD3120	Deploy silt curtain	2	0	24-Jul-21 A	24-Jul-21 A	100%	Deploy silt curtain																		
S1-PD3140	Pre-drilling Works for 9B1	5	0	26-Jul-21 A	29-Jul-21 A	100%	Pre-drilling Works for 9B1																		
S1-PD3160	Pre-drilling Works for 9B2	5	5	09-Aug-21	13-Aug-21	0%	Pre-drilling Works for 9B2																		
<b>Section 2 of Works-All Works within Portion II,III,IV and VI</b>		393	121	03-Sep-20 A	06-Dec-21																				
<b>CBL Main Bridge and Marine Viaduct</b>		393	121	03-Sep-20 A	06-Dec-21																				
<b>Concrete Bridge</b>		393	120	03-Sep-20 A	06-Dec-21																				
<b>Construction of Stitching and Tension</b>		141	100	21-Jun-21 A	06-Dec-21																				
<b>Construction of Transverse Stitching</b>		89	44	21-Jun-21 A	29-Sep-21		Construction of Transverse Stitching																		
S2-CB3020	Construction of transverse stitch at W3 (NCE No.158 , NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)	48	12	21-Jun-21 A	21-Aug-21	0%	Construction of transverse stitch at W3 (NCE No.158 , NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)																		
S2-CB3040	Construction of transverse stitch at W4 (NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)	48	23	03-Jul-21 A	03-Sep-21	0%	Construction of transverse stitch at W4 (NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)																		
S2-CB3045	Construction of transverse stitch at SE7 (inclement weather on 4 Aug 21 - 7 Aug 21)	48	44	31-Jul-21 A	29-Sep-21	0%	Construction of transverse stitch at SE7 (inclement weather on 4 Aug 21 - 7 Aug 21)																		
S2-CB3050	Construction of transverse stitch at E4 (NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)	48	35	22-Jul-21 A	17-Sep-21	0%	Construction of transverse stitch at E4 (NCE No.162 & inclement weather on 4 Aug 21 - 7 Aug 21)																		
<b>Top Tension and Transverse Tension</b>		41	41	01-Sep-21	21-Oct-21		Top Tension and Transverse Tension																		
S2-CB3100	Top and transverse tension at SW3	9	9	01-Sep-21	10-Sep-21	0%	Top and transverse tension at SW3																		
S2-CB3105	Top and transverse tension at NW3	9	9	11-Sep-21	21-Sep-21	0%	Top and transverse tension at NW3																		
S2-CB3120	Top and transverse tension at NW4	9	9	14-Sep-21	24-Sep-21	0%	Top and transverse tension at NW4																		
S2-CB3125	Top and transverse tension at SW4	9	9	25-Sep-21	06-Oct-21	0%	Top and transverse tension at SW4																		
S2-CB3140	Top and transverse tension at NE4	9	9	29-Sep-21	09-Oct-21	0%	Top and transverse tension at NE4																		
S2-CB3145	Top and transverse tension at SE4	9	9	29-Sep-21	09-Oct-21	0%	Top and transverse tension at SE4																		
S2-CB3160	Top and transverse tension at SE7	9	9	11-Oct-21	21-Oct-21	0%	Top and transverse tension at SE7																		
<b>Bottom Tension and External Tension</b>		87	100	25-Jun-21 A	06-Dec-21																				
S2-CB3210	Bottom tension and external tension for NE7-A	18	14	23-Jul-21 A	24-Aug-21	0%	Bottom tension and external tension for NE7-A																		
S2-CB3220	Bottom tension and external tension for NE6-7	27	12	25-Jun-21 A	21-Aug-21	100%	Bottom tension and external tension for NE6-7																		
S2-CB3230	Bottom tension and external tension for SE5-6	18	18	25-Aug-21	14-Sep-21	0%	Bottom tension and external tension for SE5-6																		
S2-CB3245	Bottom tension and external tension for NW4-3	27	27	07-Oct-21	08-Nov-21	0%	Bottom tension and external tension for NW4-3																		
S2-CB3250	Bottom tension and external tension for SW4-3	27	27	15-Oct-21	15-Nov-21	0%	Bottom tension and external tension for SW4-3																		
S2-CB3260	Bottom tension and external tension for NE4-5	27	27	11-Oct-21	11-Nov-21	0%	Bottom tension and external tension for NE4-5																		
S2-CB3265	Bottom tension and external tension for SE4-5	27	27	23-Oct-21	23-Nov-21	0%	Bottom tension and external tension for SE4-5																		
S2-CB3267	Bottom tension and external tension for SE3-4	27	27	29-Oct-21	29-Nov-21	0%	Bottom tension and external tension for SE3-4																		
S2-CB3270	Bottom tension and external tension for SE6-7	27	27	22-Oct-21	22-Nov-21	0%	Bottom tension and external tension for SE6-7																		
S2-CB3280	Bottom tension and external tension for SE7-A	27	27	30-Oct-21	30-Nov-21	0%	Bottom tension and external tension for SE7-A																		
S2-CB3320	Bottom tension and external tension for NE3-4	27	27	05-Nov-21	06-Dec-21	0%	Bottom tension and external tension for NE3-4																		
<b>Construction of Long Stitching</b>		27	27	29-Oct-21	29-Nov-21																				
S2-CB3440	Construction of long stitching for E5-E6	27	27	29-Oct-21	29-Nov-21	0%	Construction of long stitching for E5-E6																		
<b>Delivery and Erection of Precast Girder for Marine Viaduct</b>		11	0	22-Jul-21 A	28-Jul-21 A		Delivery and Erection of Precast Girder for Marine Viaduct																		
<b>2nd Batch Concrete Deck Installation</b>		11	0	22-Jul-21 A	28-Jul-21 A		2nd Batch Concrete Deck Installation																		
<b>SE3-4</b>		10	0	22-Jul-21 A	26-Jul-21 A		SE3-4																		
S2-CB2430	Remove Supporting Beam and Delivery Barge Return to Factory	10	0	22-Jul-21 A	26-Jul-21 A	100%	Remove Supporting Beam and Delivery Barge Return to Factory																		
<b>SE2-3</b>		10	0	24-Jul-21 A	28-Jul-21 A		SE2-3																		
S2-CB2460	Remove Supporting Beam and Delivery Barge Return to Factory	10	0	24-Jul-21 A	28-Jul-21 A	100%	Remove Supporting Beam and Delivery Barge Return to Factory																		
<b>Procurement and Delivery</b>		224	93	03-Sep-20 A	27-Nov-21																				
S2-CB2486	Procurement and delivery of fabricated movement joints	180	15	20-Oct-20 A	25-Aug-21	85%	Procurement and delivery of fabricated movement joints																		
S2-CB2488	Procurement and delivery of bituminous materials	180	93	03-Sep-20 A	27-Nov-21	56%	Procurement and delivery of bituminous materials																		
<b>Construction of Concrete Structure Above Deck and Waterproofing Works</b>		63	63	20-Sep-21	04-Dec-21																				
<b>Construction of Concrete Structure Above Deck</b>		63	63	20-Sep-21	04-Dec-21																				
S2-CB3600	Construction of concrete structure at NE5-6	27	27	27-Oct-21	26-Nov-21	0%	Construction of concrete structure at NE5-6																		
S2-CB3605	Construction of concrete structure at SE5-6	27	27	04-Nov-21	04-Dec-21	0%	Construction of concrete structure at SE5-6																		
S2-CB3620	Construction of concrete structure at NE6-7	27	27	20-Sep-21	23-Oct-21	0%	Construction of concrete structure at NE6-7																		

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work    ▶ Summary

**Three Month Rolling Programme (August 2021 - November 2021)**

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		



Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	August 2021							September 2021				October 2021				November 2021	
							25	01	08	15	22	29	05	12	19	26	03	10	17	24	31	07	
<b>Electrical System</b>																							
<b>UPS Room</b>																							
S5-PR2580	UPS Installation (Including E&M Work)	100	100	09-Aug-21	06-Dec-21	0%	→																
<b>Generator Room</b>																							
S5-PR2500	Generator Installation (Including E&M Work)	90	17	02-Oct-20 A	27-Aug-21	57%	→ Generator Room																
S5-PR2540	Generator SAT	3	3	28-Aug-21	31-Aug-21	0%	→ Generator SAT																
S5-PR2545	Testing and Commissioning	45	45	01-Sep-21	26-Oct-21	0%	→ Testing and Commissioning																
S5-PR2560	Accomplish of Generator Installation	0	0		26-Oct-21	0%	◆ Accomplish of Generator Installation																
<b>MVAC System</b>																							
<b>Installation of MVAC System</b>																							
S5-PR2840	MVAC Installation Work	70	56	28-Sep-20 A	15-Oct-21	75%	→ MVAC Installation Work																
S5-PR2900	MVAC Testing and Commissioning	18	18	16-Oct-21	05-Nov-21	0%	→ MVAC Testing and Commissioning																
S5-PR2920	Accomplish of MVAC Installation	0	0		05-Nov-21	0%	◆ Accomplish of MVAC Installation																

█ Remaining Level of Effort     █ Critical Remaining Work  
█ Actual Work     ◆ Milestone  
█ Remaining Work     → Summary

Three Month Rolling Programme (August 2021 - November 2021)

Date	Revision	Checked	Approved
08-Aug-21	3MRP (Aug 21 - Nov 21)		

## **Contract 2**

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete	Predecessor Details	Successor Details	2019 2020 2021 2022 2023											
															Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
<b>MPU20200908 NE/2017/08 Programme Update (Sep 2020)</b>																										
<b>MPU20200908.2 Design and Method Statement, Material Submissions</b>																										
<b>MPU20200908.7 Construction Works</b>																										
<b>MPU20200908.7.1 Preliminaries</b>																										
PREL1130-02	Sample Selection and Testing for Structural Steels for Pre-fabrication of Noise Enclosure	33.0	59.0	13.0	(6days)	02-Jul-20 08:00 A	23-Sep-20 13:00	13-Aug-20 13:00	28-Aug-20 13:00	-22.5	0	60.61%	PREL1130-01: FS, PD1033: FS	PREL1130-12: FS, PREL1140-01: FS	Sample Selection and Testing for Structural Steels for Pre-fabrication of Noise Enclosure											
PREL1130-12	Fabrication of Structural Elements for Noise Enclosure	60.0	0.0	60.0	(6days)	03-Oct-20 08:00	12-Dec-20 18:00	28-Aug-20 13:00	10-Nov-20 13:00	-28.5	0	0%	PREL1130-02: FS, PD1093: FS	PREL1130-22: FS -40.0, PREL1130-32: FS	Fabrication of Structural Elements for Noise Enclosure											
PREL1130-22	Delivery of Structural Elements for At-grade Road Noise Enclosure	60.0	0.0	60.0	(6days)	28-Oct-20 08:00	08-Jan-21 18:00	21-Sep-20 13:00	03-Dec-20 13:00	-28.5	0	0%	PREL1130-12: FS -40.0	PORIII.AG.1190: FS -50.0, PORIII.AG.1220: FS -20.0	Delivery of Structural Elements for At-grade Road Noise Enclosure											
PREL1130-32	Fabrication of Structural Elements for Noise Enclosure for Elevated Deck, U-trough and Wan O Road	66.0	0.0	66.0	(6days)	14-Dec-20 08:00	06-Mar-21 18:00	22-Dec-20 13:00	16-Mar-21 13:00	7.5	0	0%	PREL1130-12: FS	PREL1130-42: FS	Fabrication of Structural Elements for Noise Enclosure for Elevated Deck, U-trough and Wan O Road											
PREL1140-01	Fabrication of Sub-frame and PMMA Panels for Noise Enclosure	60.0	0.0	60.0	(6days)	16-Dec-20 08:00	16-Dec-20 18:00	05-Feb-21 13:00	23-Apr-21 13:00	100.5	0	0%	PREL1130-02: FS, PD1110: FS	PREL1140-21: FS -15.0	Fabrication of Sub-frame and PMMA Panels for Noise Enclosure											
PREL1140-21	Delivery of Sub-frame and PMMA Panels for Noise Enclosure	30.0	0.0	30.0	(6days)	30-Nov-20 08:00	06-Jan-21 18:00	06-Apr-21 13:00	12-May-21 13:00	100.5	0	0%	PREL1140-01: FS -15.0	PORIII.AG.1210: FS, PORIII.AG.1230: FS, PORIII.FD.NE1030: FS, PREL1150-01: FS	Delivery of Sub-frame and PMMA Panels for Noise Enclosure											
PREL1150-00	Procurement, factory acceptance test for Lift	90.0	0.0	90.0	(6days)	03-Oct-20 08:00	20-Jan-21 18:00	23-Dec-20 08:00	16-Apr-21 18:00	68.0	0	0%	SC1190: FS 180.0		Procurement, factory acceptance test for Lift											
PREL1250	Procurement, Factory Acceptance Test and Delivery of Bearing	80.0	239.0	22.0	(7days)	14-Jan-20 08:00 A	30-Sep-20 18:00	30-Nov-20 08:00	21-Dec-20 18:00	82.0	0	72.5%	SC1280: FS 30.0, PD1410: FS	PORII.AB.ST1040: FS, PORIII.AB.ZB.1020: FS, PORI.FD.CP1020: FS	Procurement, Factory Acceptance Test and Delivery of Bearing											
<b>MPU20200908.7.2 Construction Works of Portion I</b>																										
PORIA1010	Provide Access to MTRC P10 at U-trough Section	214.0	161.0	22.0	(7days)	01-Apr-20 08:00 A	30-Sep-20 18:00	22-Oct-20 13:00	13-Nov-20 13:00	43.5	0	89.72%	PORIA1000: FS	POR.IUT.ST1050: FS, POR.IUT.1050: FS	Provide Access to MTRC P10 at U-trough Section											
<b>MPU20200908.7.2.1 Cycle Track - U-trough</b>																										
<b>MPU20200908.7.2.1.1 Excavation to U-tough Level(+5.0mPD to +4.4mPD) (700m3)</b>																										
POR.IUT.EX1040	Liaison with Towngas and TransComm and Utilities Diversion for Bay 3 (EW028 & EW018)	60.0	191.0	40.0	(6days)	17-Jan-20 08:00 A	28-Oct-20 18:00	17-Mar-21 13:00	07-May-21 13:00	153.5	0	33.33%		POR.IUT.ST1040-15: FS	Liaison with Towngas and TransComm and Utilities Diversion for Bay 3 (EW028 & EW018)											
<b>MPU20200908.7.2.1.2 Construction of U-trough Structure (9 Bays, 27D/Bay, 1 Team)</b>																										
POR.IUT.ST1010-23	Construction of U-trough Structure Bay 9 Wall Stem (2nd pour)	10.0	0.0	10.0	(6days)	09-Sep-20 08:00	19-Sep-20 18:00	03-Aug-21 13:00	14-Aug-21 13:00	265.5	0	0%	POR.IUT.ST1040-41: FS	POR.IUT.ST1010-33: FS	Construction of U-trough Structure Bay 9 Wall Stem (2nd pour)											
POR.IUT.ST1010-33	Construction of U-trough Structure Bay 8 Wall Stem (2nd pour)	10.0	0.0	10.0	(6days)	21-Sep-20 08:00	03-Oct-20 18:00	14-Aug-21 13:00	26-Aug-21 13:00	265.5	0	0%	POR.IUT.ST1010-23: FS	POR.IUT.ST1010-43: FS	Construction of U-trough Structure Bay 8 Wall Stem (2nd pour)											
POR.IUT.ST1010-43	Construction of U-trough Structure Bay 7 Wall Stem (2nd pour)	10.0	0.0	10.0	(6days)	05-Oct-20 08:00	15-Oct-20 18:00	26-Aug-21 13:00	07-Sep-21 13:00	265.5	0	0%	POR.IUT.ST1010-33: FS	POR.IUT.ST1010-53: FS	Construction of U-trough Structure Bay 7 Wall Stem (2nd pour)											
POR.IUT.ST1010-53	Construction of U-trough Structure Bay 6 Wall Stem (2nd pour)	10.0	0.0	10.0	(6days)	16-Oct-20 08:00	28-Oct-20 18:00	07-Sep-21 13:00	18-Sep-21 13:00	265.5	0	0%	POR.IUT.ST1010-43: FS	POR.IUT.ST1040-61: FS	Construction of U-trough Structure Bay 6 Wall Stem (2nd pour)											
POR.IUT.ST1040-61	Construction of U-trough Structure Bay 5 Wall Stem (2nd pour)	10.0	0.0	10.0	(6days)	29-Oct-20 08:00	09-Nov-20 18:00	18-Sep-21 13:00	02-Oct-21 13:00	265.5	0	0%	POR.IUT.ST1010-53: FS	POR.IUT.ST1040-71: FS	Construction of U-trough Structure Bay 5 Wall Stem (2nd pour)											
<b>MPU20200908.7.2.1.4 Remaining Works</b>																										
POR.IUT.1050	Construction of Drainage for SMH101 to SMH102	35.0	0.0	35.0	(6days)	03-Oct-20 08:00	13-Nov-20 18:00	13-Nov-20 13:00	24-Dec-20 13:00	34.5	0	0%	MS1260: FS, TW1420: FS, PORIA1010: FS	POR.IUT.1060: FS, POR.IUT.1060: FF	Construction of Drainage for SMH101 to SMH102											
POR.IUT.1060	Construction of Drainage for SMH102 to SMH103	35.0	0.0	35.0	(6days)	14-Nov-20 08:00	24-Dec-20 18:00	24-Dec-20 13:00	06-Feb-21 13:00	34.5	0	0%	POR.IUT.1050: FS, POR.IUT.1050: FF	POR.IUT.1070: FS, POR.IUT.1070: FF	Construction of Drainage for SMH102 to SMH103											
<b>MPU20200908.7.2.2 Elevated Cycle Track</b>																										
<b>MPU20200908.7.2.2.1 ELS Construction for Elevated Cycle Track</b>																										
POR.IED.EX1000	Sheet Piling along Elevated Cycle Track	15.0	16.0	10.0	(6days)	21-Aug-20 08:00 A	19-Sep-20 18:00	23-Jul-20 13:00	04-Aug-20 13:00	-40.5	0	33.33%	POR.IED.HP1000: FS, POR.IED.HP1020: FS -6.0, POR.IED.HP1250: FS	POR.IED.EX1030: FS	Sheet Piling along Elevated Cycle Track											
<b>MPU20200908.7.2.2.4 Excavation to Pile Cap Level (+5.0mPD to +2.8mPD) (2000m3)</b>																										
POR.IED.EX1030	Excavation to Pile Cap Founding Level (+5.0mPD to +2.8mPD)	8.0	0.0	8.0	(6days)	21-Sep-20 08:00	29-Sep-20 18:00	04-Aug-20 13:00	13-Aug-20 13:00	-40.5	0	0%	POR.IED.EX1000: FS, TW1180: FF	POR.IED.GD1000: FS, POR.IED.GD.0310: FS, POR.IED.PC1010: FS	Excavation to Pile Cap Founding Level (+5.0mPD to +2.8mPD)											
<b>MPU20200908.7.2.2.5 Construction of Pile Caps (10 PC, 14D/Cap, 4teams)</b>																										
POR.IED.PC1010	Construction of PC10 (incl. Installation of Capping plate)	14.0	0.0	14.0	(6days)	30-Sep-20 08:00	17-Oct-20 18:00	08-Sep-20 08:00	23-Sep-20 18:00	-19.0	0	0%	MS1090: FF, POR.IED.EX1030: FS	POR.IED.CP1010: FS, POR.IED.PC1040: FS, POR.IED.PC1050: FS	Construction of PC10 (incl. Installation of Capping plate)											
POR.IED.PC1020	Construction of PC9 (incl. Installation of Capping plate)	14.0	0.0	14.0	(6days)	30-Sep-20 08:00	17-Oct-20 18:00	08-Sep-20 08:00	23-Sep-20 18:00	-19.0	0	0%	MS1090: FF, POR.IED.EX1030: FS	POR.IED.PC1060: FS, POR.IED.PC1040: FS, POR.IED.PC1050: FS	Construction of PC9 (incl. Installation of Capping plate)											
POR.IED.PC1030	Construction of PC8 (incl. Installation of Capping plate)	14.0	0.0	14.0	(6days)	30-Sep-20 08:00	17-Oct-20 18:00	08-Sep-20 08:00	23-Sep-20 18:00	-19.0	0	0%	MS1090: FF, POR.IED.EX1030: FS	POR.IED.PC1060: FS, POR.IED.PC1040: FS, POR.IED.PC1050: FS	Construction of PC8 (incl. Installation of Capping plate)											
POR.IED.PC1040	Construction of PC7 (incl. Installation of Capping plate)	14.0	0.0	14.0	(6days)	19-Oct-20 08:00	04-Nov-20 18:00	24-Sep-20 08:00	12-Oct-20 18:00	-19.0	0	0%	POR.IED.PC1010: FS, POR.IED.PC1020: FS, POR.IED.PC1030: FS	POR.IED.PC1080: FS, POR.IED.PC1090: FS, POR.IED.PC1100: FS	Construction of PC7 (incl. Installation of Capping plate)											
POR.IED.PC1050	Construction of PC6 (incl. Installation of Capping plate)	14.0	0.0	14.0	(6days)	19-Oct-20 08:00	04-Nov-20 18:00	24-Sep-20 08:00	12-Oct-20 18:00	-19.0	0	0%	POR.IED.PC1010: FS, POR.IED.PC1020: FS, POR.IED.PC1030: FS	POR.IED.PC1090: FS, POR.IED.PC1100: FS, POR.IED.PC1080: FS	Construction of PC6 (incl. Installation of Capping plate)											

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



**Contract No.: NE/2017/08**  
**Cross Bay Link, Tseung Kwan O**  
**Road D9 and Associated Works**  
 Page 1 of 6



Date	Revision	Checked	Approved
08-Aug-20	3M Rolling Programme	TL	STL



NE/2017/08 Monthly Programme Update		Contract No.: NE/2017/08 - Cross Bay Link, Tseung Kwan O - Road D9 and Associated Works													2019												2020				2021				2022				2023			
Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete	Predecessor Details	Successor Details	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
PORIII.ED.GB.1090	Construction of Columns at PC37	10.0	0.0	10.0	(6days)	17-Oct-20 08:00	29-Oct-20 18:00	18-Aug-20 13:00	29-Aug-20 13:00	-49.5	0	0%	PORIII.ED.GB.1060: FS, PORIII.ED.GB.1070: FS	PORIII.ED.GB.1100: FS, PORIII.ED.GB.1110: FS																												
PORIII.ED.GB.1100	Construction of Columns at PC38	10.0	0.0	10.0	(6days)	30-Oct-20 08:00	10-Nov-20 18:00	29-Aug-20 13:00	10-Sep-20 13:00	-49.5	0	0%	PORIII.ED.GB.1080: FS, PORIII.ED.GB.1090: FS	PORIII.ED.GB.1120: FS, PORIII.ED.GB.1130: FS																												
PORIII.ED.GB.1110	Construction of Columns at PC39	10.0	0.0	10.0	(6days)	30-Oct-20 08:00	10-Nov-20 18:00	29-Aug-20 13:00	10-Sep-20 13:00	-49.5	0	0%	PORIII.ED.GB.1080: FS, PORIII.ED.GB.1090: FS	PORIII.ED.GB.1120: FS, PORIII.ED.GB.1130: FS																												
PORIII.ED.GB.1120	Construction of Columns at PC40	10.0	0.0	10.0	(6days)	11-Nov-20 08:00	21-Nov-20 18:00	10-Sep-20 13:00	22-Sep-20 13:00	-49.5	0	0%	PORIII.ED.GB.1100: FS, PORIII.ED.GB.1110: FS	PORIII.ED.GC.1130: FS, PORIII.ED.GC.1120: FS																												
PORIII.ED.GB.1130	Construction of Columns at PC41	10.0	0.0	10.0	(6days)	11-Nov-20 08:00	21-Nov-20 18:00	10-Sep-20 13:00	22-Sep-20 13:00	-49.5	0	0%	PORIII.ED.GB.1100: FS, PORIII.ED.GB.1110: FS	PORIII.ED.GC.1130: FS, PORIII.ED.GC.1120: FS																												
<b>MPU20200908.7.4.1.19 Construction of Grid C Structure</b>		<b>147.0</b>	<b>56.0</b>	<b>91.0</b>	<b>(6days)</b>	<b>06-Jul-20 08:00 A</b>	<b>29-Dec-20 18:00</b>	<b>01-Aug-20 13:00</b>	<b>30-Oct-20 13:00</b>	<b>-49.5</b>																																
PORIII.ED.GC.1010	Installation of Capping Plate (27nos) (Grid C) (3 teams) (4Days/no)	40.0	56.0	4.0	(6days)	06-Jul-20 08:00 A	12-Sep-20 18:00	26-Aug-20 13:00	31-Aug-20 13:00	-11.5	0	90%	PORIII.ED.GC.1000: FS, PORIII.ED.GB.1010: FS, PORIII.ED.GC.1020: FS, -25.0	PORIII.ED.GC.1010: FS, -29.0, PORIII.ED.GC.1028: FS, -25.0																												
PORIII.ED.GC.1025	Construction of PC21	9.0	0.0	9.0	(6days)	09-Sep-20 08:00	18-Sep-20 18:00	01-Aug-20 13:00	12-Aug-20 13:00	-32.5	0	0%	PORIII.ED.GC.1020: FS, PORIII.ED.GC.1021: FS	PORIII.ED.GC.1030: FS, PORIII.ED.GC.1030: FS																												
PORIII.ED.GC.1026	Construction of PC19	9.0	0.0	9.0	(6days)	09-Sep-20 08:00	18-Sep-20 18:00	01-Aug-20 13:00	12-Aug-20 13:00	-32.5	0	0%	PORIII.ED.GC.1020: FS, PORIII.ED.GC.1021: FS	PORIII.ED.GC.1030: FS, PORIII.ED.GC.1030: FS																												
PORIII.ED.GC.1030	Backfilling to Interim Formation Level (7 Layers, 5D/Layer) (Grid C)	35.0	0.0	35.0	(6days)	12-Oct-20 08:00	21-Nov-20 18:00	12-Aug-20 13:00	22-Sep-20 13:00	-49.5	0	0%	PORIII.ED.GB.1030: FS, PORIII.ED.GB.1030: FS, PORIII.ED.GC.1025: FS	PORIII.ED.GC.1120: FS, PORIII.ED.GC.1130: FS																												
PORIII.ED.GC.1080	Construction of Column at PC21	10.0	0.0	10.0	(6days)	16-Dec-20 08:00	29-Dec-20 18:00	17-Oct-20 13:00	30-Oct-20 13:00	-49.5	0	0%	PORIII.ED.GC.1110: FS, PORIII.ED.GC.1100: FS	PORIII.ED.GC.1070: FS, PORIII.ED.GC.1060: FS																												
PORIII.ED.GC.1090	Construction of Column at PC23	10.0	0.0	10.0	(6days)	16-Dec-20 08:00	29-Dec-20 18:00	17-Oct-20 13:00	30-Oct-20 13:00	-49.5	0	0%	PORIII.ED.GC.1110: FS, PORIII.ED.GC.1100: FS	PORIII.ED.GC.1070: FS, PORIII.ED.GC.1060: FS																												
PORIII.ED.GC.1100	Construction of Column at PC25	10.0	0.0	10.0	(6days)	04-Dec-20 08:00	15-Dec-20 18:00	06-Oct-20 13:00	17-Oct-20 13:00	-49.5	0	0%	PORIII.ED.GC.1120: FS, PORIII.ED.GC.1130: FS	PORIII.ED.GC.1090: FS, PORIII.ED.GC.1080: FS																												
PORIII.ED.GC.1110	Construction of Column at PC27	10.0	0.0	10.0	(6days)	04-Dec-20 08:00	15-Dec-20 18:00	06-Oct-20 13:00	17-Oct-20 13:00	-49.5	0	0%	PORIII.ED.GC.1120: FS, PORIII.ED.GC.1130: FS	PORIII.ED.GC.1090: FS, PORIII.ED.GC.1080: FS																												
PORIII.ED.GC.1120	Construction of Column at PC29	10.0	0.0	10.0	(6days)	23-Nov-20 08:00	03-Dec-20 18:00	22-Sep-20 13:00	06-Oct-20 13:00	-49.5	0	0%	PORIII.ED.GB.1120: FS, PORIII.ED.GB.1130: FS, PORIII.ED.GC.1030: FS	PORIII.ED.GC.1110: FS, PORIII.ED.GC.1100: FS																												
PORIII.ED.GC.1130	Construction of Column at PC31	10.0	0.0	10.0	(6days)	23-Nov-20 08:00	03-Dec-20 18:00	22-Sep-20 13:00	06-Oct-20 13:00	-49.5	0	0%	PORIII.ED.GB.1120: FS, PORIII.ED.GB.1130: FS, PORIII.ED.GC.1030: FS	PORIII.ED.GC.1110: FS, PORIII.ED.GC.1100: FS																												
<b>MPU20200908.7.4.1.20 Construction of Grid D Structure</b>		<b>132.0</b>	<b>40.0</b>	<b>92.0</b>	<b>(7days)</b>	<b>24-Jul-20 08:00 A</b>	<b>30-Dec-20 18:00</b>	<b>01-Jun-20 13:00</b>	<b>18-Sep-20 13:00</b>	<b>-83.5</b>																																
PORIII.ED.GD.0110	Acceptance of ELS Design and Method Statement (7D ICE Certification and 7D for PM Acceptance, 14D TRA) (PMI052)	28.0	47.0	10.0	(7days)	24-Jul-20 08:00 A	18-Sep-20 13:00	01-Jun-20 13:00	11-Jun-20 13:00	-99.5	14	64.29%	PORIII.ED.GD.0100: FS	PORIII.ED.GD.0120: FS, PORIII.ED.GD.0130-10: FF																												
PORIII.ED.GD.0130-10	1st Temporary Drainage Diversion from Incoming 1500mm Drain from MTRC at SMH011 to SMH4046896 (PMI052)	14.0	0.0	14.0	(6days)	19-Sep-20 08:00	07-Oct-20 18:00	07-Jul-20 13:00	23-Jul-20 13:00	-63.5	0	0%	PORIII.ED.GD.0110: FF, PORIII.ED.GD.0170-20: FS	PORIII.ED.GD.0180: FS -7.0																												
PORIII.ED.GD.0170-40	Excavation and Installation of ELS (including lagging & Strut) to +3.7mPD for SMH011 to Expose Existing Drains (PMI052)	11.0	3.0	6.0	(6days)	05-Sep-20 08:00 A	06-Oct-20 18:00	04-Jul-20 13:00	11-Jul-20 13:00	-72.5	0	45.45%	PORIII.ED.GD.0170-20: FS, PORIII.ED.GD.0170-50: FS	PORIII.ED.GD.0190: FS																												
PORIII.ED.GD.0170-50	Excavation and Installation of ELS (including lagging & strut) to +2.3mPD for SMH012 to Expose Existing Drains (PMI052)	17.0	9.0	7.0	(6days)	29-Aug-20 08:00 A	26-Sep-20 18:00	11-Jun-20 13:00	19-Jun-20 13:00	-83.5	0	58.82%	PORIII.ED.GD.0170-30: FS	PORIII.ED.GD.0200: FS, PORIII.ED.GD.0170-40: FS																												
PORIII.ED.GD.0180	Excavation to Pile Cap Bottom Level except PC18, PC20 & PC30 (+2.3mPD) includ. demolish Abandoned Drain pipe (Grid D)	12.0	0.0	12.0	(6days)	28-Sep-20 08:00	13-Oct-20 18:00	15-Jul-20 13:00	29-Jul-20 13:00	-63.5	0	0%	PORIII.ED.GC.1000: FS, PORIII.ED.GD.0130-10: FS -7.0	PORIII.ED.GD.1010-06: FS																												
PORIII.ED.GD.0190	2nd Drainage Diversion of Existing 1500mm pipe from SMH011 ELS to SMH4046896 (PMI052)	14.0	0.0	14.0	(6days)	16-Oct-20 08:00	02-Nov-20 18:00	11-Jul-20 13:00	28-Jul-20 13:00	-80.5	0	0%	PORIII.ED.GD.0170-40: FS, PORIII.ED.GD.0200: FS	PORIII.ED.GD.0210: FS																												
PORIII.ED.GD.0200	Drainage Diversion of Portion I Existing 1500mm pipe to SMH4046896 (PMI052)	14.0	0.0	14.0	(6days)	28-Sep-20 08:00	15-Oct-20 18:00	19-Jun-20 13:00	08-Jul-20 13:00	-83.5	0	0%	PORIII.ED.GD.0170-50: FS	PORIII.ED.GD.0220: FS, PORIII.ED.GD.0190: FS																												
PORIII.ED.GD.0210	Further Excavation and Installation of ELS (lagging) to +0.83mPD for SMH011 including Blinding (PMI052)	18.0	0.0	18.0	(6days)	06-Nov-20 08:00	26-Nov-20 18:00	28-Jul-20 13:00	18-Aug-20 13:00	-83.5	0	0%	PORIII.ED.GD.0190: FS, PORIII.ED.GD.0220: FS	PORIII.ED.GD.0230: FS																												
PORIII.ED.GD.0220	Further Excavation and Installation of ELS (lagging) to +0.31mPD for SMH012 including Blinding (NCE108, PMI052)	17.0	0.0	17.0	(6days)	16-Oct-20 08:00	05-Nov-20 18:00	08-Jul-20 13:00	28-Jul-20 13:00	-83.5	0	0%	PORIII.ED.GD.0200: FS	PORIII.ED.GD.0240: FS, PORIII.ED.GD.0210: FS																												
PORIII.ED.GD.0230	Construction of Manhole SMH011 (1st Portion) (below +2.9mPD) (PMI052)	10.0	0.0	10.0	(6days)	27-Nov-20 08:00	08-Dec-20 18:00	18-Aug-20 13:00	29-Aug-20 13:00	-83.5	0	0%	PORIII.ED.GD.0210: FS, PORIII.ED.GD.0240: FS	PORIII.ED.GD.0250: FS																												
PORIII.ED.GD.0240	Construction of Manhole SMH012 (1st Portion) (below +2.9mPD) (PMI052)	10.0	0.0	10.0	(6days)	06-Nov-20 08:00	17-Nov-20 18:00	28-Jul-20 13:00	08-Aug-20 13:00	-83.5	0	0%	PORIII.ED.GD.0220: FS	PORIII.ED.GD.0270: FS, PORIII.ED.GD.0230: FS																												
PORIII.ED.GD.0250	Backfilling for SMH011 to +2.3mPD (PMI052)	10.0	0.0	10.0	(6days)	09-Dec-20 08:00	19-Dec-20 18:00	29-Aug-20 13:00	10-Sep-20 13:00	-83.5	0	0%	PORIII.ED.GD.0230: FS, PORIII.ED.GD.0270-01: FS	PORIII.ED.GD.0250-01: FS																												
PORIII.ED.GD.0250-01	Excavation to +2.3mPD for PC30 (PMI052)	4.0	0.0	4.0	(6days)	21-Dec-20 08:00	24-Dec-20 18:00	10-Sep-20 13:00	15-Sep-20 13:00	-83.5	0	0%	PORIII.ED.GD.0250: FS	PORIII.ED.GD.0260: FS																												
PORIII.ED.GD.0270	Backfilling for SMH012 to +2.3mPD (PMI052)	10.0	0.0	10.0	(6days)	18-Nov-20 08:00	28-Nov-20 18:00	08-Aug-20 13:00	20-Aug-20 13:00	-83.5	0	0%	PORIII.ED.GD.0240: FS	PORIII.ED.GD.0270-01: FS																												
PORIII.ED.GD.0270-01	Excavation to +2.3mPD for PC18 (PMI052)	4.0	0.0	4.0	(6days)	30-Nov-20 08:00	03-Dec-20 18:00	20-Aug-20 13:00	25-Aug-20 13:00	-83.5	0	0%	PORIII.ED.GD.0270: FS	PORIII.ED.GD.0280: FS, PORIII.ED.GD.0250: FS																												
PORIII.ED.GD.0280	Removal of Struts in ELS for SMH012 and Cutting of Sheet Piles at +2.3mPD (PMI052)	4.0	0.0	4.0	(6days)	04-Dec-20 08:00	08-Dec-20 18:00	25-Aug-20 13:00	29-Aug-20 13:00	-83.5	0	0%	PORIII.ED.GD.0270-01: FS	PORIII.ED.GD.1010-04: FS																												
PORIII.ED.GD.0310	Excavate to +2.3mPD for Grid 3	5.0	0																																							

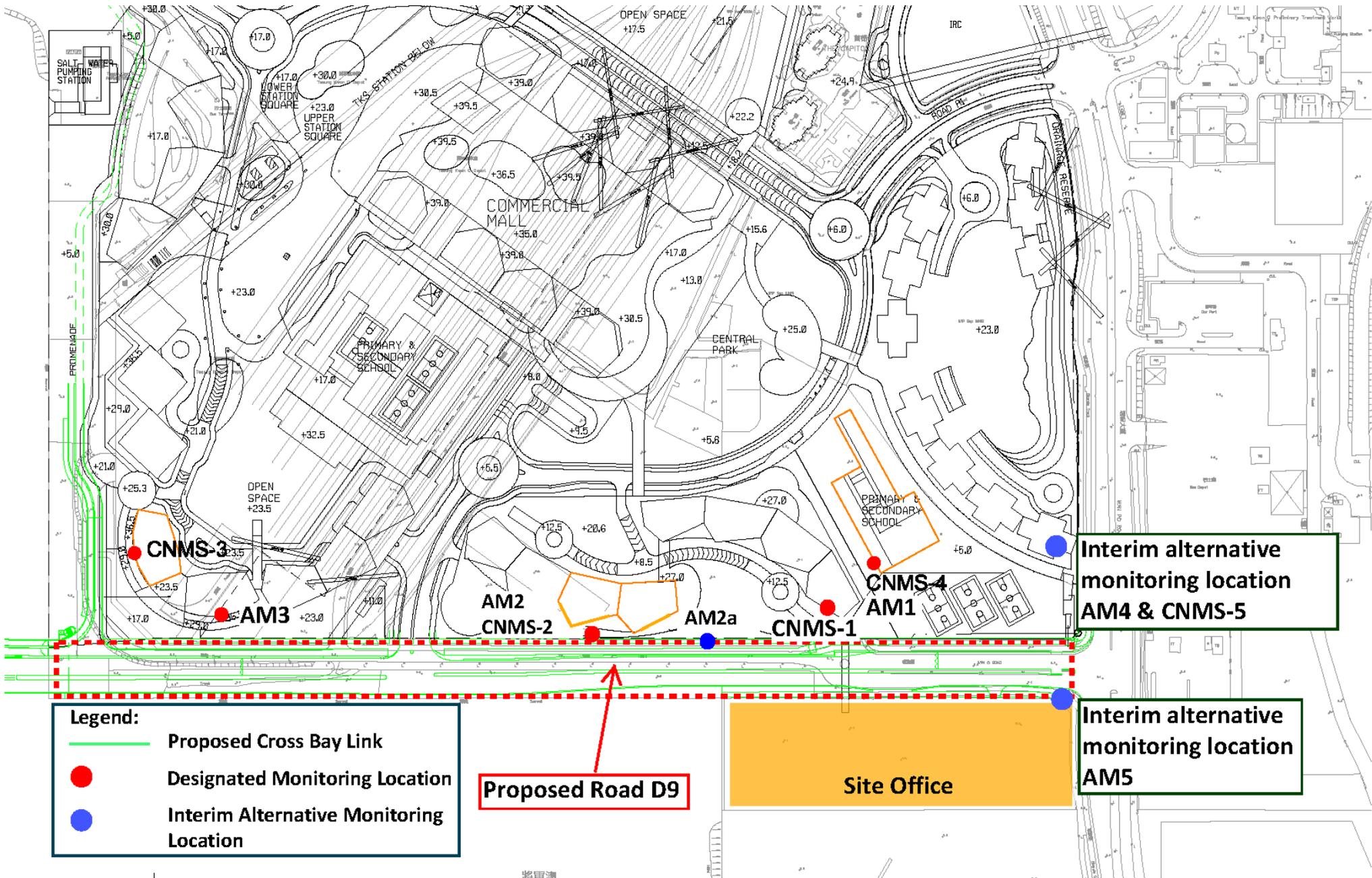
NE/2017/08 Monthly Programme Update		Contract No.: NE/2017/08 - Cross Bay Link, Tseung Kwan O - Road D9 and Associated Works													2019												2020			2021			2022			2023		
Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Calendar	Start	Finish	Late Start	Late Finish	Total Float	TRA	Activity % Complete	Predecessor Details	Successor Details	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3				
PORIII.ED.GD.1010-06	Installation of Capping Plate for PC26, PC28 (4nos, 4D/no, 2 teams)	8.0	0.0	8.0	(6days)	14-Oct-20 08:00	22-Oct-20 18:00	29-Jul-20 13:00	07-Aug-20 13:00	-63.5	0	0%	PORIII.ED.GD.0180: FS	PORIII.ED.GD.1022: FS, PORIII.ED.GD.1021: FS, PORIII.ED.GD.1010-02: FS																								
PORIII.ED.GD.1021	Construction of PC28 (PMI052)	9.0	0.0	9.0	(6days)	23-Oct-20 08:00	03-Nov-20 13:00	07-Aug-20 13:00	18-Aug-20 13:00	-63.5	0	0%	PORIII.ED.GD.1010-06: FS	PORIII.ED.GD.1023: FS, PORIII.ED.GD.1024: FS																								
PORIII.ED.GD.1022	Construction of PC26 (PMI052)	9.0	0.0	9.0	(6days)	23-Oct-20 08:00	03-Nov-20 18:00	07-Aug-20 13:00	18-Aug-20 13:00	-63.5	0	0%	PORIII.ED.GD.1010-06: FS	PORIII.ED.GD.1024: FS, PORIII.ED.GD.1023: FS																								
PORIII.ED.GD.1023	Construction of PC24 (PMI052)	9.0	0.0	9.0	(6days)	04-Nov-20 08:00	13-Nov-20 18:00	18-Aug-20 13:00	28-Aug-20 13:00	-63.5	0	0%	PORIII.ED.GD.1010-02: FS, PORIII.ED.GD.1021: FS, PORIII.ED.GD.1022: FS	PORIII.ED.GD.1020: FS, PORIII.ED.GD.1028: FS																								
PORIII.ED.GD.1024	Construction of PC22 (PMI052)	9.0	0.0	9.0	(6days)	04-Nov-20 08:00	13-Nov-20 18:00	18-Aug-20 13:00	28-Aug-20 13:00	-63.5	0	0%	PORIII.ED.GD.1022: FS, PORIII.ED.GD.1021: FS, PORIII.ED.GD.1010-02: FS	PORIII.ED.GD.1028: FS, PORIII.ED.GD.1020: FS																								
PORIII.ED.GD.1025	Construction of PC20 (PMI052)	9.0	0.0	9.0	(6days)	18-Dec-20 08:00	30-Dec-20 18:00	08-Sep-20 13:00	18-Sep-20 13:00	-83.5	0	0%	PORIII.ED.GD.1010-04: FS, PORIII.ED.GD.1028: FS, PORIII.ED.GD.1020: FS	PORIII.ED.GD.1030: FS, PORIII.ED.GD.1027: FS																								
PORIII.ED.GD.1026	Construction of PC18 (PMI052)	9.0	0.0	9.0	(6days)	18-Dec-20 08:00	30-Dec-20 18:00	08-Sep-20 13:00	18-Sep-20 13:00	-83.5	0	0%	PORIII.ED.GD.1010-04: FS, PORIII.ED.GD.1028: FS, PORIII.ED.GD.1020: FS	PORIII.ED.GD.1027: FS																								
PORIII.ED.GD.1028	Construction of PC14 (PMI052)	9.0	0.0	9.0	(6days)	14-Nov-20 08:00	24-Nov-20 18:00	28-Aug-20 13:00	08-Sep-20 13:00	-63.5	0	0%	PORIII.ED.GD.1010-05: FS, PORIII.ED.GD.1024: FS, PORIII.ED.GD.1023: FS	PORIII.ED.GD.1025: FS, PORIII.ED.GD.1026: FS																								
MPU20200908.7.4.1.7	Construction of PC42 (16D) + Abutment 2B (28D) + Bearing Installation (14D)	28.0	0.0	28.0	(6days)	24-Sep-20 08:00	29-Oct-20 18:00	18-Dec-20 13:00	23-Jan-21 13:00	70.5																												
PORIII.AB2B.1010-01	Construction of Abutment 2B (2nd pour)	14.0	0.0	14.0	(6days)	24-Sep-20 08:00	12-Oct-20 18:00	18-Dec-20 13:00	07-Jan-21 13:00	70.5	0	0%	PORIII.AB2B.1010: FS, PORIII.UT.ST1100: FS	PORIII.UT.ST1250: FS, PORIII.AB2B.1020: FS																								
PORIII.AB2B.1020	Bearing Installation at Abutment 2B	14.0	0.0	14.0	(6days)	13-Oct-20 08:00	29-Oct-20 18:00	07-Jan-21 13:00	23-Jan-21 13:00	70.5	0	0%	PREL1250: FS, PORIII.AB2B.1010-01: FS	PORIII.ED.PB1000: FS																								
MPU20200908.7.4.2	Construction of U-trough Structure	205.0	106.0	99.0		06-May-20 08:00 A	08-Jan-21 18:00	25-Aug-20 13:00	22-Dec-20 13:00	-12.5																												
MPU20200908.7.4.2.6	Construction of U-trough Structure	205.0	106.0	99.0		06-May-20 08:00 A	08-Jan-21 18:00	25-Aug-20 13:00	22-Dec-20 13:00	-12.5																												
PORIII.UT.ST1025	Trimming of Pile Head and Installation of Capping Plate	60.0	106.0	11.0	(6days)	06-May-20 08:00 A	08-Oct-20 18:00	09-Sep-20 13:00	22-Sep-20 13:00	-12.5	0	81.67%	PORIII.UT.ST1010: FS, PORIII.UT.ST1035: FS	PORIII.UT.ST1100: FS -24.0, PORIII.UT.ST1120: FS																								
PORIII.UT.ST1035	Review Design on U-trough Structure due to Additional Design Requirement (NCE119)	60.0	65.0	15.0	(7days)	06-Jul-20 08:00 A	23-Sep-20 13:00	25-Aug-20 13:00	09-Sep-20 13:00	-14.5	0	75%		PORIII.UT.ST1110: FS, PORIII.UT.ST1025: FS																								
PORIII.UT.ST1100	Construction of Base Slab Bay 1	18.0	5.0	13.0	(6days)	03-Sep-20 08:00 A	23-Sep-20 18:00	25-Aug-20 13:00	09-Sep-20 13:00	-12.5	0	27.78%	PORIII.UT.ST1025: FS -24.0	PORIII.UT.ST1110: FS, PORIII.AB2B.1010-01: FS																								
PORIII.UT.ST1110	Construction of Base Slab Bay 2	18.0	0.0	18.0	(6days)	24-Sep-20 08:00	16-Oct-20 18:00	09-Sep-20 13:00	30-Sep-20 13:00	-12.5	0	0%	PORIII.UT.ST1100: FS, PORIII.UT.ST1035: FS, MS1470: FS	PORIII.UT.ST1120: FS																								
PORIII.UT.ST1120	Construction of Base Slab Bay 3	18.0	0.0	18.0	(6days)	17-Oct-20 08:00	07-Nov-20 18:00	30-Sep-20 13:00	23-Oct-20 13:00	-12.5	0	0%	PORIII.UT.ST1110: FS, PORIII.UT.ST1025: FS	PORIII.UT.ST1130: FS																								
PORIII.UT.ST1130	Construction of Base Slab Bay 4	18.0	0.0	18.0	(6days)	09-Nov-20 08:00	28-Nov-20 18:00	23-Oct-20 13:00	14-Nov-20 13:00	-12.5	0	0%	PORIII.UT.ST1120: FS	PORIII.UT.ST1140: FS																								
PORIII.UT.ST1140	Construction of Base Slab Bay 5	18.0	0.0	18.0	(6days)	30-Nov-20 08:00	19-Dec-20 18:00	14-Nov-20 13:00	05-Dec-20 13:00	-12.5	0	0%	PORIII.UT.ST1130: FS	PORIII.UT.ST1150: FS, PORIII.UT.ST1200: FS																								
PORIII.UT.ST1150	Construction of Internal Wall Stem Bay 1	14.0	0.0	14.0	(6days)	21-Dec-20 08:00	08-Jan-21 18:00	05-Dec-20 13:00	22-Dec-20 13:00	-12.5	0	0%	PORIII.UT.ST1140: FS	PORIII.UT.ST1160: FS																								
PORIII.UT.ST1200	Construction of External Wall Stem Bay 1	14.0	0.0	14.0	(6days)	21-Dec-20 08:00	08-Jan-21 18:00	05-Dec-20 13:00	22-Dec-20 13:00	-12.5	0	0%	PORIII.UT.ST1140: FS	PORIII.UT.ST1210: FS																								
MPU20200908.7.6	Construction of the At-grade Noise Semi Enclosures	253.0	129.0	124.0	(6days)	02-Apr-20 08:00 A	06-Feb-21 18:00	28-Aug-20 13:00	29-Apr-21 13:00	63.5																												
MPU20200908.7.6.7	Construction of Northern Drainage (SMH001 to SMH003)	82.0	0.0	82.0	(6days)	09-Sep-20 08:00	16-Dec-20 18:00	16-Jan-21 13:00	29-Apr-21 13:00	105.5																												
PORIII.AG.1102	Utilities Ducts Laying across Road D9 (Northern Portion)	32.0	0.0	32.0	(6days)	09-Sep-20 08:00	17-Oct-20 18:00	16-Jan-21 13:00	26-Feb-21 13:00	105.5	0	0%	PORIII.AG.1080: FS	PORIII.AG.2000: FS																								
PORIII.AG.2000	Cable Laying and Decommissioning of Existing Cross Road UUs at Wan O Road	50.0	0.0	50.0	(6days)	19-Oct-20 08:00	16-Dec-20 18:00	26-Feb-21 13:00	29-Apr-21 13:00	105.5	0	0%	PORIII.AG.1160-020: FS, PORIII.AG.1102: FS	WO.CA.TTA2NP.1030: FS, WO.CA.TTA2SP.1020: FS																								
MPU20200908.7.6.3	Construction of Pad Footing (Bay 1 to 11)	216.0	129.0	87.0	(6days)	02-Apr-20 08:00 A	22-Dec-20 18:00	28-Aug-20 13:00	06-Mar-21 13:00	57.5																												
MPU20200908.7.6.3.3	Base Slab	77.0	0.0	77.0	(6days)	09-Sep-20 08:00	10-Dec-20 18:00	28-Aug-20 13:00	23-Feb-21 13:00	57.5																												
MPU20200908.7.6.3.3.1	North Bound	30.0	0.0	30.0	(6days)	06-Nov-20 08:00	10-Dec-20 18:00	15-Jan-21 13:00	23-Feb-21 13:00	57.5																												
PORIII.AG.1460	Construction of Pad Footing Bay NB-N17 Base Slab	10.0	0.0	10.0	(6days)	06-Nov-20 08:00	17-Nov-20 18:00	15-Jan-21 13:00	27-Jan-21 13:00	57.5	0	0%	WO.CA.TTA2NP.1150-02: FS	PORIII.AG.1890: FS																								
PORIII.AG.1470	Construction of Pad Footing Bay NB-N18 Base Slab	10.0	0.0	10.0	(6days)	30-Nov-20 08:00	10-Dec-20 18:00	08-Feb-21 13:00	23-Feb-21 13:00	57.5	0	0%	PORIII.AG.1890: FS	PORIII.AG.1900: FS																								
MPU20200908.7.6.3.3.2	South Bound	20.0	0.0	20.0	(6days)	09-Sep-20 08:00	03-Oct-20 18:00	28-Aug-20 13:00	21-Sep-20 13:00	-9.5																												
PORIII.AG.1510	Construction of Pad Footing Bay NB-S15 Base Slab	10.0	0.0	10.0	(6days)	09-Sep-20 08:00	19-Sep-20 18:00	28-Aug-20 13:00	09-Sep-20 13:00	-9.5	0	0%	PORIII.AG.1100: FS, PORIII.AG.1500: FS	PORIII.AG.1520: FS, PORIII.AG.1690: FS																								
PORIII.AG.1520	Construction of Pad Footing Bay NB-S16 Base Slab	10.0	0.0	10.0	(6days)	21-Sep-20 08:00	03-Oct-20 18:00	09-Sep-20 13:00	21-Sep-20 13:00	-9.5	0	0%	PORIII.AG.1510: FS	PORIII.AG.1700: FS, PORIII.AG.1920: FS																								
MPU20200908.7.6.3.4	Wall Stem	216.0	129.0	87.0	(6days)	02-Apr-20 08:00 A	22-Dec-20 18:00	07-Sep-20 13:00	06-Mar-21 13:00	57.5																												
MPU20200908.7.6.3.4.1	North Bound	216.0	129.0	87.0	(6days)	02-Apr-20 08:00 A	22-Dec-20 18:00	22-Sep-20 13:00	06-Mar-21 13:00	57.5																												
PORIII.AG.1800	Construction of Pad Footing Bay NB-N8 Wall Stem	10.0																																				





**Appendix D**

**Monitoring Location  
(Air Quality, Noise and Water Quality)**



**Legend:**

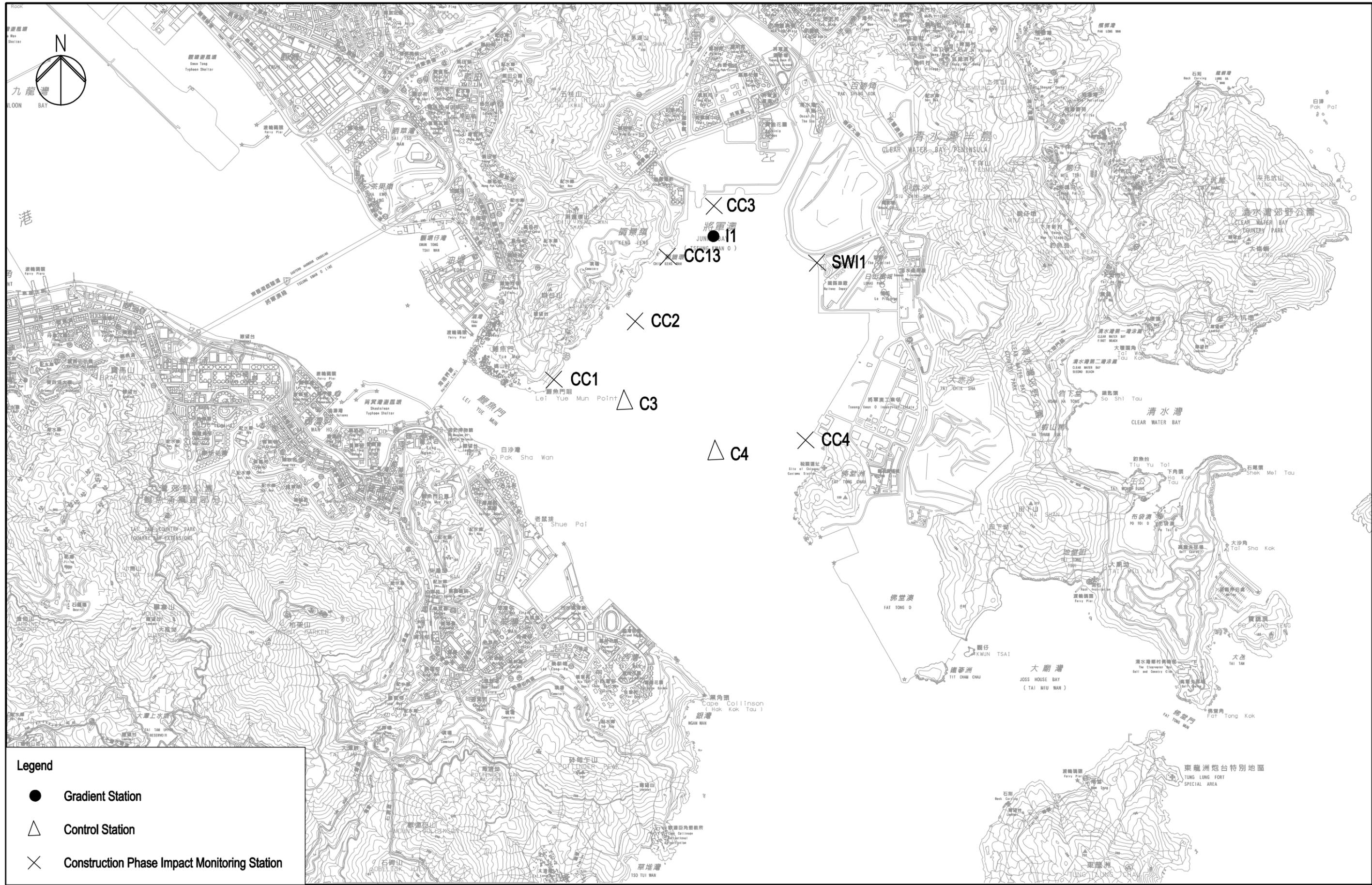
- Proposed Cross Bay Link
- Designated Monitoring Location
- Interim Alternative Monitoring Location

**Proposed Road D9**

**Site Office**

**Interim alternative monitoring location AM4 & CNMS-5**

**Interim alternative monitoring location AM5**



**Legend**

- Gradient Station
- △ Control Station
- × Construction Phase Impact Monitoring Station

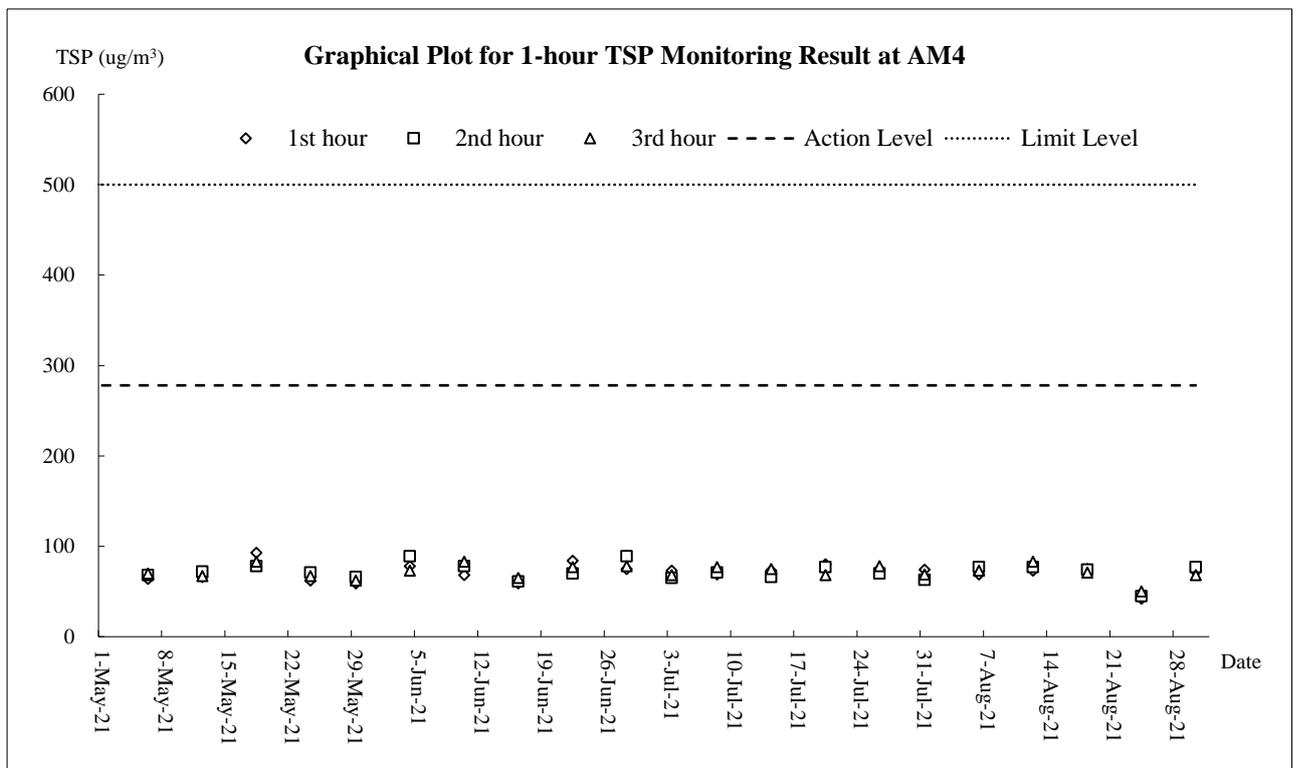
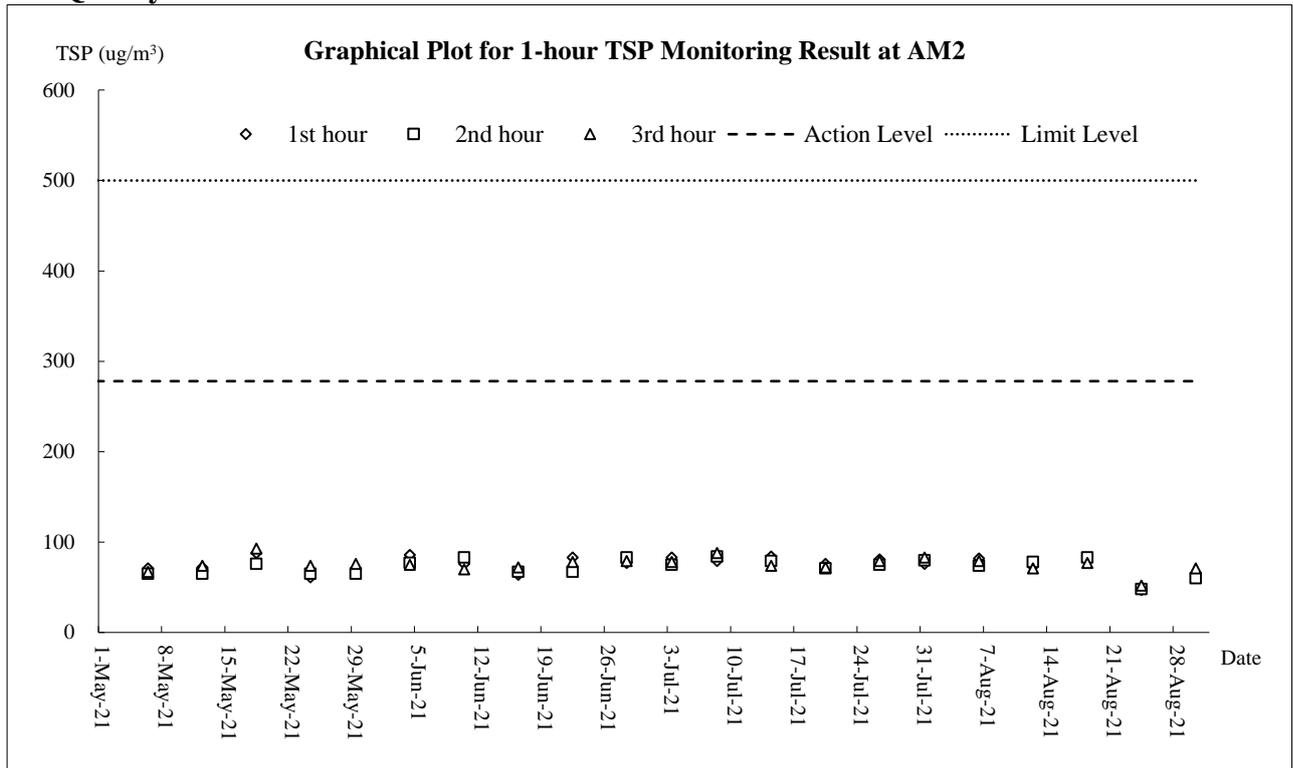
3/1/2013  
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 Drawn by: GL  
 Plotted by: JP

 <b>土木工程拓展署</b> Civil Engineering and Development Department	 <b>ARUP</b> Ove Arup & Partners Hong Kong Limited	Job Title <b>Agreement No. CE 43/2008(HY)</b> <b>Cross Bay Link, Tseung Kwan O - Investigation</b>	Drawing Title <b>Locations of Water Quality          Monitoring Stations</b>	Drawn GL Date 03/13	Checked JP Approved ST	Drawing No. <b>209506/EMA/WQ/001</b>	Status <b>FINAL</b>	Rev. <b>C</b>
				Scale 1:30000 (A3)			Description Date	
		THIRD ISSUE 03/13	SECOND ISSUE 01/13					
		FIRST ISSUE 03/11						

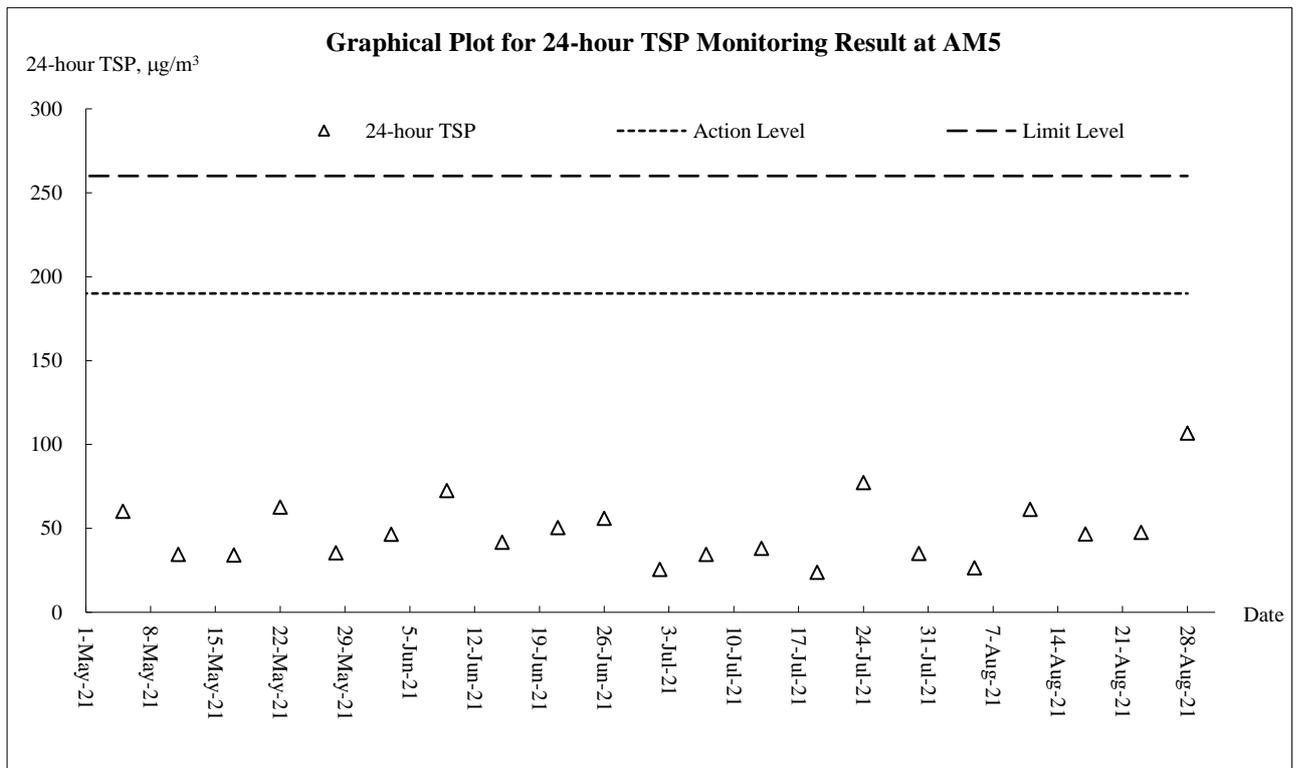
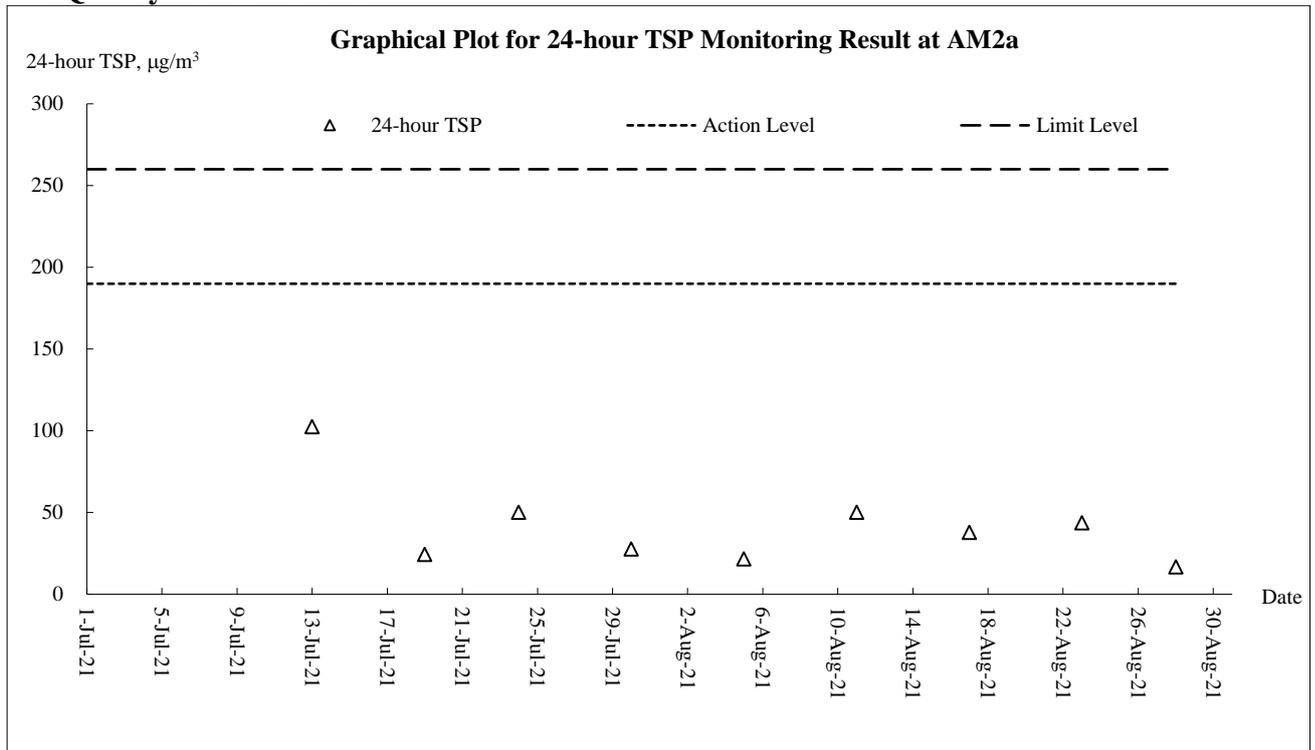
**Appendix E**

**Graphical Plots of Monitoring Results**

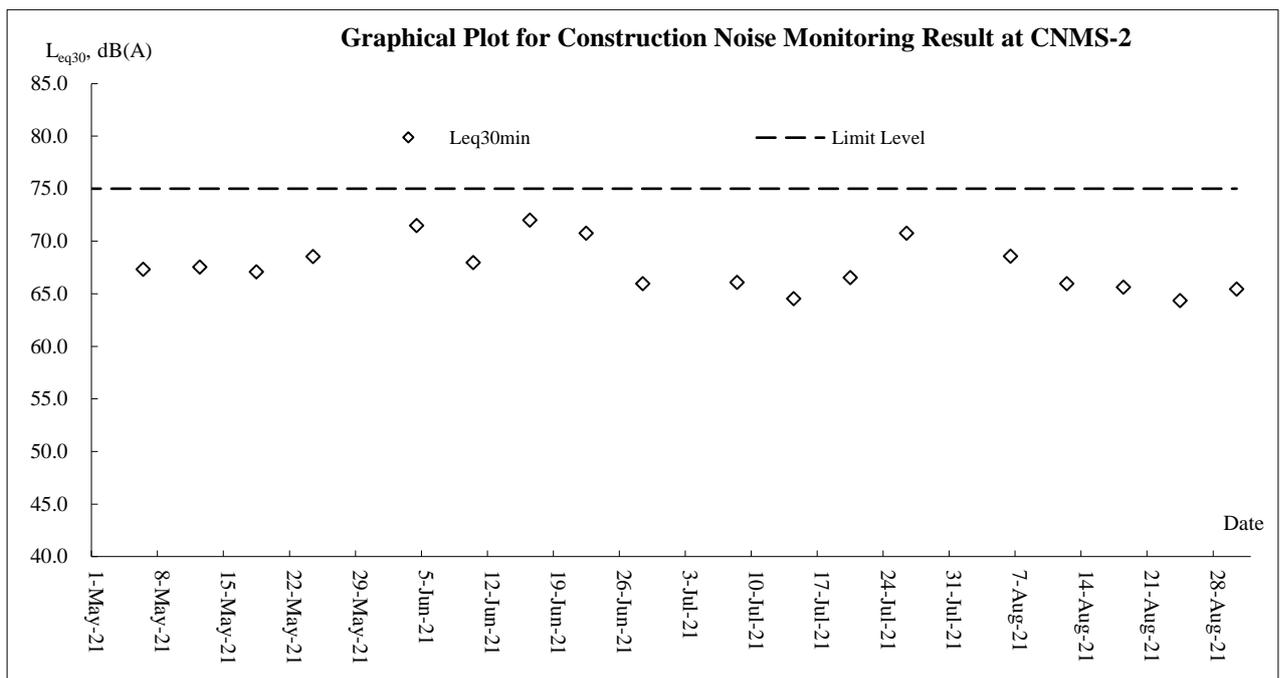
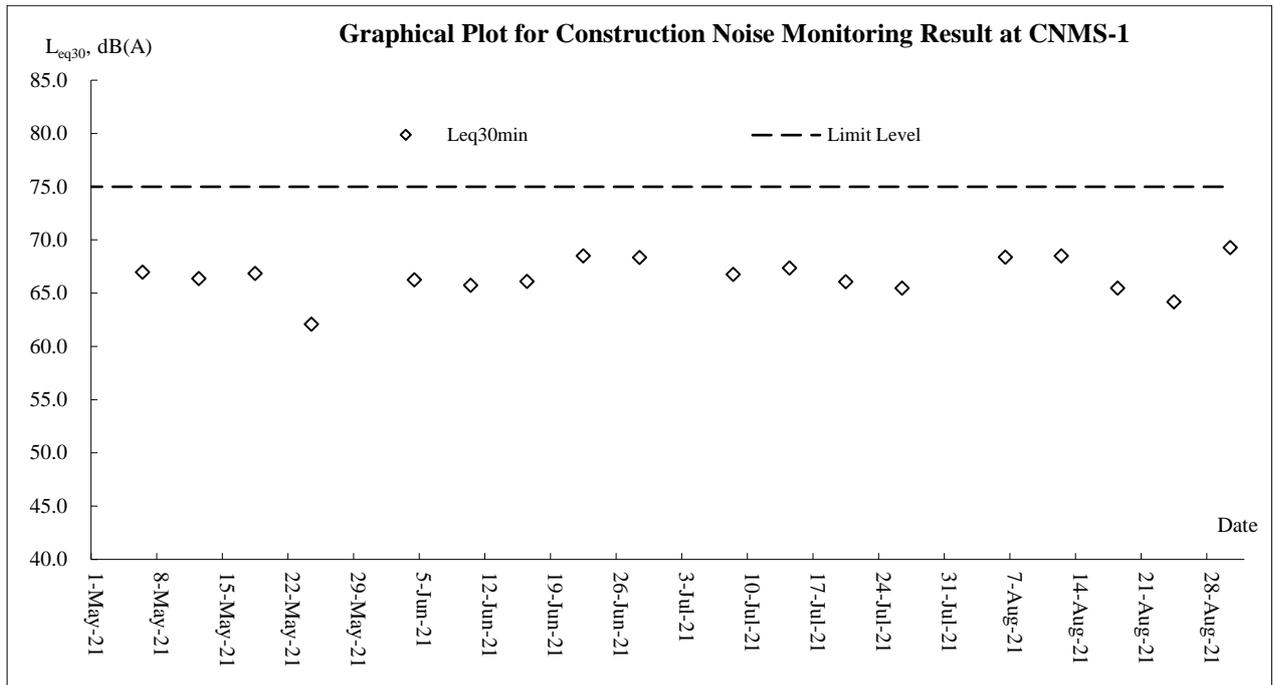
### Air Quality – 1 Hour TSP

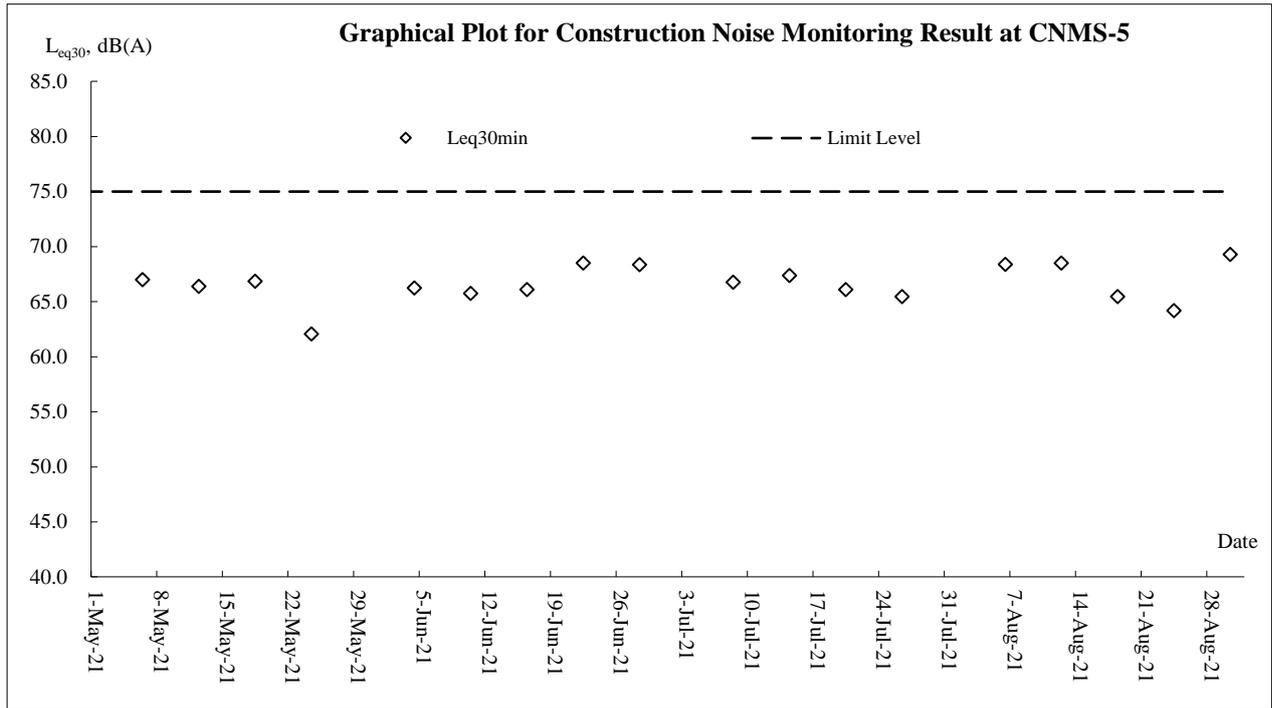


### Air Quality - 24-Hour TSP



### Construction Noise





## **Appendix F**

### **Meteorological Information**

### **The weather of June 2021**

June 2021 was marked by the long awaited rainy weather brought by tropical cyclone Koguma, troughs of low pressure and the active southwesterly airstream. The monthly rainfall of June 2021 was 628.0 millimetres, about 28 percent above the normal of 491.5 millimetres (or 38 percent above the 1981-2010 normal of 456.1 millimetres). The abundant rainfall in the month alleviated the very dry condition of Hong Kong in the last few months. The accumulated rainfall recorded in the first half of the year was 791.1 millimetres, a deficit of 27 percent compared to the normal of 1082.5 millimetres (or 28 percent below the 1981-2010 normal of 1096.9 millimetres). The month was also warmer than usual with a mean temperature of 28.8 degrees, 0.5 degrees above the normal figure of 28.3 degrees (or 0.9 degrees above the 1981-2010 normals). Mainly attributing to the well above normal temperatures in the previous four months, the first half of this year from January to June 2021 was exceptionally warm. The mean maximum temperature of 26.3 degrees, mean temperature of 23.3 degrees and mean minimum temperature of 21.3 degrees were all the highest on record for the same period.

### **The weather of July 2021**

Owing to the stronger than normal upper-air anticyclone over southern China, July 2021 was unusually hot in Hong Kong. The monthly mean minimum temperature of 27.7 degrees, monthly mean maximum temperature of 32.6 degrees and monthly mean temperature of 29.7 degrees were 0.8 degrees, 1.0 degree and 0.8 degrees above their corresponding normals (or 0.9 degrees, 1.2 degrees and 0.9 degrees above their corresponding 1981-2010 normals) and respectively the second, third and fourth highest on record for July. The monthly rainfall was 379.5 millimetres, slightly below the normal figure of 385.8 millimetres (or slightly above the 1981-2010 normal of 376.5 millimetres). The accumulated rainfall recorded in the first seven months of the year was 1170.6 millimetres, about 20 percent below the normal figure of 1468.2 millimetres (or 21 percent below the 1981-2010 normal of 1473.3 millimetres) for the same period.

### **The weather of August 2021**

August 2021 was characterized by cloudier than usual weather with localized heavy rain over parts of the New Territories. The mean amount of cloud in the month was 77 percent, 7 percent above the normal of 70 percent. As for monthly rainfall, while over 600 millimetres of rainfall were recorded in parts of the North District of the New Territories, the monthly rainfall recorded at the Observatory was 350.5 millimetres, about 23 percent below the normal figure of 453.2 millimetres (or 19 percent below the 1981-2010 normal of 432.2 millimetres). The accumulated rainfall recorded in the first eight months of the year was 1521.1 millimetres, about 21 percent below the normal figure of 1921.5 millimetres (or 20 percent below the 1981-2010 normal of 1905.5 millimetres) for the same period. The monthly mean temperature of 28.8 degrees was near the normal figure of 28.7 degrees (or 0.2 degrees above the 1981-2010 normal). Mainly attributing to the exceptionally hot weather in July 2021, the summer of this year from June to August was much hotter than usual. The mean temperature of 29.1 degrees was the sixth highest on record for the same period.

\*The detailed meteorological data for each successive day can be referred to in the Monthly EM&A Reports (Jun 2021, Jul 2021 and Aug 2021).

## **Appendix G**

### **Waste Flow Table**

## **Contract 1**

## Monthly Summary Waste Flow Table for 2021 (year)

Name of Person completing the record: Calvin So (EO)

Project : Cross Bay Link, TKO, Main Bridge and Associated Works

Contract No.: NE/2017/07

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m <sup>3</sup> )
Jan	0.132	0.000	0.000	0.000	0.132	0.000	0.000	0.113	0.000	0.000	0.399
Feb	0.108	0.000	0.000	0.000	0.108	0.000	0.000	0.186	0.000	0.000	0.351
Mar	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.099	0.000	0.000	0.512
Apr	0.018	0.000	0.000	0.000	0.018	0.000	0.000	0.121	0.000	0.000	0.283
May	0.576	0.000	0.000	0.000	0.576	0.000	0.000	0.103	0.000	0.000	0.278
Jun	1.170	0.000	0.000	0.000	1.170	0.000	0.000	0.210	0.000	0.000	0.437
Sub-total	2.064	0.000	0.000	0.000	2.064	0.000	0.000	0.832	0.000	0.000	2.259
Jul	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.155	0.000	0.000	0.204
Aug	0.018	0.000	0.000	0.000	0.018	0.000	0.000	0.170	0.000	0.000	0.157
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	2.142	0.000	0.000	0.000	2.142	0.000	0.000	1.157	0.000	0.000	2.620

Note:

1. For non-inert portion of C&D material, assume the density of 1 m<sup>3</sup> general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m<sup>3</sup> per each full-filled dump truck.
3. All values are round off to the third decimal places.

## **Contract 2**

**Monthly Summary Waste Flow Table for 2021 Year**

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Borken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (See note 3)	Chemical Waste	Other, e.g. general refuse
	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]
Jan	1.685	0.000	0.000	0.000	1.685	0.744	0.005	0.050	0.020	0.000	0.032
Feb	0.244	0.000	0.000	0.000	0.244	0.307	0.005	0.050	0.020	0.000	0.011
Mar	2.449	0.000	0.000	0.000	2.449	0.000	0.006	0.070	0.030	0.000	0.026
Apr	2.634	0.000	0.000	0.000	2.634	0.000	0.006	0.050	0.020	0.000	0.026
May	0.390	0.000	0.000	0.000	0.390	0.000	0.003	0.100	0.020	0.000	0.044
June	0.287	0.000	0.000	0.000	0.287	0.000	0.002	0.150	0.030	0.000	0.009
SUB-TOTAL	7.689	0.000	0.000	0.000	7.689	1.051	0.027	0.470	0.140	0.000	0.147
Jul	0.147	0.000	0.000	0.000	0.147	0.000	0.002	0.150	0.030	0.000	0.019
Aug	0.284	0.000	0.000	0.000	0.284	0.000	0.005	0.100	0.005	0.000	0.035
Sep											
Oct											
Nov											
Dec											
<b>TOTAL</b>	<b>8.120</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>8.120</b>	<b>1.051</b>	<b>0.034</b>	<b>0.720</b>	<b>0.175</b>	<b>0.000</b>	<b>0.200</b>

Note: Conversion to 1000m<sup>3</sup> for general refuse is weight in 1000kg multiply by 0.002

Conversion to 1000m<sup>3</sup> for Inert C&D is weight in 1000kg multiply by 0.0005

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

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

Assume the loaded volume of a dump truck for internal inert waste transfer is 17.9 m<sup>3</sup>

## **Appendix H**

### **Complaint Summary**

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
1	Not provided	14-Mar-19	Junk Bay	Unwilling to disclose	Marine Water	EPD	N08/RE/000074 32-19	The complainant said muddy water and mud was discharged from work barges under CBL between 7:00 - 10pm. The complainant said he observed the act during his recent fishing activities in the nearby area.	According to ET's investigation, Contractor of Contract 1 (CRBC) had provided proper water mitigation measures to minimize the water impact of marine piling work to the nearby waterbody. No abnormal and turbid water discharged from site was observed and no exceedance was recorded from the marine water impact quality monitoring. Nevertheless, the Contractor of Contract 1 was reminded to strictly implement all the water mitigation measures as stated in EP and EM&A Manual and ET will keep closely inspect the site condition in subsequent weekly site inspection. .
2	4-Jan-20	9-Jan-20	Wan O Road	Unwilling to disclose	Noise	CEDD	NA	The Complainant complained about the noise nuisance generated by road breaking work at Wan O Road	As advised by the Contractor of Contract 2 - NE/2017/08 (Build King), road breaking work was commenced at Wan O Road on 4 January 2020 morning. The work involved one road breaker to conduct the breaking activity which generate noise impact. Noise mitigation measure such as wrapped the head of the breaker with acoustic material was implemented on the day of complaint received to minimize the impact to resident nearby. Movable noise barrier was provided on site, but it was not adopted due to miscommunication of workers. Upon received the complaint on 4 January 2020, Build King has immediately adopted the movable noise barrier for road breaking work as noise mitigation measure to minimize the noise impact.
3	15-Jan-20	15-Jan-20	Wan O Road	Unwilling to disclose	Noise	CEDD	NA	The Complainant complained about the noise nuisance generated by road breaking work at Wan O Road	As advised by the Contractor, the movable noise barrier was not immediately adopted after relocation of the road breaker on 15 January 2020. Upon received the complaint, the Contractor has immediately adopted the noise barrier as noise mitigation measure for the road breaking work to minimize the noise impact. In addition, the Contractor has issued a warning letter to the relevant subcontractor for poor environmental performance and requested their worker to strictly implement the use of movable noise barrier. In order to prevent the incident happens again, ET also advised that the Contractor should dedicate a worker to ensure the noise barrier is implemented prior to road breaking activities.
4	25-Feb-20	26-Feb-20	Works Area A	Unwilling to disclose	Noise	CEDD	NA	The Complainant complained about the noise nuisance caused by hammering/chiseling works at Works Area A	As advised by the Contractor of Contract 1 - NE/2017/07 (CRBC), hammering/chiseling works for drilling platform maintenance was conducted at Works Area A on 25 February 2020 morning and no Powered Mechanical Equipment (PME) was involved. Upon received the complaint, CRBC has stopped the relevant work immediately. In order to minimize the noise nuisance caused by the hammering work, CRBC decided to relocate the hammering work from Works Area A to the marine working area which is far away from the residential areas. CEDD replied the complainant on 25 February 2020 and the complainant was satisfied with the proposed mitigation measure.
5	15-Mar-20	18-Mar-20	Junk Bay	Unwilling to disclose	Noise	EPD	NA	The Complainant complained about the construction noise from Junk Bay	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), their workers reported for duty around 08:00 on 15 March 2020. The workers were standby on a flat top barge in which a precast unit was temporarily stored and waited for the mobilization of crane barge to carry out lifting operation of the precast unit. No hammering work nor other noisy work activity was carried out on the flat top barge in the complaint period. In addition, no Powered Mechanical Equipment (PME) was used until the crane barge was mobilized for lifting operations between 15:00 and 19:00. RSS checked their own records and confirmed that there was no operation of PME in Junk Bay before 09:00 on 15 March 2020. The complaint was considered not related to the Project since there is no operation of PME during the complaint period.
6	2-Apr-20	7-Apr-20	Lohas Park Station Exit A and TKO Salt Water Pumping Station	Unwilling to disclose	Construction Dust	CEDD	NA	The Complainant complained about the dump truck tracking mud on the road adjacent to Lohas Park Station Exit A and TKO Salt Water Pumping Station at approximately 09:50 that morning.	Joint site inspection among the Supervisor, the Contractor, ET and IEC was also carried out on 8 April 2020 to inspect the environmental performance of the construction site. Proper wheel washing facilities was provided at the site entrance near the Lohas Park Station Exit A and all the vehicle were properly washed prior leaving the site. No tracking mud was observed at the complaint location during the site inspection. As advised by RSS, it is confirmed by MTRCL that the complaint location was under MTRCL management and the tracking mud issue was followed up by MTRCL.
7	20-Apr-20	6-May-20	Junk Bay	Lui Man Kwong, Member fo Sai Kung District Council	Noise	CEDD	TKO-MK-200421-(R)-1289	The Complainant complained about the noise nuisance generated by construction works from Junk Bay on 20 April 2020 around 6 a.m. to 7 a.m.	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), there was no marine work carried out at Junk Bay from 06:00 to 07:00 on 20 April 2020 as their workers reported for duty after 08:00 on that day. RSS checked their own records and confirmed that there was no marine work was carried out at Junk Bay before 08:00 on 20 April 2020.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
8	5-May-20	6-May-20	General	Unwilling to disclose	Construction Dust, Noise, Wastewater	CEDD	NA	The Complainant complained about the noise generated by evening works, the wastewater generated from site are not well treated, and the dust generation caused by the construction work.	During the regular joint site inspection among the Supervisor, the Contractor and ET carried out in the past few weeks, it was observed that construction dust and wastewater mitigation measures were implemented properly in both Contracts of the Project. In addition, according to the evening noise monitoring conducted in the past month, the evening noise measurement results were found within the range of the baseline noise monitoring results, which implies that the construction noise from evening works was insignificant. It is considered the complaint is not project related.
9	23-Jul-20	23-Jul-20	Junk Bay	Resident of Ocean Shores	Light Nuisance	CEDD	NA	The Complainant complained about the light nuisance caused by the 4000 tone crane barge during the evening on 22 July 2020.	According to the works schedule of Contract 1, no marine work was conducted on 22 July 2020 evening. The Contractor of Contract 1 (CRBC) advised that the illumination (e.g. flashlight, headlight) on the crane barge is required for safety reason - to keep the barge being visible and to avoid collision by other marine vessel. In order to minimize the light nuisance to the public, it is agreed by CRBC that the illumination on the crane barge will be kept to a minimum in the evening. It is considered the complaint is not project related.
10	28-Jul-20	28-Jul-20	Wan O Road	Resident of Lohas Park Phase 4	Noise	CEDD	NA	The complainant complained about the noise nuisance caused by breaking work at Wan O Road at approximately 10:00am on 28 July 2020.	As advised by the Contractor of Contract 2 – NE/201708 (Build King), breaking work was carried out at Wan O Road at the complaint period and movable noise barrier as noise mitigation measure was implemented during the road breaking work. Noise monitoring was conducted by Build King on 30 July 2020 during the breaking work, the monitoring result did not exceed the limit level 75dB(A) which revealed that the construction noise received at representative NSR were within acceptable level. Noise monitoring was also conducted by ET on 31 July 2020 and no limit level exceedance was record. It is considered the complaint is related to the Project. However, noise mitigation measure was implemented by Build King during the complaint period.
11	23-Jul-20	13-Aug-20	Junk Bay	Resident of Ocean Shores	Noise	EPD	NA	The Complainant complained about the noise nuisance caused by the 4000 tone crane barge during the restricted hours on 23 July 2020.	According to the works schedule of Contract 1, no marine work was conducted between 22 July 2020 19:00 and 23 July 2020 08:00. RSS checked their own records and confirmed that there was no marine work carried out at Junk Bay between 22 July 2020 19:00 and 23 July 2020 08:00. It is considered the complaint is not related to the Project since no marine work was carried out by CRBC during the reporting period
12	24-Aug-20	26-Aug-20	Junk Bay	Ocean Shores Owner's Committee Chairman Chan Kai Wai	Noise	CEDD	NA	The Complainant complained about the operation of derrick barge at Junk Bay on Sunday	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), working platform setup work was carried out at pier W4 on 23 August 2020. One derrick barge was used for lifting work between 09:00 - 11:30. During the working platform setting up work, only lifting of platform material was carried out by the derrick barge at V-pier W4. Bolt and nut tightening work for the working platform was then carried out by the workers at pier W4. No hammering work was carried out on 23 August 2020. According to the issued Construction Noise Permit (CNP) GW-RE0438-20, derrick barge (group A, D, E of the PME listed in condition 3a of the CNP) is allowed to be operated on general holiday (including Sunday) 09:00 – 20:00. The operation of the derrick barge on 23 August 2020 was within the permitted hours. It is considered the complaint is related to the Project. However, the Contractor did not breach the requirement stated in the issued CNP with the use of one derrick barge on Sunday and no noise nuisance should be generated by the bolt and nut tightening work performed on 23 August 2020.
13	24-Aug-20	26-Aug-20	Junk Bay	Mr Lee	Noise	CEDD	NA	The Complainant complained about the noise nuisance generated by hammering works on the derrick barge at Junk Bay on Sunday. He also enquiry whether the Construction Noise Permit will be displayed at the site entrance.	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), working platform setup work was carried out at pier W4 on 23 August 2020. One derrick barge was used for lifting work between 09:00 - 11:30. During the working platform setting up work, only lifting of platform material was carried out by the derrick barge at V-pier W4. Bolt and nut tightening work for the working platform was then carried out by the workers at pier W4. No hammering work was carried out on 23 August 2020. According to the issued Construction Noise Permit (CNP) GW-RE0438-20, derrick barge (group A, D, E of the PME listed in condition 3a of the CNP) is allowed to be operated on general holiday (including Sunday) 09:00 – 20:00. The operation of the derrick barge on 23 August 2020 was within the permitted hours. In addition, the issued CNP was displayed at the site entrance at Wan O Road for public inspection. It is considered the complaint is not related to the Project since no hammering work was carried out during the complaint period

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
14	14-Sep-20	15-Sep-20	Junk Bay	Unwilling to disclose	Water Quality	1823	NA	The Complainant complained about the suspected pollutant spilled at Junk Bay from the ro-ro barge of the Project	RSS noted the presence of the pollutant on 12 September 2020 at around 11:35 a.m. Trace of pollutant discharge was also found from the box culvert near the complaint location. Catch pits at the site office and at Wan O Road were checked once the pollutant was spotted on 12 September 2020. The catch pits were found clean and no pollutant discharge was found. In addition, no pollutant was observed during the operation of the ro-ro barge. Joint site inspection among the Site Supervisor, the Contractors and ET was carried out on 16 September 2020. No marine pollutant was spotted at the complaint location and from the box culvert. In addition, discharge points of Contract 2 at Wan O Road were inspected and no trace pollutant discharge was observed. The IR revealed that the complaint is not related to the Project since the source of pollutants in the box culvert should be outside the site area of the Project, and there is no trace of pollutant discharged from the construction site and the ro-ro barge.
15	20-Sep-20	21-Sep-20	Junk Bay	Unwilling to disclose	Noise	CEDD	NA	The Complainant complained about the noise nuisance generated from the construction work conducted on 20 September 2020 at Junk Bay	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), concrete disposal and tidy up work were carried out at pier W1 on 20 September 2020. One derrick barge was used for lifting of concrete debris and formwork at pier W1. No concrete breaking was carried out on 20 September 2020 morning and no electric breaker and backhoe was used. According to the issued Construction Noise Permit (CNP) GW-RE0438-20, derrick barge (group A, D and E of the PME listed in condition 3a of the CNP) is allowed to be operated on general holiday (including Sunday) 09:00 – 20:00. The operation of the derrick barge on 20 September 2020 was within the permitted hours. In the view of the works carried out on 20 September 2020, the operation of derrick barge is considered as the only noise source from Cross Bay Link Project and the noise impact should not be significant to the surrounding NSRs since the pier W1 is located far away (over 900m away to Ocean Shores). Investigation indicated that the complaint is unlikely related to the Project since the noise generated from the derrick barge should be insignificant as the marine work area is located far away from the surrounding NSRs.
16	18-Oct-20	27-Oct-20	Work Area A	Unwilling to disclose	Noise	EPD	NA	The Complainant complained about the noise nuisance generated by Power Mechanical Equipment such as bar bender and cutter at Works Area A (Working Area 2 of the CNP) at around 09:00 and 17:30 on 18 October 2020 (Sunday)	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), stainless steel rebar cutting work with the use of grinder was performed at the complaint location by two workers without notification to CRBC and RSS on 18 October 2020 at around 09:00 hours. The rebar cutting work was spotted by RSS at around 09:15 hours and was stopped immediately. No rebar cutting work was believed to be carried out at 17:30 hours as these two workers were off-duty at 17:00 hours. According to the issued CNP GW-RE0819-20, the use of grinder is not allowed to be operated at working area 2 during restricted hours. A permit to work system had been implemented to ensure Contractor and RSS were notified in advance of any construction work during restricted hours, but the information may not have been properly delivered to frontline staff. After the incident was happened, a series of follow-up action were implemented by CRBC to ensure no prohibited construction work would be performed during restricted hours. The IR revealed that the complaint is related to the Project since stainless steel rebar cutting work was performed with the use of grinder in the complaint period. However, this should be a single incident and CRBC has carried out follow-up action to prevent the incident to be happened again.
17	27-Nov-20	27-Nov-20	D9 Road	Unwilling to disclose	Noise	1823	NA	The Complainant complained about the noise nuisance and the mosquito issue generated from the construction site at D9 Road.	As advised by the Contractor of Contract 2 (Build King), pre-bored socketed H-piling work was carried out at Wan O Road near Lohas Park Phase 4 while no construction work was carried out at Wan O Road near Lohas Park Phase 2A on 27 November 2020. Noise mitigation measure such as erecting noise barrier was properly implemented by the Contractor during operation of pre-bored socket H-piling work near Lohas Park Phase 4. According to the recent noise monitoring event held at Lohas Park Phase 4 during the operation of the pre-bored socket H-piling work, the obtained monitoring result Leq30min is well below the noise criteria 75 db(A). This implies that the noise impact generated from the pre-bored socketed H-piling work should be acceptable at Lohas Park Phase 4. The IR revealed that the complaint is related to the Project. However, noise mitigation measure was implemented properly by the Contractor and no exceedance of noise monitoring result was recorded during the operation of the piling work. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise impact to the public.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
18	24-Dec-20	24-Dec-20	Wan O Road	SKDC member Mr. CHEUNG Mei Hung	Noise	EPD	NA	The complainant complained the construction works near Lohas Park Phase 4 started at 9am on weekdays and cause noise nuisance to the resident. He urge the Contractor to schedule noisy construction activities such as breaking and piling works to be carried out after 10am on weekdays and enhance the noise mitigation measures with a view to minimise the noise nuisance to the nearby residents.	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), pre-bored socketed H-piling (PBSH) work was carried out at Wan O Road in early December 2020 and was completed on 11 December 2020. No noisy construction activities such as breaking and piling work was carried out at the complaint location after the completion of PBSH work on 11 December 2020. In the view of minimizing the noise nuisance to the nearby residents, the Contractor will schedule the coming noisy construction work such as sheet piling works after 10 am on Saturday. However, in order to catch up with the construction progress, the noisy construction work will be scheduled after 9 am on weekdays (i.e. Monday to Friday). The IR revealed that the complaint is not related to the Project since no noisy construction work was carried out during the complaint period. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise
19	18-Jan-21	27-Jan-21	Wan O Road	SKDC member Mr. CHEUNG Mei Hung	Noise	EPD	NA	The complainant complained the construction works near Lohas Park Phase 4 cause noise nuisance to the resident. He urge the Contractor to start the noisy construction activities as late as possible on each working day and enhance the noise mitigation measures to minimise the noise nuisance to the nearby residents. He would also like to know when the noisy construction activities will be finished.	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), sheet piling work was carried out near Lohas Park Phase 4 at Wan O Road in January 2021. The sheet piling work was scheduled after 9am on weekdays (i.e. Monday to Friday) and after 10 am on Saturday in order to minimize the noise nuisance to the nearby residents. The sheet piling work at Wan O Road is expected to be finished at the end of February 2021. In addition, noise mitigation measures such as movable noise barrier and the use of QPME were implemented properly. The IR revealed that the complaint is related to the Project. However, noise mitigation measure was implemented properly by the Contractor and no exceedance of noise monitoring result was recorded during the operation of the piling work. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise impact to the public.
20	26-Feb-21	26-Feb-21	Wan O Road	Unwilling to disclose	Noise	CEDD	NA	The Complainant complained about the construction works near Lohas Park Phase 6 which cause noise nuisance to the resident.	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), concrete breaking work for seawall modification was carried out near Lohas Park Phase 6 at Road D9 during the complaint period. Noise mitigation measure such as erecting noise barrier was properly implemented by the Contractor during concrete breaking work near Lohas Park Phase 6. According to the recent noise monitoring event held at Lohas Park Phase 4 during concrete breaking work, the obtained monitoring result Leq30min is well below the noise criteria 75 db(A). This implies that the noise impact generated from the concrete breaking work should be acceptable at Lohas Park Phase 6. The IR revealed that the complaint is related to the Project. However, noise mitigation measure was implemented properly by the Contractor and no exceedance of noise monitoring result was recorded during the operation of the breaking work. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise impact to the public.
21	17-Mar-21	17-Mar-21	Road D9	Resident of Lohas Park	Dust	CEDD	NA	The Complainant complained about dust problem at construction site which cause nuisance to Lohas Park Resident	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), excavation and lateral support (ELS) work was carried out near Lohas Park Phase 2A and excavation work was carried out near Lohas Park Phase 6 during the complaint period. Dust mitigation measure such as water spraying at work area and installed water sprinkler system were properly implemented. The IR revealed that the complaint is related to the Project. However, dust mitigation measure was implemented properly by the Contractor and no exceedance of dust monitoring result was recorded during the complaint period. Nevertheless, the Contractor was reminded to implement the dust mitigation measures as far as practicable to reduce dust impact to the public.
22	10-Mar-21	18-Mar-21	Work Area A	Resident of Lohas Park 6	Noise	EPD	NA	The Complainant complained about the noise nuisance generated by hammering work at Works Area A between 07:00 and 07:30 on 10 March 2021.	According to the works schedule of Contract 1, no construction work was conducted at Works Area A on 10 March 2021 between 07:00 and 08:00. 3. RSS checked their own records and confirmed that there was no construction work carried out at Works Area A on 10 March 2021 between 07:00 and 08:00. The IR revealed that the complaint is not related to the Project since no construction work was carried out during the complaint period. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise
23	16-Mar-21	22-Mar-21	Junk Bay	Sai Kung District Council Member Mr. Lai Wai Tong	Noise	CEDD	NA	The complainant complained about the operation of working barge at Junk Bay at around 7 am in the morning which cause noise nuisance to nearby residents. He hope that the marine work can be started after 08:30 in order to reduce the nuisance to the residents.	According to the works schedule of Contract 1, all the marine work conducted between 15 and 20 March 2021 was commenced after 08:00 in the morning. No marine work was conducted between 07:00 and 08:00 from 15 to 20 March 2021. RSS checked their own records and confirmed that there was no marine work carried out between 07:00 and 08:00 from 15 to 20 March 2021. The IR revealed that the complaint is not related to the Project since no marine work was conducted during the complaint period. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise impact to the public.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
24	18-Mar-21	22-Mar-21	Junk Bay	Ocean Shores Owner's Committee Chairman Chan Kai Wai	Noise	CEDD	NA	The complainant complained about the operation of working barge at Junk Bay at around 7 am on 21 February 2021 in the morning which cause noise nuisance to nearby residents.	According to the works schedule of Contract 1, no marine work was conducted between 07:00 and 08:00 on 21 February 2021. In addition, all the marine works conducted recently around the complaint period (i.e. between 17 and 24 February 2021) were commenced after 08:00 in the morning. RSS checked their own records and confirmed that there was no marine work carried out between 07:00 and 08:00 on 21 February 2021, and from 17 to 24 February 2021.  The IR revealed that the complaint is not related to the Project since no marine work was conducted during the complaint period. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise impact to the public.
25	21-Mar-21	26-Mar-21	Junk Bay	Unwilling to disclose	Noise	1823	NA	The complainant complained about the operation of marine work on 21 March 2021 Sunday.	According to the works schedule of Contract 1, no marine work was conducted on 21 March 2021. RSS checked their own records and confirmed that there was no marine work carried out on 21 March 2021.  The IR revealed that the complaint is not related to the Project since no marine work was conducted during the complaint period. Nevertheless, the Contractor was reminded to implement the noise mitigation measures as far as practicable to reduce noise impact to the public.
26	12-Apr-21	16-Apr-21	Junk Bay	Unwilling to disclose	Water Quality	1823	NA	The Complainant complained about the marine water pollution caused by the Project.	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), backfilling work was carried out at Portion III and formwork erection work was carried out at Portion VII on 12 April 2021 near the complaint location (Photo 1 and 2). No concreting works was carried out on 12 April 2021 at Portion III and VII. According to the photo record provided by the complainant, no construction work which might potentially produce sewage/muddy water was observed at that location. In addition, it is observed the site surface at Portion III and Portion VII was dry on 12 April 2021 and no trace of surface runoff/wastewater direct discharge from site was observed.  The IR revealed that the complaint is not related to the Project since no sewage/muddy water would be generated by the construction work carried out at Portion III and Portion VII on 12 April 2021 and no trace of surface runoff/wastewater direct discharge was observed.
27	29-Apr-21	4-May-21	Work Area B	Unwilling to disclose	Noise	EPD	Complaint NCF-N08/RE/000103 99-21	The Complainant complained about the noise nuisance caused by the operation of an automatic rebar cutting machine. The Complainant would also like to know whether a noise impact assessment was done for the machine operation and the consequent follow-up action.	at Works Area B and will be operated when rebar cutting work is required. In order to assess the noise impact of the automatic rebar cutting machine, the Contractor has conducted noise monitoring during operation of the machine and the measured noise level did not exceed 75 dB (A) noise criteria. In addition, the Contractor has erected noise barrier for the machine operation at Works Area B as noise mitigation measure to reduce the noise impact to the nearby resident.  Although the IR revealed that the complaint is related to the Project, the Contractor has provided noise mitigation measure for the operation of automatic rebar cutting machine and no noise exceedance was recorded.
28	11-Jun-21	11-Jun-21	Wan O Road	Resident of Wings at Sea	Noise	ER	NA	The Complainant complained about the noise nuisance caused by the construction vehicles on 6 June 2021 at around 00:40 and 11 June 2021 at around 00:19.	No construction activity was carried out during the restricted hours on 6 and 11 June 2021. However, there were two vehicles entered Contract 2 site area at Wan O Road for parking without permission during the complaint period. In order to avoid similar incident in the future, the Contractor of Contract 2 has provided the following measures: As provided a specific tool box talk to the security company and his on-site guards regarding the site entering procedure for both people and vehicles especially during restricted hours. A warning letter was issued to the security company and sub-contractor to prevent the reoccurrence of this incident in future. Instructed security guards and sub-contractors not to arrange their vehicle entering the site during restricted hours. The IR revealed that complaint is related to Contract 2 of the Project. Upon received the complaint, the Contractor of Contract 2 has provided follow-up action to prevent the reoccurrence of this incident in future. Nevertheless, the Contractor was reminded to avoid any unnecessary activity during restricted hour in order to reduce noise impact to the public.
29	30-Jun-21	30-Jun-21	Junk Bay	Chan Kai Wai, Chairman of Ocean Shores	Noise	1823	NA	The Complainant complained about the operation of work barge at Junk Bay on Sunday 27 June 2021 at around 9:00.	Relocation of crane barge at Junk Bay from W5 to E7 which is within the working area 2 and 3 of the issued CNP with the use of tug boat was carried out on 27 June 2021 after 09:00. No PME operated before 09:00 on 27 June 2021. According to the issued CNP GW-RE0575-21, tug boat is allowed to operate in working area 2 and 3 between 0900 – 2200 hours during general holiday (including Sunday). During the relocation of crane barge by tug boat, there is no other operation at the working areas and on the crane barge which requires PME and may create noise nuisance during the complaint period. It is confirmed by RSS that only one group of powered mechanical equipment stated in the issued Construction Noise Permit (CNP) GW-RE0575-21 was used by CRBC during the crane barge relocation work and it was complied with the requirement under the CNP. The IR indicated that the complaint is related to Contract 1 of the Project. However, it is allowed to operate the tug boat on Sunday 0900 – 2200 hours according to the issued CNP and the Contractor has strictly followed the CNP requirement.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
30	30-Jun-21	2-Jul-21	Road D9	Resident of Lohas Park Phase 6	Water Quality	1823	NA	The Complainant complained about the muddy water observed construction site at Road D9 waterfront at 26 June 2021.	Formwork erection and rebar fixing work were carried out at Portion VI near Lohas Park Phase 4 on 26 June 2021. WetSep were provided as water mitigation measures by the Contractor to treat any wastewater and surface runoff prior to discharge. Although no wastewater was generated from the formwork erection and rebar fixing work, surface runoff was generated due to rainy weather. According to Contractor's record, all the surface runoff was treated by the WetSep prior to discharge and the WetSep was functioning properly on 26 June 2021. During the weekly inspection by ET on 23 June 2021, muddy water was also observed in Junk Bay being discharged from the box culvert (Photo 3). No muddy water discharged from site was found during the inspection. The IR revealed that the complaint is not related to the Project since all the wastewater generated was treated prior to discharge and the source of the muddy water was unlikely from the Project. Nevertheless, the Contractor was reminded to strictly implement the water mitigation measures for any works relating to seawall modification as far as practicable to avoid any water quality impact to the surrounding environment.
31	25-Jun-21	5-Jul-21	Junk Bay	Chan Kai Wai, Chairman of Ocean Shores	Light Pollution	1823	NA	The Complainant complained about the operation of work barge and light pollution on 25 June 2021 at 00:01.	No marine work was conducted on 24 June 2021 night time (23:00 – 07:00). The Contractor of Contract 1 (CRBC) advised that the illumination (e.g. flashlight, headlight) on the crane barge is required for safety reason - to keep the barge being visible and to avoid collision by other marine vessel. In order to minimize the light nuisance to the public, the Contractor has already kept the illumination on the crane barge to a minimum at night. The IR revealed that the complaint is related to the Project since the concern barge is belong to Contract 1 of the Project. However, no marine work was carried out at the complaint period and the illumination on the crane barge was kept to a minimum. Nevertheless, the Contractor were reminded to implement the environmental mitigation measures as far as practicable to reduce the environmental impact arise from the construction site.
32	11-Jul-21	14-Jul-21	Junk Bay	Unwilling to disclose	Noise	1823	NA	The Complainant complained about the operation of work barge at Junk Bay on Sunday 11 July 2021 at around 12:24 and queried whether construction noise permit was obtained.	Load test was carried out by a crane barge at Junk Bay at E2 which is within the working area 2 of the issued CNP. According to the issued CNP GW-RE0575-21, one crane barge is allowed to operate in working area 2 between 0900 – 2200 hours during general holiday (including Sunday). During the load test carried out by the crane barge, there is no other operation at the working area 2 which requires PME and may create noise nuisance during the complaint period. It is confirmed by RSS that only one group of powered mechanical equipment stated in the issued Construction Noise Permit (CNP) GW-RE0575-21 was used by CRBC during the load test and it was complied with the requirement under the CNP. The IR revealed that the complaint is related to Contract 1 of the Project. However, it is allowed to operate the crane barge on Sunday 0900 – 2200 hours according to the issued CNP and the Contractor has strictly followed the CNP requirement.
33	11-Jul-21	14-Jul-21	Junk Bay	Unwilling to disclose	Noise	1823	NA	The Complainant complained about the operation of work barge at Junk Bay on Sunday 11 July 2021 at around 12:18.	Load test was carried out by a crane barge at Junk Bay at E2 which is within the working area 2 of the issued CNP. According to the issued CNP GW-RE0575-21, one crane barge is allowed to operate in working area 2 between 0900 – 2200 hours during general holiday (including Sunday). During the load test carried out by the crane barge, there is no other operation at the working area 2 which requires PME and may create noise nuisance during the complaint period. It is confirmed by RSS that only one group of powered mechanical equipment stated in the issued Construction Noise Permit (CNP) GW-RE0575-21 was used by CRBC during the load test and it was complied with the requirement under the CNP. The IR revealed that the complaint is related to Contract 1 of the Project. However, it is allowed to operate the crane barge on Sunday 0900 – 2200 hours according to the issued CNP and the Contractor has strictly followed the CNP requirement.
34	11-Jul-21	15-Jul-21	Junk Bay	Unwilling to disclose	Noise	1823	NA	The Complainant complained about the operation of work barge at Junk Bay on Sunday 11 July 2021 at around 12:37 and queried whether construction noise permit was obtained.	Load test was carried out by a crane barge at Junk Bay at E2 which is within the working area 2 of the issued CNP. According to the issued CNP GW-RE0575-21, one crane barge is allowed to operate in working area 2 between 0900 – 2200 hours during general holiday (including Sunday). During the load test carried out by the crane barge, there is no other operation at the working area 2 which requires PME and may create noise nuisance during the complaint period. It is confirmed by RSS that only one group of powered mechanical equipment stated in the issued Construction Noise Permit (CNP) GW-RE0575-21 was used by CRBC during the load test and it was complied with the requirement under the CNP. The IR revealed that the complaint is related to Contract 1 of the Project. However, it is allowed to operate the crane barge on Sunday 0900 – 2200 hours according to the issued CNP and the Contractor has strictly followed the CNP requirement.
35	11-Jul-21	15-Jul-21	Junk Bay	Unwilling to disclose	Noise	EPD	NA	The Complainant complained about the operation of work barge at Junk Bay on Sunday 11 July 2021 at around 02:50 and queried whether construction noise permit was obtained.	No marine work was conducted on 11 July 2021 during the complaint period. The Contractor of Contract 1 (CRBC) advised that the illumination (e.g. flashlight, headlight) on the crane barge is required for safety reason - to keep the barge being visible and to avoid collision by other marine vessel. The IR revealed that the complaint is related to the Project since the concern barge is belong to Contract 1 of the Project. However, the complaint was considered not valid since no marine work was carried out at the complaint period. Nevertheless, the Contractor was reminded to strictly follow the requirement stated in the issued Construction Noise Permit if there is any construction work carried out in restricted hours.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action
36	16-Jul-21	20-Jul-21	Junk Bay	Unwilling to disclose	Noise	EPD	NA	The Complainant complained about the operation of work barge at Junk Bay on 16 July 2021 at around 01:00.	Welding work was conducted within the steel Arch Bridge in Junk Bay which is within the working area 3 of the issued CNP with the use of one welding machine and one generator during the complaint period. According to the issued CNP GW-RE0575-21, welding work is allowed to operate in working area 3 between 2300 – 0700 hours during any day. It is confirmed by RSS that only one group of powered mechanical equipment stated in the issued Construction Noise Permit (CNP) GW-RE0575-21 was used by CRBC during the welding work and it was complied with the requirement under the CNP. The IR revealed that the complaint is related to Contract 1 of the Project. However, it is allowed to operate the welding machine in working area 3 between 2300 – 0700 hours during any day according to the issued CNP and the Contractor has strictly followed the CNP requirement.
37	30-Aug-21	3-Sep-21	Junk Bay	SKDC member Mr. Cheung Mei Hung	Water Quality	EPD	N08/RE/000208 12-21	The Complainant complained about the polluting discharge suspected from the construction site of Cross Bay Link Project at about 18:00 28 August 2021 and about 10:00 on 29 August 2021	Formwork erection and rebar fixing work were carried out near Lohas Park Phase 6 on 28 August 2021 (Sat) (Photo 1) and no construction work was carried out on 29 August 2021 (Sun). No concreting work nor other construction works that may generate contaminated/muddy water was carried out near Lohas Park Phase 6 on 28 Aug 2021 (Sat) and on 29 August 2021 (Sun). According to the photo record provided by the complainant (Photo 2), no construction work which might potentially produce contaminated/muddy water and no trace of surface runoff/wastewater direct discharge from site was observed. The polluting discharged from the communal storm water drain should come from other sources. The IR revealed that the complaint is not due to the Project since no contaminated/muddy water would be generated by the construction work on 28 and 29 August 2021 and no trace of surface runoff/wastewater direct discharge was observed. Nevertheless, the Contractor was reminded to strictly implement the water mitigation measures on site as far as practicable to avoid any water quality impact to the surrounding environment.

**Appendix I**

**Implementation Schedule for  
Environmental Mitigation Measures**

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
<b>Dust Impact (Contraction Phase)</b>						
S5.5.5.1	Regular watering under good site practice shall be adopted. In accordance with the “Control of Open Fugitive Dust Sources” (USEPA AP-42), watering once per hour on exposed worksites and haul road is recommended to achieve dust removal efficiency of 91.7%.	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• APCO (Cap. 311); and</li> <li>• Air Pollution Control (Construction Dust) Regulation</li> </ul>
S5.5.5.3	<p>The following dust suppression measures shall also be incorporated by the Contractor to control the dust nuisance throughout the construction phase:</p> <ul style="list-style-type: none"> <li>• Any excavated or stockpiled dusty material shall be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>• Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads;</li> <li>• A stockpile of dusty material shall not extend beyond the pedestrian barriers, fencing or traffic cones;</li> <li>• The load of dusty materials on a vehicle leaving a construction site shall be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>• Where practicable, vehicle washing facilities with high pressure water jet shall 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 shall be paved with concrete, bituminous materials or hardcores;</li> <li>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high shall be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>• The portion of any road leading to the construction site that is within 30m of a vehicle entrance or exit shall be kept clear</li> </ul>	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• APCO (Cap. 311); and</li> <li>• Air Pollution Control (Construction Dust) Regulation</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	of dusty materials; <ul style="list-style-type: none"> <li>Surfaces where any pneumatic or power driven drilling, cutting, polishing or other mechanical breaking operation takes place shall be sprayed with water or a dust suppression chemical continuously;</li> <li>Any area that involves demolition activities shall be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting shall be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>Any skip hoist for material transport shall be totally enclosed by impervious sheeting;</li> <li>Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li> </ul>					
S5.5.5.4	For the barging facilities at the site compound, the following good site practice is required: <ul style="list-style-type: none"> <li>All road surfaces within the barging facilities shall be paved.</li> <li>Vehicles should pass through designated wheel wash facilities.</li> <li>Continuous water spray shall be installed at the loading point.</li> </ul>	Good construction site practices to control the dust impact on the nearby sensitive receivers to within the relevant criteria	Site compound	Contractor	Construction stage	<ul style="list-style-type: none"> <li>APCO (Cap. 311); and</li> <li>Air Pollution Control (Construction Dust) Regulation</li> </ul>
S5.5.5.5	An audit and monitoring programme during the construction phase should be implemented by the Contractor to ensure that the construction dust impacts are controlled to within the HKAQO. Detailed requirements for the audit and monitoring programmes are given separately in the EM&A manual.	Monitor the 1-Hour and 24-Hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period	Selected representative dust monitoring station (Drawing no. 209506/EMA/AIR/001)	Contractor	Construction stage	<ul style="list-style-type: none"> <li>APCO (Cap. 311); and</li> <li>Air Pollution Control (Construction Dust) Regulation</li> </ul>
<b>Noise Impact (Contraction Phase)</b>						

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
S6.6.4.3	Good site practice and noise management techniques: <ul style="list-style-type: none"> <li>• Only well-maintained plant shall be operated on-site and the plant shall be serviced regularly during the construction programme;</li> <li>• Machines and plant (such as trucks, cranes) that are in intermittent use shall be shut down between work periods or throttled down to a minimum;</li> <li>• Plant known to emit noise strongly in one direction, where possible, shall be orientated so that the noise is directed away from nearby NSRs;</li> <li>• Silencers or mufflers on construction equipment shall be properly fitted and maintained during the construction works;</li> <li>• Mobile plant shall be sited as far away from NSRs as possible and practicable; and</li> <li>• Material stockpiles, site office and other structures shall be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	To minimize construction noise impact arising from the Project on the affected NSRs	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIAO</li> </ul>
S6.6.4.5-6	Use of quiet powered mechanical equipment and working methods	Reduce noise levels of plant items	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIAO</li> </ul>
S6.6.4.7	Install site hoarding at the site boundaries between noisy construction activities and NSRs	Reduce the construction noise levels at low-level zone of NSRs through partial screening	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIAO</li> </ul>
S6.6.4.8-11	Use of temporary or movable noise barriers and full enclosure for relatively fixed plant source	Screen the noisy plant items to be used at all construction sites	For plant items listed in Table 6.7 and Appendix 6.1 of the EIA report at all construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIAO</li> </ul>
	Implement a noise monitoring programme under the EM&A manual	Monitor the construction noise levels at the selected representative locations	Selected representative noise monitoring stations ( <b>Drawing no. 209506/EMA/NS/001 &amp; 209506/EMA/NS/002</b> )	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIAO</li> </ul>
S6.7.3.1	Partial enclosures along Road D9 and application of low noise surfacing material along CBL and Road D9	To minimize road traffic noise impact arising from the CBL and Road D9 on the affected NSRs	CBL and Road D9 ( <b>Drawing no. 209506/EMA/NS/003</b> )	CEDD/ Contractor	During operational stage	<ul style="list-style-type: none"> <li>• Annex 5, TM-EIAO</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
<b>Water Quality Impact (Contraction Phase)</b>						
S8.6.4.3	<p>Marine Piling and Pile Excavation Works Marine piling and pile excavation works shall be undertaken in such a manner as to minimize re-suspension of sediments. Standard good practice measures shall be implemented, including the following requirements:</p> <ul style="list-style-type: none"> <li>• All marine piling and pile excavation works shall be conducted within a floating single silt curtain.</li> <li>• Mechanical closed grabs (with a size of 5m<sup>3</sup>) shall be designed and maintained to avoid spillage and should seal tightly while being lifted.</li> <li>• Barges shall have tight fitting seals to their bottom openings to prevent leakage of material.</li> <li>• Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes.</li> <li>• Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water. Barges shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.</li> <li>• Excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved.</li> <li>• Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action.</li> <li>• All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.</li> <li>• The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.</li> </ul>	To control potential impacts from marine piling and pile excavation works	During marine piling and pile excavation works	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>
S8.6.4.4	<p>Construction Site Runoff</p> <p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, shall include the following:</p> <ul style="list-style-type: none"> <li>• The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The</li> </ul>	Control potential water quality impacts from construction site run-off	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	<p>detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction;</p> <ul style="list-style-type: none"> <li>Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> shall be covered with tarpaulin or similar fabric during rainstorms. Measures shall be taken to prevent the washing away of construction materials, soil, silt or debris into any marine water bodies;</li> <li>All vehicles and plant shall be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities shall be provided at every construction site exit where practicable. Wash-water shall have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road shall be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains;</li> <li>Construction solid waste, debris and rubbish on site shall be collected, handled and disposed of properly to avoid water quality impacts;</li> <li>All fuel tanks and storage areas shall be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby; and</li> <li>Regular environmental audit on the construction site shall be carried out in order to prevent any malpractices. Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds.</li> </ul>					
S8.6.4.6	<p>Sewage from workforce</p> <ul style="list-style-type: none"> <li>Portable chemical toilets and sewage holding tanks shall be provided for handling the construction sewage generated by the workforce;</li> <li>A licensed contractor shall be employed to provide</li> </ul>	Control potential water quality impacts from sewage	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>TM-EIAO; and</li> <li>WPCO</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.					
	<b>Monitoring</b> Implement a marine water quality monitoring programme under the EM&A on level of suspended solids (SS) / turbidity and dissolved oxygen (DO) shall be carried out.	Control potential water quality impacts from marine piling and pile excavation works	Selected monitoring stations ( <b>Drawing no. 209506/EMA/WQ/001</b> )	Contractor	Construction station	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>
S8.7.3.2	<b>Operational phase – Runoff from road surface</b> Proper drainage systems with silt traps and oil interceptors shall be installed, maintained and cleaned at regular intervals.	Control potential water quality impacts from road surface runoff	CBL and Road D9	Contractor	Construction and operational stage	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>
<b>Waste Management (Contraction Phase)</b>						
S9.5.2	<b>Good Site Practices</b> Recommendations for good site practices: <ul style="list-style-type: none"> <li>• Nomination of an approved personnel to be responsible for the implementation of good site practices, arrangements for collection and effective deposal to an appropriate facility of all wastes generated at the site;</li> <li>• Training of site personnel in proper waste management and chemical handling procedures;</li> <li>• Provision of sufficient waste disposal points and regular collection for disposal;</li> <li>• Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre;</li> <li>• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and</li> <li>• Implementation of a recording system for the amount of wastes generated/recycled and disposal sites.</li> </ul>	Good site practices which ensure waste generated during construction phase is properly managed	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Waste Disposal Ordinance (Cap. 54);</li> <li>• ETWB TCW No. 19/2005</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
S9.5.4	<p><b>Waste Reduction Measures</b>                      Recommendations for achieving waste reduction include:</p> <ul style="list-style-type: none"> <li>• On-site reuse of any material excavated as far as practicable;</li> <li>• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal;</li> <li>• Collection of aluminum cans and waste paper by individual collectors during construction should be encouraged. Separately labelled recycling bins should also be provided to segregate these wastes from other general refuse by the workforce;</li> <li>• Recycling of any unused chemicals and those with remaining functional capacity as far as possible;</li> <li>• Prevention of the potential damage or contamination to the construction materials through proper storage and good site practices;</li> <li>• Planning and stocking of construction materials should be made carefully to minimize amount of waste generated avoid unnecessary generation of waste; and</li> <li>• Training on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling should be provided to workers.</li> </ul>	To reduce amount of waste generated during construction phase	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Waste Disposal Ordinance (Cap. 54);</li> <li>• ETWB TCW No. 19/2005</li> </ul>
S9.5.5-6	<p><b>Storage, Collection and Transportation of Waste</b>                      Recommendations for proper storage include:</p> <ul style="list-style-type: none"> <li>• Waste such as soil should be handled and stored well to ensure secure containment;</li> <li>• Stockpiling area should be provided with covers and water spraying system to prevent materials from being washed away and to reduce wind-blown litter; and</li> <li>• Different locations should be designated to stockpile each material to enhance reuse.</li> </ul> <p>With respect to the collection and transportation of waste from the construction works, the following is recommended:</p> <ul style="list-style-type: none"> <li>• Remove waste in a timely manner;</li> <li>• Employ trucks with cover or enclosed containers for waste transportations;</li> <li>• Obtain relevant waste disposal permits from the appropriate</li> </ul>	To reduce the environmental implications of improper storage	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Waste Disposal Ordinance (Cap. 54);</li> <li>• ETWB TCW No. 19/2005</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	authorities; and <ul style="list-style-type: none"> <li>Disposal of waste should be done at licensed waste disposal facilities.</li> </ul>					
S9.5.8-11	<p><b><u>C&amp;D Materials</u></b>                      The following mitigation measures shall be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>Carry out on-site sorting;</li> <li>Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified;</li> <li>Disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation;</li> <li>Standard formwork or pre-fabrication order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. 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; and</li> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance (Cap. 54);</li> <li>ETWB TCW No. 19/2005</li> <li>ETWB TCW No. 06/2010</li> </ul>
S9.5.13	<p><b><u>Excavated Marine Sediments</u></b>                      During transportation and disposal of the excavated marine sediments, the following measures shall be taken to minimize potential environmental impacts:</p> <ul style="list-style-type: none"> <li>Bottom opening of barges should be fitted with tight fitting</li> </ul>	To minimize potential impacts on water quality	All construction sites where applicable	Contractor	Construction stage	<ul style="list-style-type: none"> <li>ETWBTC (Works) No. 34/2002</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	<p>seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved;</p> <ul style="list-style-type: none"> <li>Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation;</li> <li>Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP; and</li> <li>Barges should not be filled to a level that would cause the overflow of materials or sediment-laden water during loading or transportation.</li> </ul>					
S9.5.14-17	<p>For those processes which generate chemical waste, the Contractor shall identify any alternatives that generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.</p> <p>If chemical waste is produced at the construction site, the Contractor is required to register with EPD as chemical waste producers. Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. Containers used for storage of chemical wastes shall:</p> <ul style="list-style-type: none"> <li>Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>Have a capacity of less than 450 L unless the specification have been approved by EPD; and</li> <li>Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.</li> </ul> <p>The storage area for chemical wastes shall:</p> <ul style="list-style-type: none"> <li>Be clearly labelled and used solely for the storage of chemical wastes;</li> <li>Be enclosed on at least 3 sides;</li> <li>Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;</li> </ul>	To ensure proper management of chemical waste	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal (Chemical Waste) (General) Regulation;</li> <li>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	<ul style="list-style-type: none"> <li>Have adequate ventilation;</li> <li>Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and</li> <li>Be arranged so that incompatible materials are adequately separated.</li> </ul> Disposal of chemical waste shall: <ul style="list-style-type: none"> <li>Be via a licensed waste collector; and</li> <li>Be to a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service and can supply the necessary storage containers; or</li> <li>Be to a re-user of the waste, under approval from EPD.</li> </ul>					
S9.5.18	<p><b>Sewage</b>                      An adequate number of portable toilets shall be provided for the on-site construction workers. Any waste shall be transferred to a sewage treatment works by a licensed collector.</p>	Proper handling of sewage from worker to avoid odour, pest and litter impacts	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance (Cap. 54)</li> </ul>
S9.5.19	<p><b>General Refuse</b>                      General refuse generated on-site shall be stored in enclosed bins or compaction units separately from construction and chemical wastes. Recycling bins shall also be provided to encourage recycling. A reputable waste collector shall be employed by the Contractor to remove general refuse from the site on a daily basis separately from the construction and chemical wastes. Burning of refuse on construction sites is prohibited by law.</p>	Minimize production of general refuse and avoid odour, pest and litter impacts	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>Waste Disposal Ordinance (Cap. 54)</li> </ul>
S10.7.2.4	Good Site Practices – The integrity and effectiveness of all silt curtains shall be regularly inspected. Effluent monitoring should be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect marine communities within Junk Bay	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>TM-EIAO; and</li> <li>WPCO</li> </ul>
S10.7.2.5	Site runoff control – For works on land, standard site runoff control measures will be established and strictly enforced to ensure that discharge of contaminated or silt-laden runoff into marine waters is minimized.	To minimize potential impacts on water quality and protect marine communities within Junk Bay	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>TM-EIAO; and</li> <li>WPCO</li> </ul>
S10.9.1.1	The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the marine communities inside Junk Bay.	To minimize potential impacts on water quality and protect marine	Selected monitoring stations ( <b>Drawing no. 209506/EMA/WQ/001</b> )	Contractor	Construction stage	<ul style="list-style-type: none"> <li>TM-EIAO; and</li> <li>WPCO</li> </ul>

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
		communities within Junk Bay				
S11.6.2.2	Good Site Practices: – The integrity and effectiveness of all silt curtains should be regularly inspected. Effluent monitoring shall be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>
S11.6.2.3	Site runoff control - For works on land, standard site runoff control measures will be established and strictly enforced to ensure that discharge of contaminated or silt-laden runoff is minimized.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>
S11.8.1.1	The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the fishery resources.	To minimize potential impacts on water quality and protect fishery resources	Selected monitoring stations ( <b>Drawing no. 209506/EMA/WQ/001</b> )	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• TM-EIAO; and</li> <li>• WPCO</li> </ul>
<b>Landscape and Visual</b>						
S13.8.1.2	The following mitigation measures should be implemented in the construction stage <ul style="list-style-type: none"> <li>• CM1 – The construction area and contractor’s temporary works areas should be minimized to avoid impacts on adjacent landscape.</li> <li>• CM2 – Reduction of construction period to practical minimum.</li> <li>• CM3 – Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where the soil material meets acceptable criteria and where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate.</li> <li>• CM4 – Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor’s works areas. (Tree protection measures will be detailed at Tree Removal Application stage).</li> </ul>	Minimize effects of landscape and visual impacts	Work site/during construction	Funded and implemented by CEDD	Construction stage	

EIA Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation		Requirements and/or Standards to be Achieved
				Agent	Stage	
	<ul style="list-style-type: none"> <li>• CM5 – Trees unavoidably affected by the works shall be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.</li> <li>• CM6 – Advance screen planting to proposed roads and associated structures.</li> <li>• CM7 – hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone).</li> <li>• CM8 – Screening of construction works by hoardings/noise barriers around works area in visually unobtrusive colours, to screen Works.</li> <li>• CM9 – Control night-time lighting and glare by hooding all lights.</li> <li>• CM10 – Ensure no run-off into water body adjacent to the Project Area.</li> <li>• CM11 – Avoidance of excessive height and bulk of buildings and structures</li> </ul>					
S13.8.1.2	OM1 – Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.	Minimize effects of landscape and visual impacts	Within the site boundary of the proposed works	Funded and implemented by CEDD. Maintained by CEDD and LCSD.	Design, construction and operational stages	
S13.8.1.2	The following mitigation measures should be implemented in the operational stage: <ul style="list-style-type: none"> <li>• OM2 – A continuous belt of screen planting along the roads. Planting of the belt of trees shall be carried out as advance works ahead of other site formation and building works.</li> <li>• OM3 – Maximise soft landscape of the site, where space permits, roadside berms /slope treatment works should be created.</li> <li>• OM4 – During detailed design, refine structure layout to create a planting strips along the roads to enhance greenery.</li> <li>• OM5 – Use appropriate (visually unobtrusive and</li> </ul>	Minimize effects of landscape and visual impacts	CBL and Road D9/during construction and operation	Funded and implemented by CEDD. Maintained by CEDD and LCSD.	Design, construction and operational stages	

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				Agent	Stage	
	non-reflective) building materials and colours, and aesthetic design in built structures. <ul style="list-style-type: none"> <li>• OM6 – Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimizes potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill.</li> <li>• OM7 – Avoidance of excessive height and bulk of buildings and structures</li> </ul>					
<b>Landfill Gas</b>						
S14.7.5	Precautionary measures The following guidance has been extracted from the EPD’s Landfill Gas Hazard Assessment Guidance Note Guidance to ensure a robust and comprehensive set of measures to protect workers are provided. <ul style="list-style-type: none"> <li>• During all works, safety procedures shall be implemented to minimize the risks of fires and explosions, asphyxiation of workers (especially in confined space) and toxicity effects resulting from contact with contaminated soils and groundwater.</li> <li>• Safety officers who are specifically trained with regard to LFG and leachate related hazards and the appropriate actions to take in adverse circumstances shall be present on all worksites throughout the works.</li> <li>• All personnel who work on site and all visitors to the site shall be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it.</li> <li>• Those staff who work in, or have responsibility for “at risk” areas, including all excavation workers, supervisors and engineers working within the consultation zone, shall receive appropriate training on working in areas susceptible to LFG hazards.</li> <li>• Enhanced personal hygiene practices including washing thoroughly after working and eating only in “clean” areas shall be adopted where contact may have been made with any groundwater which is thought to be contaminated with</li> </ul>	Health and safety of the workers	Construction sites within 250m Consultation Zone (Drawing no. 209506/EMA/LFG/001)	Contractor	Construction stage	<ul style="list-style-type: none"> <li>• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)</li> </ul>

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				Agent	Stage	
	<p>leachate.</p> <ul style="list-style-type: none"> <li>• Ground level construction plant shall be fitted with vertical exhausts at least 0.6m above ground level and with spark arrestors.</li> <li>• During piping assembly or ducting construction, all valves/seals shall be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping /ducting shall be capped at the end of each working day.</li> <li>• Mobile offices, equipment stores, mess rooms etc. shall be located on an area which has been proven to be gas free (by survey with portable gas detectors) and ongoing monitoring shall be carried out to ensure that these areas remain gas free. Alternatively, such buildings shall be raised clear of the ground. If buildings are raised clear of the ground, the minimum, clear separation distance (as measured from the highest point on the ground surface to the underside of the lowest floor joist) shall be 500mm. However, in this case, it is highly recommended that all the site offices, equipment stores and mess rooms should be located outside the 250m Consultation Zone.</li> <li>• Smoking and naked flames shall be prohibited within confined spaces. “No Smoking” and “No Naked Flame” notices in Chinese and English shall be posted prominently around the construction site. Safety notices shall be posted warning of the potential hazards.</li> <li>• Welding, flame-cutting or other hot works may only be carried out in confined spaces when controlled by a “permit to work” procedure, properly authorized by the Safety Office. The permit to work procedure shall set down clearly the requirements for continuous monitoring of methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure shall also require the presence of an appropriately qualified person who shall be responsible for reviewing the gas measurements as they are made, and who shall have executive responsibility for suspending the work in the event of</li> </ul>					

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				Agent	Stage	
	<p>unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise shall be permitted to carry out hot works in confined areas.</p> <ul style="list-style-type: none"> <li>During the construction works, adequate fire extinguishers and breathing apparatus sets shall be made available on site and appropriate training given in their use.</li> </ul>					
S14.7.6	<p><b>Landfill gas monitoring</b>                      The following monitoring shall be undertaken when construction works are carried out in confined space within the 250m Consultation Zone:</p> <ul style="list-style-type: none"> <li>The works area shall be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring requirements and procedures specified in Paragraphs 8.23 to 8.28 of EPD's Guidance Note shall be followed. The monitoring frequency and areas to be monitored shall be set down prior to commencement of the works. Depending on the results of the measurements, actions required will vary. As a minimum these shall encompass the actions specified in Table 14.6 of the EIA report.</li> <li>When portable monitoring equipment is used, the frequency and areas to be monitored should be set down prior to commencement of the works either by the Safety Officer or by an appropriately qualified person.</li> <li>All measurements shall be made with the monitoring tube located not more than 10mm from the surface.</li> <li>A standard form, detailing the location, time of monitoring and equipment used together with the gas concentrations measured, shall be used when undertaking manual monitoring to ensure that all relevant data are recorded.</li> <li>If methane (flammable gas) or carbon dioxide concentrations are in excess of the trigger levels or that of oxygen is below the level specified in the Emergency Management in the following section, then evacuation shall be initiated.</li> </ul>	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	<ul style="list-style-type: none"> <li>Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)</li> </ul>
S14.7.8-9	<p><b>Emergency management</b>                      In the event of the trigger levels specified in Table 14.6 of the EIA report being exceeded, a person, such as the Safety</p>	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	<ul style="list-style-type: none"> <li>Landfill Gas Hazard Assessment</li> </ul>

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				Agent	Stage	
	<p>Officer, shall be nominated, with deputies, to be responsible for dealing with any emergency which may occur due to LFG.</p> <p>In an emergency situation the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas.</p>					<p>Guidance Note (EPD/TR8/97)</p>
S14.7.16	<p><b>Protection measures – Operational phase</b></p> <ul style="list-style-type: none"> <li>• An assumed presence of landfill gas shall be adopted at all times by maintenance workers;</li> <li>• all maintenance workers inspecting any manhole shall be fully trained in the issue of LFG hazard;</li> <li>• any manhole which is large enough to permit to access to personnel shall be subject to entry safety procedure;</li> <li>• Code of Practice on Safety and Health at Work in Confined Spaces shall be followed to ensures compliance with the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance;</li> <li>• a strictly regulated “work permit procedure” shall be implemented and the relevant safety procedures must be rigidly followed; and</li> <li>• Adequate communication with maintenance staff shall be maintained with respect to LFG.</li> </ul>	Health and safety of the workers	Utility maintenance areas within 250m Consultation Zone/during operational period	Utility companies	Operational stage	<ul style="list-style-type: none"> <li>• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and</li> <li>• Code of Practice on Safety and Health at Work in Confined Space</li> </ul>
S14.7.17	<p><b>General recommended precautionary &amp; protection measures – Operational phase</b></p> <p>LGF surveillance exercise shall be undertaken by the utility companies at the utility manholes/inspection chambers. The surveillance exercise shall be undertaken for the duration of the site occupancy, or until such time that EPD agree that surveillance is no longer required and this shall be based on all the available monitoring data for methane, carbon dioxide and oxygen.</p>	Health and safety of the workers	Utility maintenance areas within 250m Consultation Zone/during operational period	Utility companies	Operational stage	<ul style="list-style-type: none"> <li>• Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and</li> <li>• Code of Practice on Safety and Health at Work in Confined Space</li> </ul>