

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**
(MARCH TO MAY 2022)

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

Date	Reference No.	Prepared By	Certified By
1 August 2022	TCS00975/18/600/R0638v2	 Martin Li (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	15 July 2022	First Submission
2	1 August 2022	Amended As Per IEC's comment on 1 August 2022



Our ref: PL-202208002

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

2 August 2022

Dear Sir,

Contract No. NE/2017/07 & NE/2017/08
Cross Bay Link, Tseung Kwan O
Quarterly EM&A Report for March to May 2022

I refer to the email of the ET concerning the Quarterly EM&A Report for March to May 2022 (Version 2) with Ref. No. TCS00975/18/600/R0638v2. We have no adverse comment on it and verify the captioned monthly report according to Conditions 1.9 and 4.4 of Environmental Permit with No. EP-459-2013.

Yours faithfully,



Li Wai Ming Kevin
Independent Environmental Checker

cc. Mr. T.W. TAM (ETL)
Ms. Sheri S.Y. LEUNG (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 14th Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 March 2022 to 31 May 2022 (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		102
	24-Hr TSP		34
Construction Noise	Leq (30min) Daytime		42
	Leq (5min) Evening ^(Note 1)		0
	Leq (5min) Night ^(Note 1)		0
Water Quality	Marine Water Sampling ^{(Note 2) (Note 3)}		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. For construction noise monitoring, two noise complaints 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 _{30min} Daytime	2	0	Not Project Related	--
	Leq _{5min} Evening	0	0	--	--
	Leq _{5min} Night	0	0	--	--
Water Quality (Marine Water)	DO	0	0	--	--
	Turbidity	0	0	--	--
	SS	0	0	--	--

ENVIRONMENTAL COMPLAINT

ES06 Three (3) environmental complaints were 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 March 2022 – 31 May 2022	1	2	27	Noise	Not related
	2	1	17	Water	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 March 2022 – 31 May 2022	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 March 2022 – 31 May 2022	1	0	0	NA	NA
	2	0	0	NA	NA

SITE INSPECTION BY EXTERNAL PARTIES

ES08 No site inspection was undertaken by EPD and AFCD within the Reporting Period.

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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 **21st September 2018** and **13th 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 **19th November 2018** for endorsement.

1.1.4 This is the **14th** Quarterly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 March 2022** to **31 May 2022** (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:-

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

- Precast segment fabrication, shell installation for Portion I.
- Erection for bridge segment for Main Bridge at Portion I
- Piling Work for Portion I.
- E&M work and External Work at Portion V.
- Touch up painting and painting of east and west side spans ring weld.
- Welding of L3 parapet base plated on steel bridge.
- Waterproofing works for division area, footpath area and cycle track area for steel bridge.
- Top tension and transverse tension, bottom tension, and external tension at Portion II.
- Construction of long stitching and planter wall at Portion II.
- Concrete surrounding for ducting at Portion II.

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

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

- UU Diversion
- Road Work along Wan Po Road
- Excavation and Demolition of existing wave wall at Portion I
- Monitoring and Instrumentation works
- RC construction for U-trough at Portion III, parapet at elevated deck
- RC construction for lift shaft and stair case
- TCSS Cross road ducts installation at Wan Po Road
- Modification of Type 1 Wave wall
- Drainage work at Portion I, III
- RC Construction of foundation at Wan O Road
- Deck construction at cycle track ramp
- Utilities installation along At Grade Road
- SENB installation at At-Grade Road, Portion III, U-trough

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"> 1-hour TSP by Real-Time Portable Dust Meter; and 24-hour TSP by High Volume Air Sampler
Noise	<ul style="list-style-type: none"> Leq (30min) in six consecutive Leq(5 min) between 07:00-19:00 on normal weekdays Supplementary information for data auditing, statistical results such as L₁₀ and L₉₀ shall also be obtained for reference.
Water Quality	<ul style="list-style-type: none"> In-situ measurement – Dissolved Oxygen (DO) concentration (mg/L) & saturation (%), pH, Salinity (mg/L), Temperature (°C) and Turbidity (NTU); and Laboratory analysis – SS (mg/L)

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 29th 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 19th 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_{eq} , L_{10} & L_{90})	Podium of Lohas Park Package 4
CNMS-2	Noise (L_{eq} , L_{10} & L_{90})	Lohas Park Package 6
CNMS-5	Noise (L_{eq} , L_{10} & L_{90})	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	Sensitive Receiver – Coral Sites at Chiu Keng Wan
CC2	844076	817091	Sensitive Receiver – Coral Sites at Junk Bay
CC3	844606	817941	Sensitive Receiver – Coral Sites at Junk Island
CC4	845444	815595	Sensitive Receiver – Coral Sites at Fat Tong Chau West
CC13	844200	817495	Sensitive Receiver – Coral Sites at Junk Bay near Chiu Keng Wan
SWI1	845512	817442	Sensitive Receiver – Tseung Kwan O Salt Water Intake
C3	843821	816211	Control Station (Ebb Tide) – within Junk Bay
C4	844621	815770	Control Station (Flood Tide) – within Junk Bay
II	844602	817675	Gradient Station – 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 (Leq _{30min})
	Time Period: 0700-1900 hours on normal weekdays	
CNMS-1 CNMS-2 CNMS-5	When one or more documented complaints are received	75 dB(A)
	Time Period: 1900-2300 hours on all days (Leq_{15min})	
	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 tide of the same day (Control Station C3 at Ebb tide and Control Station C4 at Flood tide), whichever is higher	9.3	OR 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	9.0		9.2	
CC3	8.2		9.0	
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	OR 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	OR 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, **102** sessions of 1-hour TSP and **34** 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	61	101	88	/		
Record Date	2-Mar-22	8-Mar-22	51 events			
AM2a	/			25	117	53
Record Date				17-Feb-22	18-Mar-22	17 events
AM4	48	116	70	/		
Record Date	6-Apr-22	14-Mar-22	51 events			
AM5	/			14	125	65
Record Date				25-Apr-22	18-Mar-22	17 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	60.4	73.9	62.1
Record Date	20-Apr-22	30-May-22	14 sessions
CNMS-2	53.4	69.5	60.9
Record Date	2-Mar-22	12-May-22	14 sessions
CNMS-5	58.6	70.0	63.0
Record Date	8-Mar-22	12-May-22	14 sessions

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

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
		Mar 2022	Apr 2022	May 2022	
Total Generated C&D Materials (Inert) (in '000m ³)	1	0.306	0.126	0.054	TKO 137
	2	0.298	0.348	0.251	
Reused in this Project (Inert) (in '000m ³)	1	0	0	0	-
	2	0	0	0	-
Reused in other Projects (Inert) (in '000m ³)	1	0	0	0	-
	2	0	0	0	-
Disposal as Public Fill (Inert) (in '000m ³)	1	0.306	0.126	0.054	TKO 137
	2	0.298	0.348	0.251	
Imported Fill ('000m ³)	1	0	0	0	-
	2	0.780	0.567	0.422	-

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

Type of Waste	Contract No	Quantity			Disposal Location
		Mar 2022	Apr 2022	May 2022	
Recycled Metal ('000kg)	1	0	0	0	-
	2	0	0	0	
Recycled Paper / Cardboard Packing ('000kg)	1	0.163	0.182	0.194	Licensed collector
	2	0	0	0	
Recycled Plastic ('000kg)	1	0	0	0	-
	2	0	0	0	
Chemical Wastes ('000kg)	1	0	0	0	-
	2	0	0	0	
General Refuses ('000m ³)	1	0.750	0.552	0.600	NENT
	2	0.072	0.067	0.110	

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
March 2022	2, 9, 17, 23 & 31 March 2022	7	Completed
April 2022	6, 13, 20 & 27 April 2022	5	Completed
May 2022	4, 11, 20 & 25 May 2022	1	Completed

6.2.2 In the Reporting Period, no non-compliance was recorded for Contract 1; however, **13** 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
March 2022	2, 9, 17, 23 & 31 March 2022	3	Completed
April 2022	6, 13, 20 & 27 April 2022	3	Completed
May 2022	4, 11, 20 & 25 May 2022	1	Completed

6.2.4 In the Reporting Period, no non-compliance was recorded for Contract 2; however, **7** 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"> • Post “No Smoking” signs • Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. >1% by volume)	<ul style="list-style-type: none"> • Stop excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon dioxide	>0.5%	<ul style="list-style-type: none"> • Ventilate to restore carbon dioxide to <0.5%
	>1.5%	<ul style="list-style-type: none"> • Stop excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore carbon dioxide to <0.5%
Oxygen	<19%	Ventilation to restore oxygen >19%
	<18%	<ul style="list-style-type: none"> • Stop excavation works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%

- 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 72 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
Methane	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	0.0%	0.0%
Oxygen	<19%	<18%	20.3%	21.1%
Carbon Dioxide	>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, three (3) environmental complaints were received with respect to the noise nuisance and water quality 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 – 31 March 2022	1	0	25	NA
1 – 30 April 2022		1	26	Noise
1 – 31 May 2022		1	27	Noise
1 – 31 March 2022	2	0	16	NA
1 – 30 April 2022		0	16	NA
1 – 31 May 2022		1	17	Water

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 March 2022	1	0	0	NA
1 – 30 April 2022		0	0	NA
1 – 31 May 2022		0	0	NA
1 – 31 March 2022	2	0	0	NA
1 – 30 April 2022		0	0	NA
1 – 31 May 2022		0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 March 2022	1	0	0	NA
1 – 30 April 2022		0	0	NA
1 – 31 May 2022		0	0	NA
1 – 31 March 2022	2	0	0	NA
1 – 30 April 2022		0	0	NA
1 – 31 May 2022		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"> • Regularly to maintain all plants, so only the good condition plants were used on-site ; • If possible, all mobile plants onsite operation has located far from NSRs; • When machines and plants (such as trucks) were not in using, it was switched off; • Wherever possible, plant was prevented oriented directly the nearby NSRs; • Provided quiet powered mechanical equipment to use onsite; • Weekly noise monitoring was conducted to ensure construction noise meet the criteria.
Air Quality	<ul style="list-style-type: none"> • Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet; • The construction plants regularly maintained to avoid the emissions of black smoke; • The construction plants switched off when it not in use; • Water spraying on haul road and dry site area was provided regularly; • Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting; and • Before any vehicle leaving the works site, wheel watering has been performed.
Water Quality	<ul style="list-style-type: none"> • Debris and refuse generated on-site collected daily; • Oils and fuels were stored in designated areas; • The chemical waste storage as sealed area provided; • 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 • Portable chemical toilets were provided on-site. A licensed contractor was regularly disposal and maintenance of these facilities. • Silt curtain was installed and maintained in accordance with EP condition
Waste and Chemical Management	<ul style="list-style-type: none"> • Excavated material reused on site as far as possible to minimize off-site disposal. • Scrap metals or abandoned equipment should be recycled if possible; • Waste arising kept to a minimum and be handled, transported and disposed of in a suitable manner; • Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; and • Chemical waste handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	<ul style="list-style-type: none"> • The site is generally kept tidy and clean. • Mosquito control is performed to prevent mosquito breeding on site.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

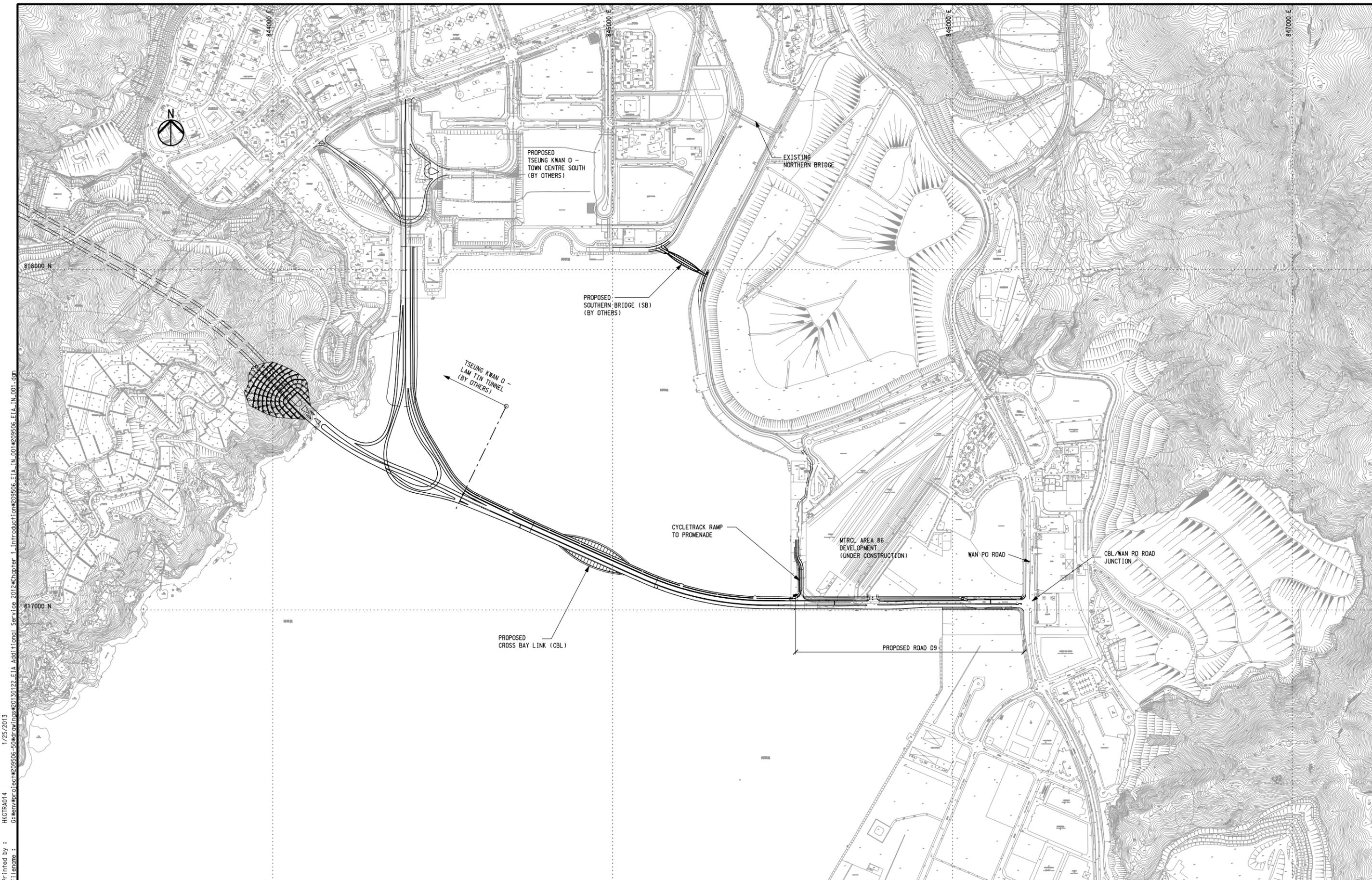
- 10.1.1 This is the **14th** Quarterly EM&A report as presented the monitoring results and inspection findings for the reporting period from **1 March 2022** to **31 May 2022**.
- 10.1.2 In the Reporting Period, two (2) action level exceedance for construction noise was recorded due to two (2) noise complaint was recorded. Investigations were undertaken by ET. The daytime construction noise action level exceedances triggered are unlikely due to the Project.
- 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, three (3) environmental complaints were received with respect to the noise nuisance arising and water quality from the Project. Investigation for the complaints were undertaken by ET and it is considered that three complaints were not Project related.
- 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 is approaching, 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

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

JUNK BAY
(TSEUNG KWAN O)



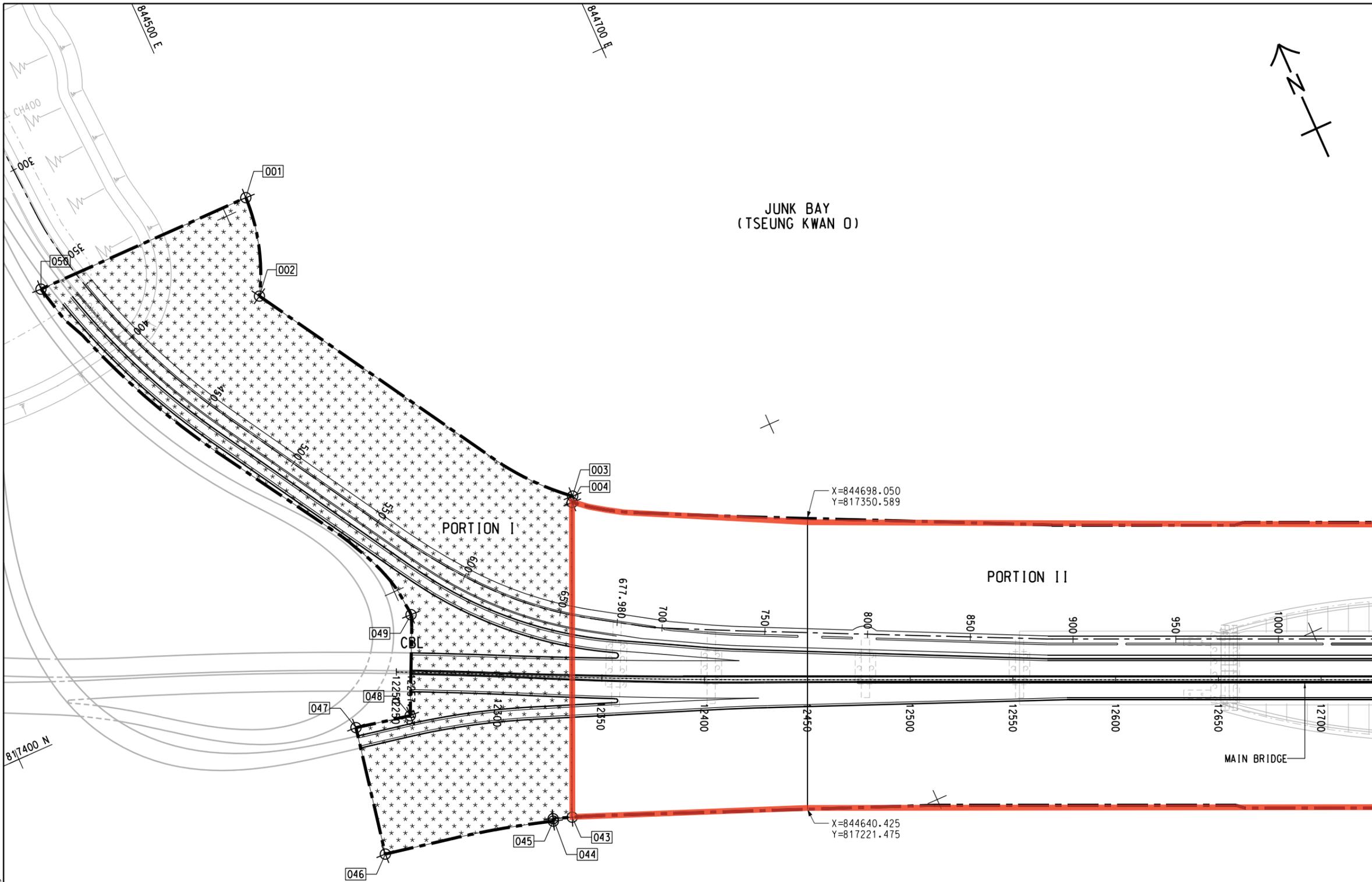
NOTES:

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

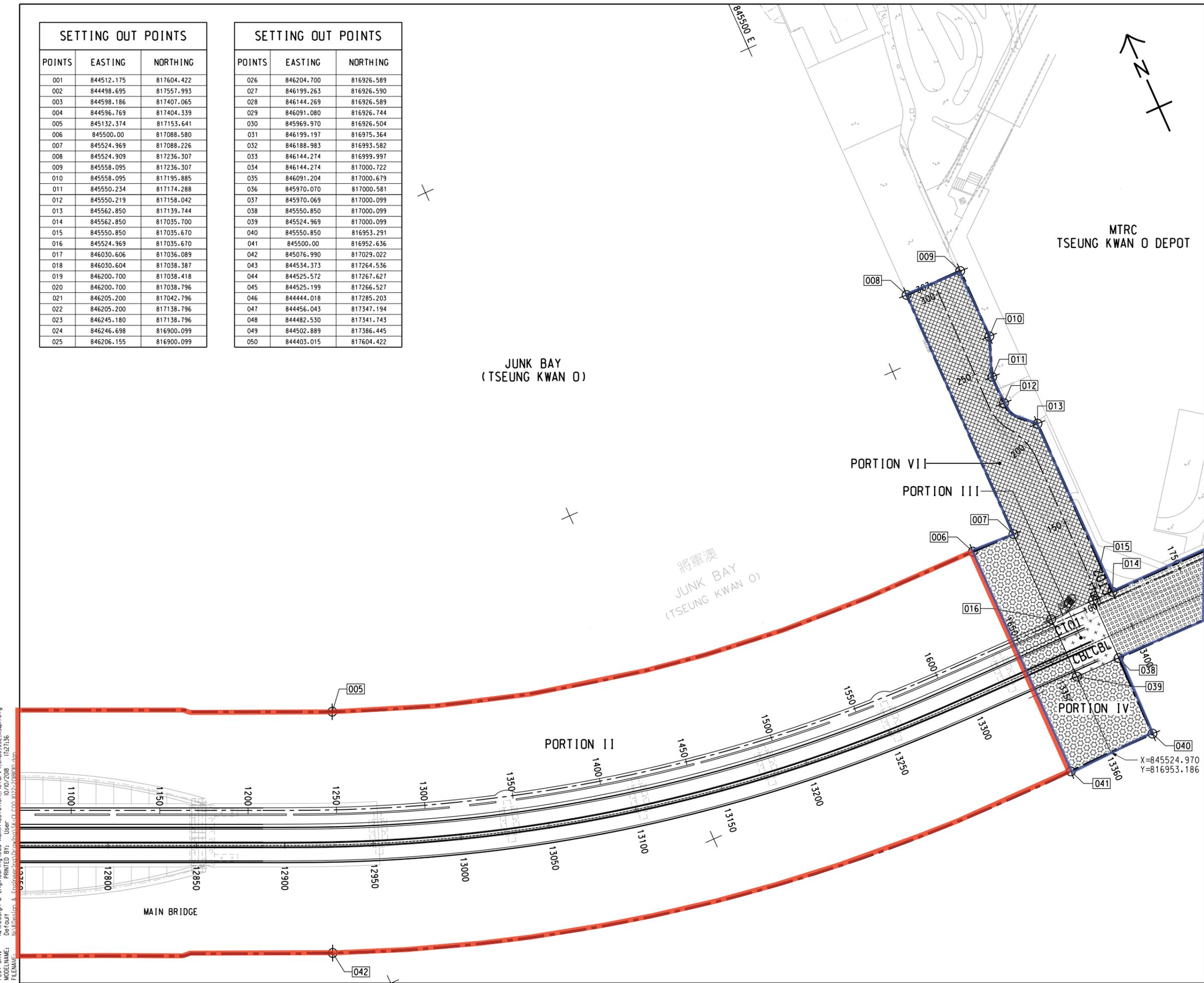
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POINTS	EASTING	NORTHING
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002	844498.695	817557.993
003	844598.186	817407.065
004	844596.769	817404.339
005	845132.374	817153.641
006	845500.00	817088.580
007	845524.969	817088.226
008	845524.909	817236.307
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
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046	844444.018	817285.203
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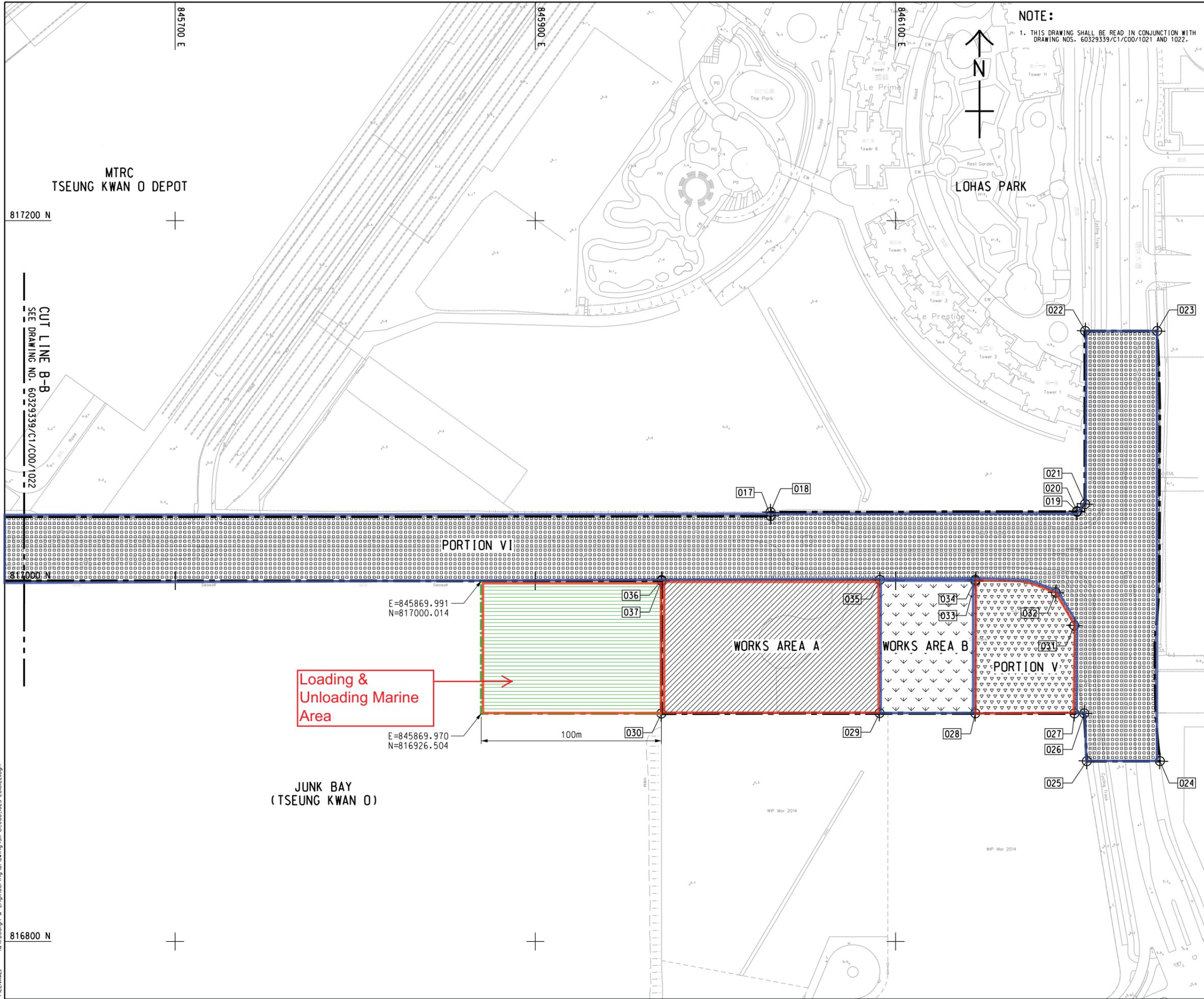
NOTE:
 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/COO/1021 AND 1023.

LEGEND:

- Works area under Contract 1
- Works area under Contract 2

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:					
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

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

Loading & Unloading Marine Area

E=845869.991
N=817000.014

E=845869.970
N=816926.504

100m

JUNK BAY
(TSEUNG KWAN O)

Rev	Amendment	By	Chk.	App.	Date

PROJECT MANAGER: PROJECT MANAGER:



SUPERVISOR:



CONTRACTOR:



CONTRACT NO. AND TITLE:

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

DRAWING TITLE:

SCALE @ A1 DRAWING NO:

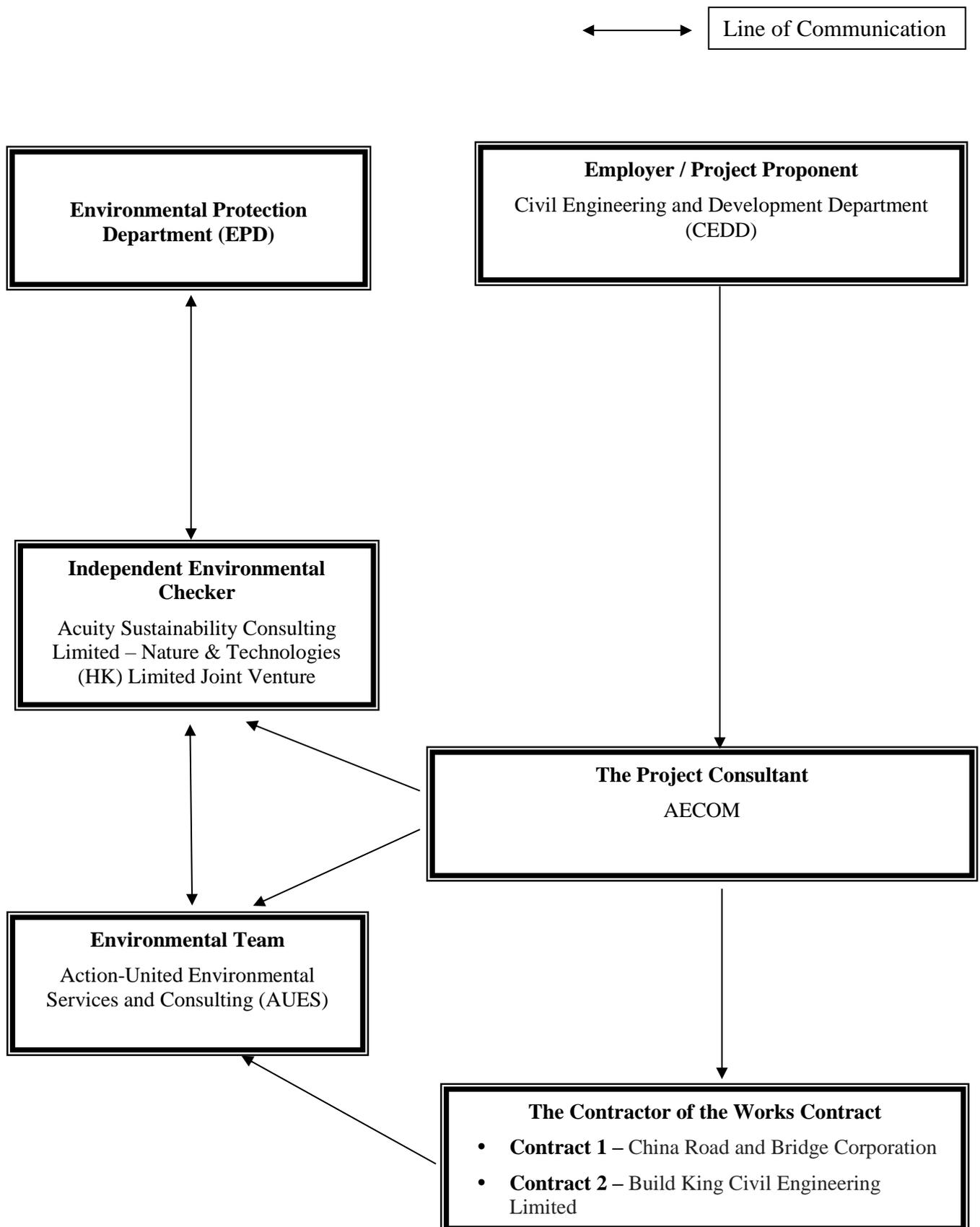
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Appendix B

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

Project Organization Structure



Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
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	Alice Ngai	9148 5688	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	May 2022							June 2022							July 2022							August 2022						
							24	01	08	15	22	29	05	12	19	26	03	10	17	24	31	07												
Segment erection between Pier 5C and Pier 5D - Stage 2-11																																		
S1-EB2055	Segment erection between Pier 5C and Pier 5D	1	1	11-May-22	11-May-22	0%																												
Segment erection between Pier 9C and Pier 9D - Stage 2-12																																		
S1-EB2061	Segment erection between Pier 9C and Pier 9D	1	1	12-May-22	12-May-22	0%																												
Stitching Work, TCSS, Duct and Handover Works																																		
S1-EB2120	Installation of parapet, laying of TCSS duct and handover to TCSS Contractor	31	31	18-May-22	23-Jun-22	0%																												
S1-EB2125	Stitching works	34	34	07-Jun-22	16-Jul-22	0%																												
Construction Work for Pier 2K																																		
Installation of Precast Pier & 2nd Pour for Pile Cap (Pier 2K)																																		
S1-PP5595	Mobilization of 1000T crane barge to Site	0	0	05-May-22 A	05-May-22 A	100%																												
S1-PP5600	Installation of precast pier and 2st pour for pile cap 2K	10	4	06-May-22 A	13-May-22	70%																												
Stitching Work, TCSS, Duct and Handover Works																																		
S1-EB3030	Stitching works, laying of TCSS duct and handover to TCSS Contractor	27	27	23-May-22	23-Jun-22	0%																												
S1-EB3035	Stitching works	38	38	30-May-22	14-Jul-22	0%																												
S1-EB5000	Completion of Key Date 3B	0	0	23-Jun-22	23-Jun-22	0%																												
Installation of Precast Pile Cap & 1st Pour for Pile Cap																																		
S1-PC5000	Installation of pilecap and 1st pour for Pier 2K (Bridge S200-3)	15	0	11-Apr-22 A	28-Apr-22 A	100%																												
Stage 3 - Erection of Bridge Segments																																		
Erection of Bridge Segments for Bridge S200																																		
Segment erection between Pier 2J and Pier 2K - Stage 2-18																																		
S1-EB5440	Segment erection between Pier 2J and Pier 2K	1	1	21-May-22	21-May-22	0%																												
Segment erection between Pier 2K and Pier 2L - Stage 2-17																																		
S1-EB5460	Segment erection between Pier 2K and Pier 2L	1	1	20-May-22	20-May-22	0%																												
E&M Works																																		
Road Lighting & Gantry Lighting Installation																																		
Road Lighting & Gantry Lighting Installationat Bridge ML																																		
S1-EM1000	Road lighting installation works	41	41	16-Jun-22	03-Aug-22	0%																												
S1-EM1020	Gantry lighting installation works	37	37	16-Jun-22	29-Jul-22	0%																												
S1-EM1060	Testing & Commissioning	7	7	04-Aug-22	10-Aug-22	0%																												
Road Lighting Installationat Bridge S400, Bridge CT & Bridge S200																																		
S1-EM1080	Road lighting installation works	40	40	23-Jul-22	07-Sep-22	0%																												
Concrete Deck Cell at Bridge ML - Erection Work																																		
S1-EM1160	Installation works	43	43	14-Jun-22	03-Aug-22	0%																												
S1-EM1180	Testing & Commissioning	7	7	04-Aug-22	10-Aug-22	0%																												
Concrete Deck Cell at Bridge S400, Bridge CT & Bridge S200 - Erection Work																																		
S1-EM1200	Installation works	43	43	23-Jul-22	12-Sep-22	0%																												
Section 2 of Works-All Works within Portion II,III,IV and VI																																		
CBL Main Bridge and Marine Viaduct																																		
Concrete Bridge																																		
Construction of Stitching and Tension																																		
Construction of Long Stitching																																		
S2-CB3435	Construction of long stitching for W3-W2 remaining area (NCE No.177)	22	6	23-Mar-22 A	16-May-22	50%																												
S2-CB5600	Construction of long stitching for E2-E3 remaining area (NCE No.177)	12	7	11-Apr-22 A	17-May-22	45%																												
Procurement and Delivery																																		
S2-CB2488	Procurement and delivery of bituminous materials	240	32	31-Aug-21 A	16-Jun-22	83%																												
Road Works and Surface Furniture																																		
Road Works and Surface Furniture at W5 - W2																																		
S2-CB4900	Construction of planter type 1 and type 2 (NCE No.185)	30	10	28-Jan-22 A	20-May-22	81%																												
S2-CB4920	Installation of Ducting and In-situ Concreting (NCE No.185)	30	10	28-Jan-22 A	20-May-22	81%																												
S2-CB4930	Waterproofing and soiling for planter type 1 and type 2	10	10	05-Aug-22	16-Aug-22	0%																												
S2-CB4940	Installation of Lighting Post and Lighting Cabinet	15	15	25-Jul-22	10-Aug-22	0%																												
S2-CB4960	Construction of concrete kerb for installation of L3 parapet	20	6	25-Mar-22 A	16-May-22	70%																												
S2-CB4980	Installation of the L3 railing	15	15	05-Aug-22	22-Aug-22	0%																												
S2-CB5040	Installation of the balustrade	20	20	05-Aug-22	27-Aug-22	0%																												
S2-CB5055	Leveling by mass concrete for Footpath (potential PMI)	12	12	21-May-22	04-Jun-22	0%																												
S2-CB5060	Waterproofing for Footpath	12	12	06-Jun-22	18-Jun-22	0%																												
S2-CB5080	Paving Block Laying for Footpath	30	30	20-Jun-22	25-Jul-22	0%																												
S2-CB5090	Leveling by mass concrete for cycle track (potential PMI)	12	12	27-May-22	10-Jun-22	0%																												
S2-CB5095	Grinding for waterproofing surface for carriageway	18	18	06-Jun-22	25-Jun-22	0%																												
S2-CB5100	Waterproofing works for cycle track	10	10	11-Jun-22	22-Jun-22	0%																												
S2-CB5105	Waterproofing works for carriageway	15	15	27-Jun-22	14-Jul-22	0%																												
S2-CB5120	Road pavement for cycle track	12	12	23-Jun-22	07-Jul-22	0%																												
S2-CB5140	Road pavement for carriageway	23	23	09-Jul-22	04-Aug-22	0%																												

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

Three Month Rolling Programme (May 2022 - Aug 2022)

Date	Revision	Checked	Approved
08-May-22	3MRP (May 22 -Aug 22)		

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	Gantt Chart (May 2022 - Aug 2022)											
							24	01	08	15	22	29	05	12	19	26	03	10
S2-SB2045	Painting of the west side span ring weld (inside) (bottom part) (NCE No.181)	18	10	25-Apr-22 A	20-May-22	30%	Painting of the west side span ring weld (inside) (bottom part) (NCE No.181)											
S2-SB2072	Top coating of the steel deck (east span) (NCE No.181)	75	10	08-Jan-22 A	20-May-22	80%	Top coating of the steel deck (east span) (NCE No.181)											
S2-SB2076	Top coating of the steel deck (west span) (NCE No.181)	75	10	08-Jan-22 A	20-May-22	70%	Top coating of the steel deck (west span) (NCE No.181)											
S2-SB2080	Top coating of the steel deck (main span) (NCE No.181)	98	63	08-Jan-22 A	26-Jul-22	40%	Top coating of the steel deck											
S2-SB2100	Painting repair of the arch rib (Internal)	45	22	07-Apr-22 A	16-Jun-22	40%	Painting repair of the arch rib (Internal)											
S2-SB2105	Painting repair of the arch rib (External)	45	45	19-Jul-22	08-Sep-22	0%												
Removal of the Temporary Supports at W1 & E1		106	11	03-Jan-22 A	21-May-22		Removal of the Temporary Supports at W1 & E1											
S2-SB2220	Removal of the temporary supports at W1	10	5	04-Jan-22 A	14-May-22	45%	Removal of the temporary supports at W1											
S2-SB2240	Removal of the temporary supports at W2	1	1	21-May-22	21-May-22	0%	Removal of the temporary supports at W2											
S2-SB2260	Removal of the temporary supports at E1	10	4	03-Jan-22 A	13-May-22	50%	Removal of the temporary supports at E1											
S2-SB2280	Removal of the temporary supports at E2	1	1	19-May-22	19-May-22	0%	Removal of the temporary supports at E2											
Construction of Steel-Concrete Transition Zone		24	10	25-Apr-22 A	20-May-22		Construction of Steel-Concrete Transition Zone											
Construction of the west side transition		16	7	25-Apr-22 A	20-May-22		Construction of the west side transition											
S2-CT1090	Threading and stressing of the PT bar at transition section (remaining 4nos)	7	6	25-Apr-22 A	19-May-22	50%	Threading and stressing of the PT bar at transition section (remaining 4nos)											
S2-CT1095	Welding of the box out on steel deck (remaining middle area at top deck)	14	2	03-May-22 A	14-May-22	50%	Welding of the box out on steel deck (remaining middle area at top deck)											
S2-CT1100	Removal of the temporary jacks from the Pier W2	1	1	20-May-22	20-May-22	0%	Removal of the temporary jacks from the Pier W2											
Construction of the east side transition		17	8	03-May-22 A	18-May-22		Construction of the east side transition											
S2-CT1215	Threading and stressing of the PT bar at transition section (remaining 4nos)	7	7	03-May-22 A	17-May-22	45%	Threading and stressing of the PT bar at transition section (remaining 4nos)											
S2-CT1216	Welding of the box out on steel deck (remaining middle area at top deck)	14	3	05-May-22 A	12-May-22	55%	Welding of the box out on steel deck (remaining middle area at top deck)											
S2-CT1220	Removal of the temporary jacks from the Pier E2	1	1	18-May-22	18-May-22	0%	Removal of the temporary jacks from the Pier E2											
Associated E&M Works for CBL Main Bridge and Marine Viaduct		109	109	10-Mar-22 A	16-Sep-22		Associated E&M Works for CBL Main Bridge and Marine Viaduct											
UBG and AIC		57	57	11-May-22	18-Jul-22		UBG and AIC											
AIC		57	57	11-May-22	18-Jul-22		AIC											
S2-EM1320	Installation of the Arch Inspection Cradle (shortage of worker delayed due to COVID-19; target start on 11 May 22)	27	27	11-May-22*	11-Jun-22	0%	Installation of the Arch Inspection Cradle (shortage of worker delayed due to COVID-19; target start on 11 May 22)											
S2-EM1340	Testing of the AIC (delay delivery material (genset) on site due to COVID-19)	30	30	13-Jun-22	18-Jul-22	0%	Testing of the AIC (delay delivery material (genset) on site due to COVID-19)											
UBG		3	3	28-Jun-22	30-Jun-22		UBG											
Testing of the UBG and SAT		3	3	28-Jun-22	30-Jun-22		Testing of the UBG and SAT											
S2-EM1300	SAT (delay delivery material (genset) on site due to COVID-19)	3	3	28-Jun-22	30-Jun-22	0%	SAT (delay delivery material (genset) on site due to COVID-19)											
Installation of Other Systems		100	100	20-May-22	16-Sep-22		Installation of Other Systems											
S2-EM1380	Dehumidification system installation in the stay cables	10	10	20-May-22	31-May-22	0%	Dehumidification system installation in the stay cables											
S2-EM1400	Commission and testing of the dehumidification system	90	90	01-Jun-22	16-Sep-22	0%	Commission and testing of the dehumidification system											
SHMS Installation		83	83	10-Mar-22 A	16-Aug-22		SHMS Installation											
S2-EM1361	Installation of STR-W protective box and laying of cables	20	18	10-Mar-22 A	30-May-22	50%	Installation of STR-W protective box and laying of cables											
S2-EM1362	Cable laying from stormwater planting room to bridge deck (NCE198 -Delay Access to Portion VI)	15	15	31-May-22	17-Jun-22	0%	Cable laying from stormwater planting room to bridge deck (NCE198 -Delay Access to Portion VI)											
S2-EM1363	Installation of instruments (accelerometers, inclinometers etc)	15	15	18-Jun-22	06-Jul-22	0%	Installation of instruments (accelerometers, inclinometers etc)											
S2-EM3140	Laying of dynamic systems	21	21	07-Jul-22	30-Jul-22	0%	Laying of dynamic systems											
S2-EM3160	Sensor connected with PXI to access system building service	14	14	01-Aug-22	16-Aug-22	0%	Sensor connected with PXI to access system building service											
E&M Works		254	116	23-Dec-21 A	02-Sep-22		E&M Works											
E&M Works in Portion II, III & IV		254	116	23-Dec-21 A	02-Sep-22		E&M Works in Portion II, III & IV											
Road Lighting		73	73	27-May-22	22-Aug-22		Road Lighting											
S2-EM1500	Road Lighting works at W5-W2	37	37	11-Jul-22	22-Aug-22	0%	Road Lighting works at W5-W2											
S2-EM1560	Road Lighting works at E2-EA	37	37	27-May-22	11-Jul-22	0%	Road Lighting works at E2-EA											
S2-EM1620	Road Lighting works at W2-E2	37	37	08-Jun-22	21-Jul-22	0%	Road Lighting works at W2-E2											
Pier Head Lighting Installation at Piers W5-EA		105	71	19-Mar-22 A	02-Aug-22		Pier Head Lighting Installation at Piers W5-EA											
S2-EM3040	Pier Head Lighting Installation at Piers W2-W5	101	66	19-Mar-22 A	27-Jul-22	35%	Pier Head Lighting Installation at Piers W2-W5											
S2-EM3060	Pier Head Lighting Installation at Piers E2-EA	105	71	19-Mar-22 A	02-Aug-22	22%	Pier Head Lighting Installation at Piers E2-EA											
S2-EM3080	Pier Head Lighting Installation at Piers W1-E1	96	70	19-Mar-22 A	01-Aug-22	19%	Pier Head Lighting Installation at Piers W1-E1											
Fixed Red Lighting Installation at Piers W1-E1		77	77	18-Jun-22	02-Sep-22		Fixed Red Lighting Installation at Piers W1-E1											
S2-EM3100	Installation of Pier Head Lighting	38	38	18-Jun-22	02-Aug-22	0%	Installation of Pier Head Lighting											
S2-EM3120	Testing & Commissioning	30	30	04-Aug-22	02-Sep-22	0%	Testing & Commissioning											
SCADA System		203	97	23-Dec-21 A	01-Sep-22		SCADA System											
S5-PR3240	FAT preparation	75	20	23-Dec-21 A	01-Jun-22	75%	FAT preparation											
S5-PR3260	FAT and deliver to Site	12	12	02-Jun-22	16-Jun-22	0%	FAT and deliver to Site											
S5-PR3280	Installation of cable containment	20	20	10-May-22	01-Jun-22	0%	Installation of cable containment											
S5-PR3300	Equipment cabling & wiring completion for termination	20	20	27-May-22	20-Jun-22	0%	Equipment cabling & wiring completion for termination											
S5-PR3320	Rack & Equipment on site installation	14	14	21-Jun-22	07-Jul-22	0%	Rack & Equipment on site installation											
S5-PR3340	Equipment & RIOU panel termination	18	18	08-Jul-22	28-Jul-22	0%	Equipment & RIOU panel termination											
S5-PR3360	Optical fibre cable laying (NCE198 -Delay Access to Portion VI)	60	60	10-May-22	20-Jul-22	0%	Optical fibre cable laying (NCE198 -Delay Access to Portion VI)											
S5-PR3380	Cable & wiring Termination	37	37	21-Jul-22	01-Sep-22	0%	Cable & wiring Termination											
Navigation Lighting at Piers W1-E1		72	40	19-Mar-22 A	25-Jun-22		Navigation Lighting at Piers W1-E1											
S2-EM1630	Navigation Lighting Installation at Piers W1-E1	72	40	19-Mar-22 A	25-Jun-22	35%	Navigation Lighting Installation at Piers W1-E1											

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

Three Month Rolling Programme (May 2022 - Aug 2022)

Date	Revision	Checked	Approved
08-May-22	3MRP (May 22 -Aug 22)		

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	May 2022							June 2022							July 2022							August 2022																		
							24	01	08	15	22	29	05	12	19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	01	08	15	22	29	05	12	19	26	02	09	16	23	30	06	13	20
Avigation Lighting at Piers W1-E1		88	50	19-Mar-22 A	08-Jul-22		Avigation Lighting Installation at Piers W1-E1																																							
S2-EM1700	Avigation Lighting Installation at Piers W1-E1	88	50	19-Mar-22 A	08-Jul-22	30%	Avigation Lighting Installation at Piers W1-E1																																							
Functional Lighting at Piers W1-E1		116	115	09-Apr-22 A	02-Sep-22		Equipment Installation at Piers W1-E1																																							
S2-EM1760	Equipment Installation of Functional Light	90	70	09-Apr-22 A	02-Aug-22	18%	Equipment Installation at Piers W1-E1																																							
S2-EM1920	Testing and Commissioning including SAT & Scene Program	30	30	04-Aug-22	02-Sep-22	0%	Equipment Installation at Piers W1-E1																																							
Lightning System and Main Earthing System		207	116	27-Jan-22 A	02-Sep-22		Lightning tape installation																																							
S2-EM1940	Lightning tape installation	94	45	27-Jan-22 A	02-Jul-22	90%	Lightning tape installation																																							
S2-EM1960	T&C for lightning system	30	30	04-Aug-22	02-Sep-22	0%	Lightning tape installation																																							
S2-EM1980	Installation of earthing tape at Main Bridge	50	0	27-Apr-22 A	06-May-22 A	100%	Installation of earthing tape at Main Bridge																																							
S2-EM1985	Installation of earthing tape at Portion VI (NCE198 -Delay Access to Portion VI)	49	49	10-May-22	07-Jul-22	0%	Installation of earthing tape at Portion VI (NCE198 -Delay Access to Portion VI)																																							
S2-EM1990	T&C for main earthing system	30	30	04-Aug-22	02-Sep-22	0%	Installation of earthing tape at Portion VI (NCE198 -Delay Access to Portion VI)																																							
Deck Cell - Erection Work		89	20	31-Jan-22 A	01-Jun-22		Deck Cell - Erection Work																																							
Steel Bridge Deck Cell at Piers W1-E1 Main Span (Steel)		58	6	05-Feb-22 A	16-May-22	90%	Steel Bridge Deck Cell at Piers W1-E1 Main Span (Steel)																																							
S1-EM1360	Piers W1-E1 Main Span (Steel) - installation of lighting fitting and wiring accessories (COVID-19: shortage of worker)	58	6	05-Feb-22 A	16-May-22	90%	Piers W1-E1 Main Span (Steel) - installation of lighting fitting and wiring accessories (COVID-19: shortage of worker)																																							
Steel Deck Cell at Piers W1-W2 West Side Span Deck		50	20	25-Mar-22 A	01-Jun-22		Steel Deck Cell at Piers W1-W2 West Side Span Deck																																							
S1-EM1420	Steel Deck Cell at Piers W1-W2 West Side Span - installation of lighting fitting and wiring accessories	50	20	25-Mar-22 A	01-Jun-22	75%	Steel Deck Cell at Piers W1-W2 West Side Span - installation of lighting fitting and wiring accessories																																							
Steel Deck Cell at Piers E1-E2 East Side Span Deck		60	20	31-Jan-22 A	01-Jun-22		Steel Deck Cell at Piers E1-E2 East Side Span Deck																																							
S1-EM1460	Steel Deck Cell at Piers W1-W2 West Side Span - small cable wiring work (Shortage of worker affected by COVID-19)	60	20	31-Jan-22 A	01-Jun-22	60%	Steel Deck Cell at Piers W1-W2 West Side Span - small cable wiring work (Shortage of worker affected by COVID-19)																																							
Dehumidification System at Piers W1-E1		30	30	02-Jul-22	05-Aug-22		Dehumidification System at Piers W1-E1																																							
S1-EM1500	Installation of Dehumidification System at Piers W1-E1	30	30	02-Jul-22	05-Aug-22	0%	Dehumidification System at Piers W1-E1																																							
Gantry Lighting Installation at Piers W2 & E3		47	47	11-Jun-22	05-Aug-22		Gantry Lighting Installation at Piers W2 & E3																																							
S1-EM1520	Gantry Lighting Installation at Piers W2 & E3	47	47	11-Jun-22	05-Aug-22	0%	Gantry Lighting Installation at Piers W2 & E3																																							
17M Information Sign Lighting Installation at Piers W1-E1		53	23	19-Mar-22 A	06-Jun-22		17M Information Sign Lighting Installation at Piers W1-E1																																							
S2-EM3020	17M Information Sign Lighting Installation at Piers W1-E1	53	23	19-Mar-22 A	06-Jun-22	40%	17M Information Sign Lighting Installation at Piers W1-E1																																							
Section 3 of the Works-Comprises All of the Landscape Works		100	100	31-May-22	27-Sep-22		Landscape works for CBL bridge																																							
S3-LW2000	Landscape works for CBL bridge	100	100	31-May-22	27-Sep-22	0%	Landscape works for CBL bridge																																							
S3-LW2020	Landscape works for TKO-LTT bridge	55	55	23-Jul-22	26-Sep-22	0%	Landscape works for TKO-LTT bridge																																							
Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		322	178	02-Aug-21 A	03-Nov-22		T&C for all systems after connection from plantroom to the bridge (incl. 15 days TRA)																																							
Remaining Work		76	76	08-Aug-22	03-Nov-22		T&C for all systems after connection from plantroom to the bridge (incl. 15 days TRA)																																							
S5-PR2300	T&C for all systems after connection from plantroom to the bridge (incl. 15 days TRA)	76	76	08-Aug-22	03-Nov-22	0%	T&C for all systems after connection from plantroom to the bridge (incl. 15 days TRA)																																							
Major Services System		263	91	02-Aug-21 A	25-Aug-22		UPS FAT																																							
Electrical System		121	91	01-Mar-22 A	25-Aug-22		UPS FAT																																							
UPS Room		121	91	01-Mar-22 A	25-Aug-22		UPS FAT																																							
S5-PR2570	UPS FAT	17	0	01-Mar-22 A	30-Apr-22 A	100%	UPS FAT																																							
S5-PR2575	UPS delivery	50	45	03-May-22 A	02-Jul-22	15%	UPS delivery																																							
S5-PR2580	UPS Installation (Including E&M Work)	26	26	04-Jul-22	02-Aug-22	0%	UPS Installation																																							
S5-PR2620	UPS SAT & Testing and Commissioning	20	20	03-Aug-22	25-Aug-22	0%	UPS Installation																																							
Generator Room		38	34	03-May-22 A	18-Jun-22		Generator Room																																							
S5-PR2515	Delivery of Genset Generator Control Cubicle (delay due to border problem, target to Hong Kong on 3 May 2022)	0	0		03-May-22 A	100%	Delivery of Genset Generator Control Cubicle (delay due to border problem, target to Hong Kong on 3 May 2022)																																							
S5-PR2520	Genset Generator Control Cubicle site installation	18	14	04-May-22 A	25-May-22	15%	Genset Generator Control Cubicle site installation																																							
S5-PR2540	Generator SAT & Testing and Commissioning	20	20	26-May-22	18-Jun-22	0%	Generator SAT & Testing and Commissioning																																							
S5-PR2560	Accomplish of Generator Installation	0	0		18-Jun-22	0%	Accomplish of Generator Installation																																							
Main Cable Laying (from Stormwater Plant Room to Main Bridge)		263	75	02-Aug-21 A	06-Aug-22		Main Cable Laying (from Stormwater Plant Room to Main Bridge)																																							
S5-PR3500	Installation of cable containment at deck cell	220	0	02-Aug-21 A	06-May-22 A	100%	Installation of cable containment at deck cell																																							
S5-PR3520	Main cable laying at Main Bridge	65	28	16-Feb-22 A	11-Jun-22	45%	Main cable laying at Main Bridge																																							
S5-PR3540	Main cable laying at Main Bridge at Portion VI (NCE198 -Delay Access to Portion VI)	50	50	10-May-22	08-Jul-22	0%	Main cable laying at Main Bridge at Portion VI (NCE198 -Delay Access to Portion VI)																																							
S5-PR3560	Main cable termination (inside LV switchband)	25	25	09-Jul-22	06-Aug-22	0%	Main cable termination (Main Bridge)																																							
S5-PR3580	Main cable termination (Main Bridge)	25	25	13-Jun-22	12-Jul-22	0%	Main cable termination (Main Bridge)																																							
S5-PR3600	Power energization	0	0		06-Aug-22	0%	Power energization																																							

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

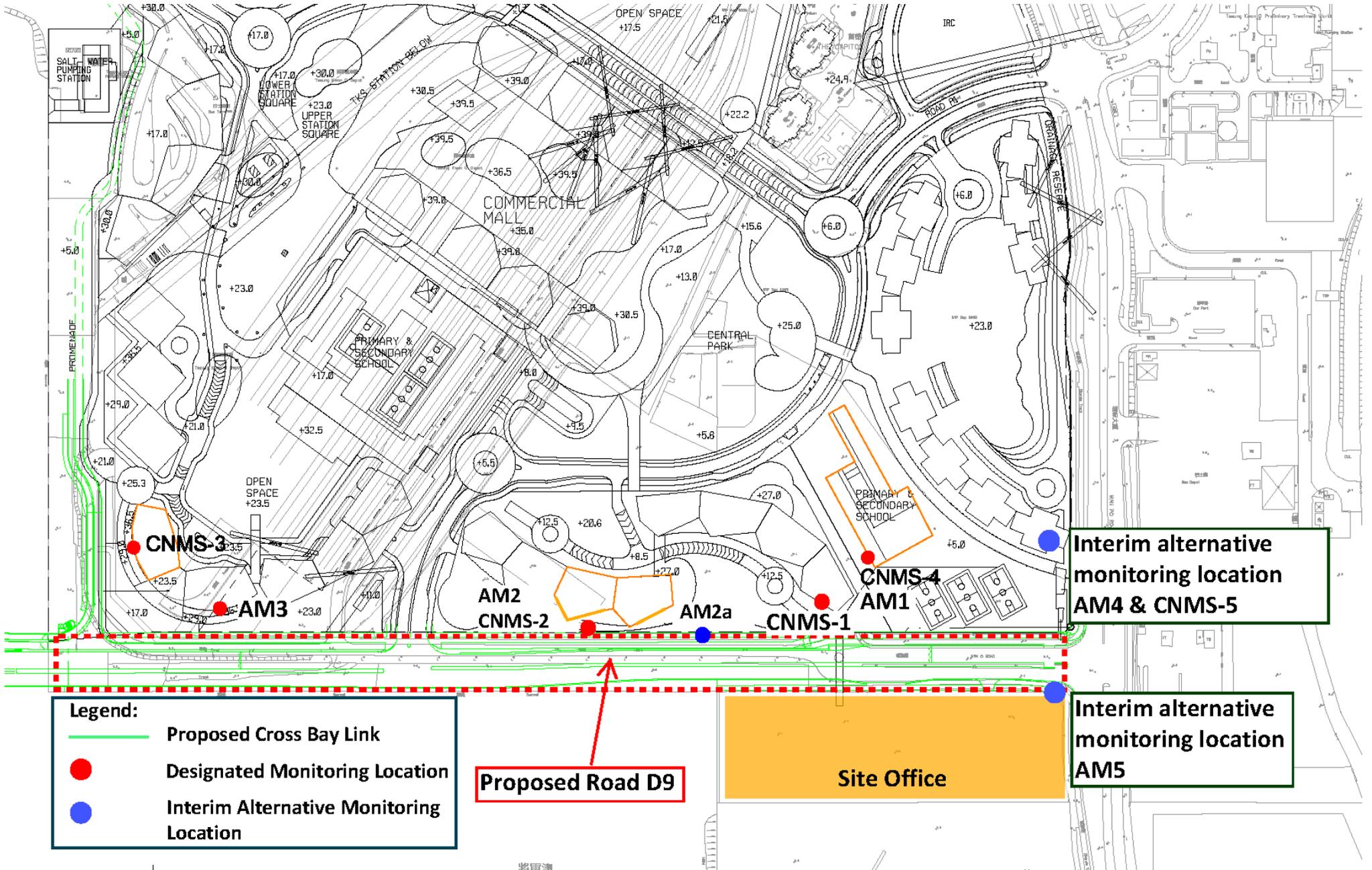
Three Month Rolling Programme (May 2022 - Aug 2022)

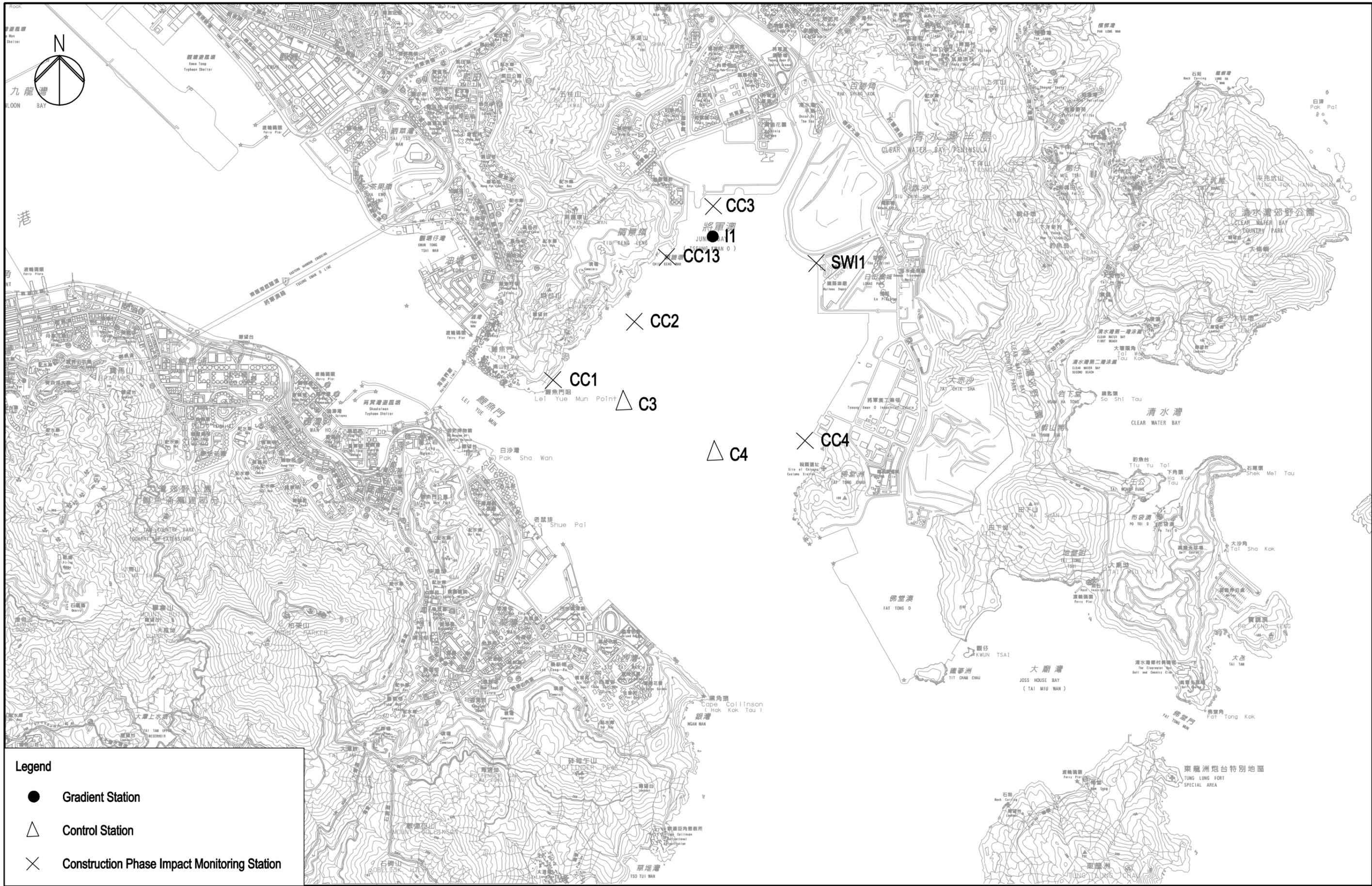
Date	Revision	Checked	Approved
08-May-22	3MRP (May 22 -Aug 22)		

Contract 2

Appendix D

Monitoring Location
(Air Quality, Noise and Water Quality)





Legend

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

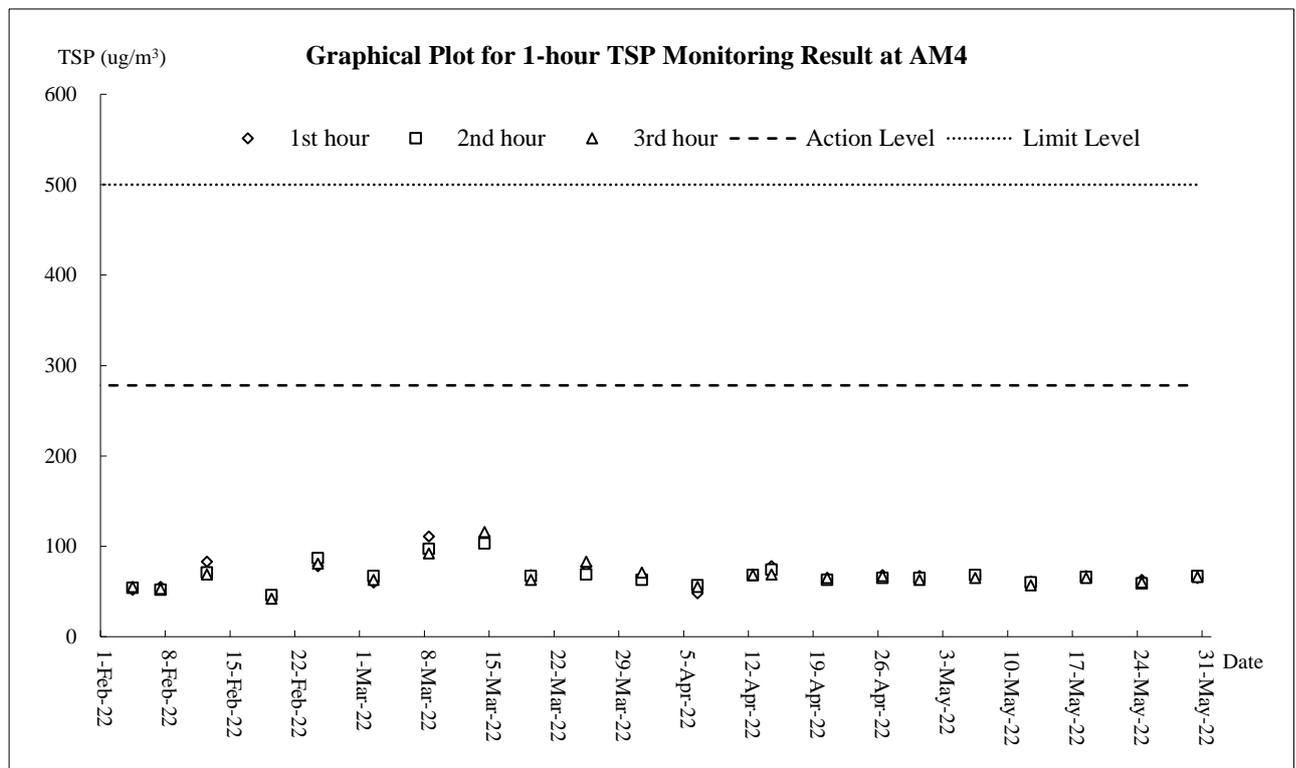
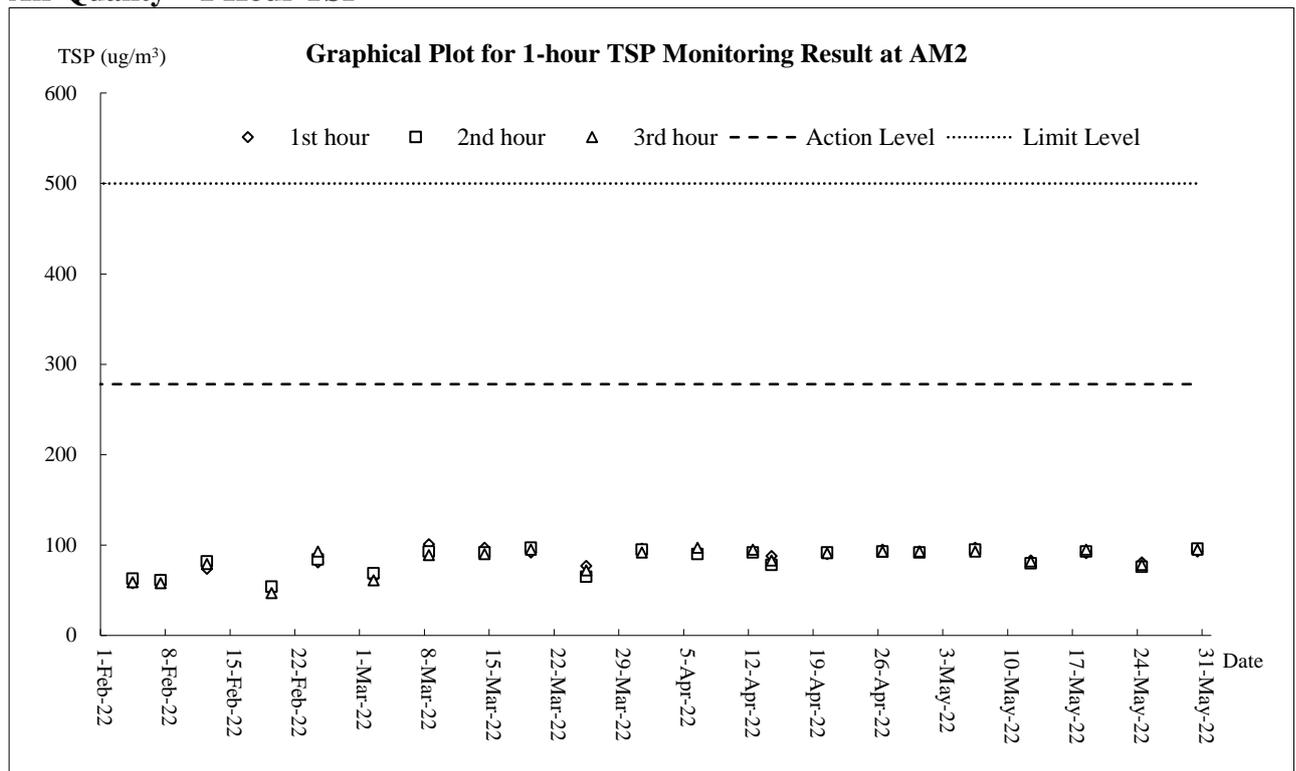
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 Plotted by: JP

 土木工程拓展署 Civil Engineering and Development Department	 ARUP Ove Arup & Partners Hong Kong Limited	Job Title Agreement No. CE 43/2008(HY) Cross Bay Link, Tseung Kwan O - Investigation	Drawing Title Locations of Water Quality Monitoring Stations	Drawn GL Date 03/13	Checked JP Approved ST	Drawing No. 209506/EMA/WQ/001												
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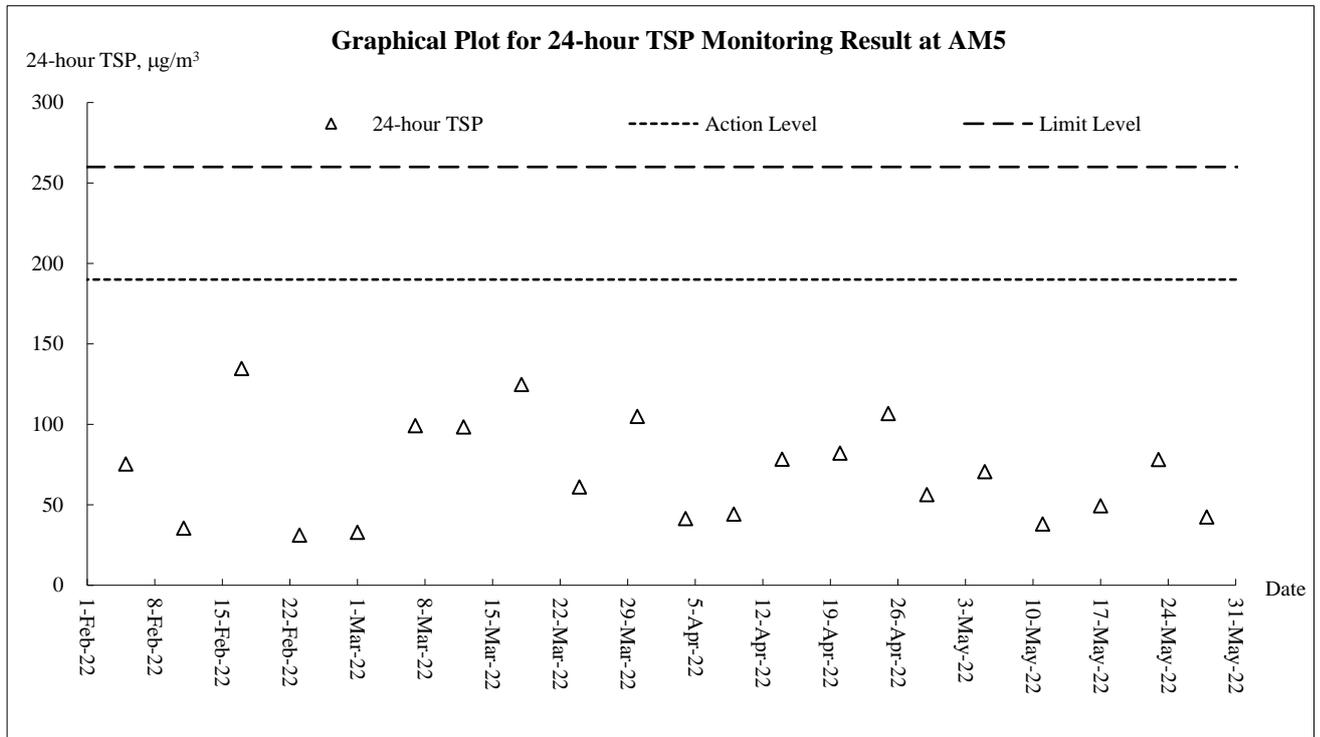
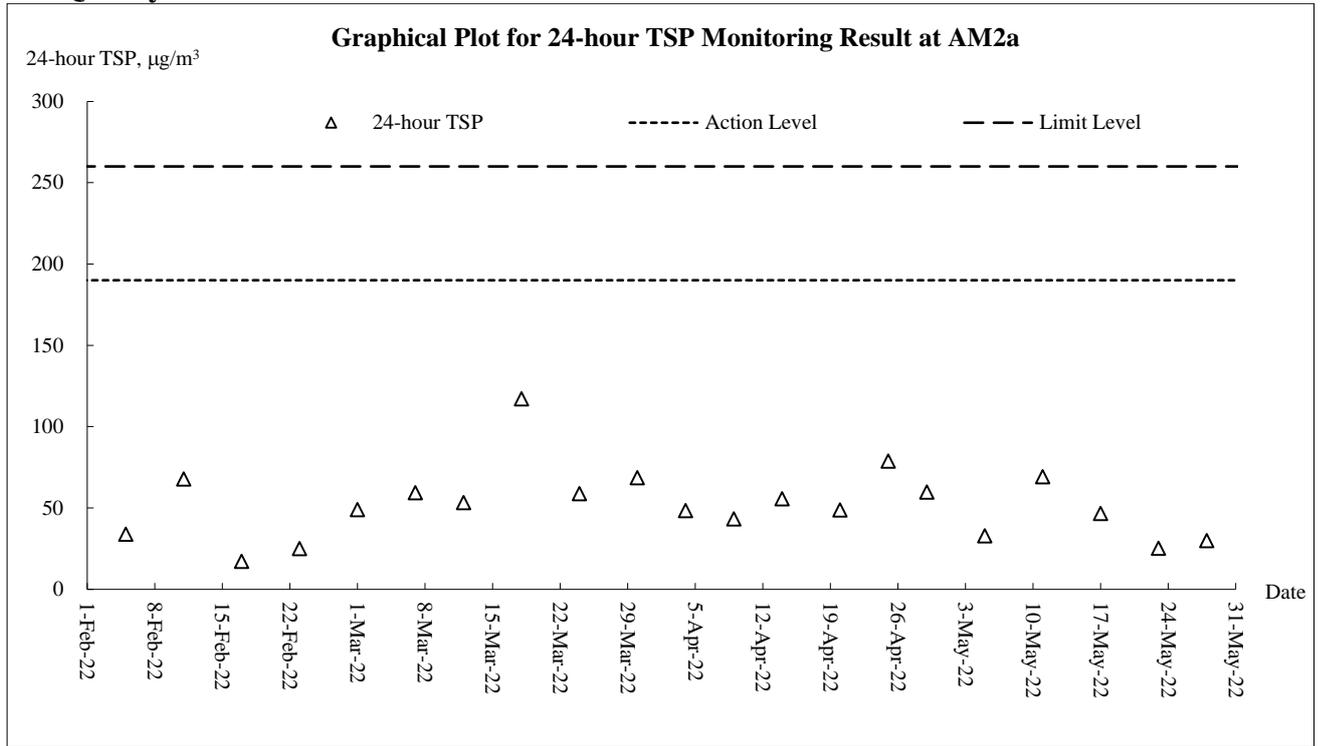
Appendix E

Graphical Plots of Monitoring Results

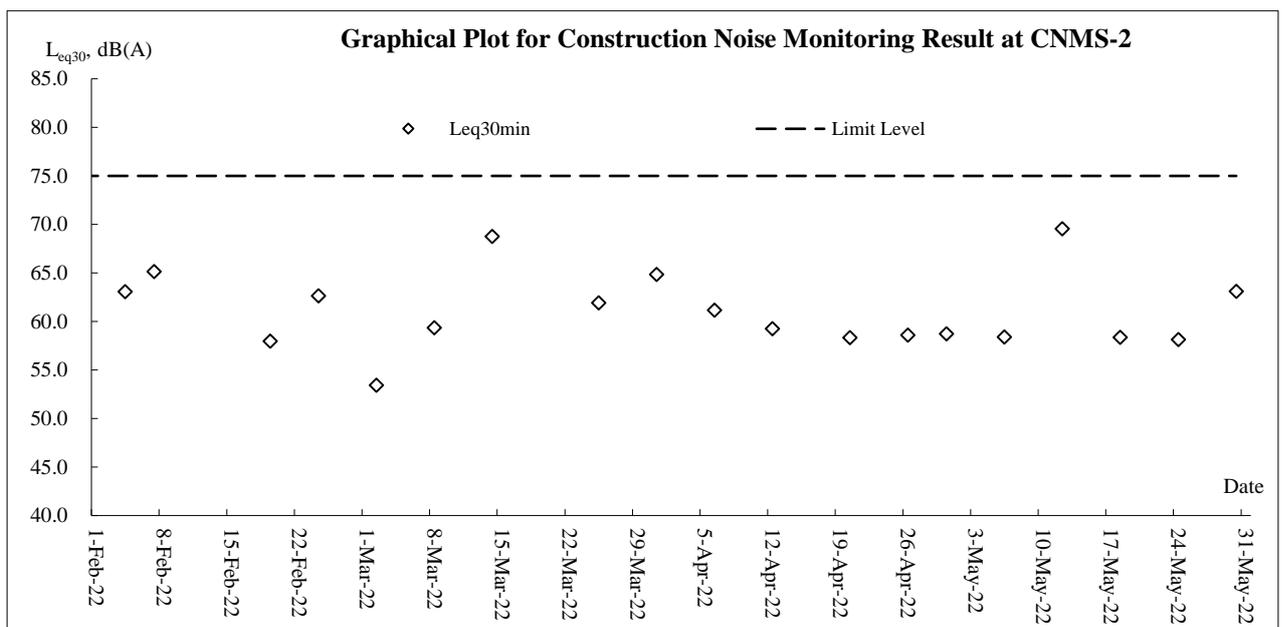
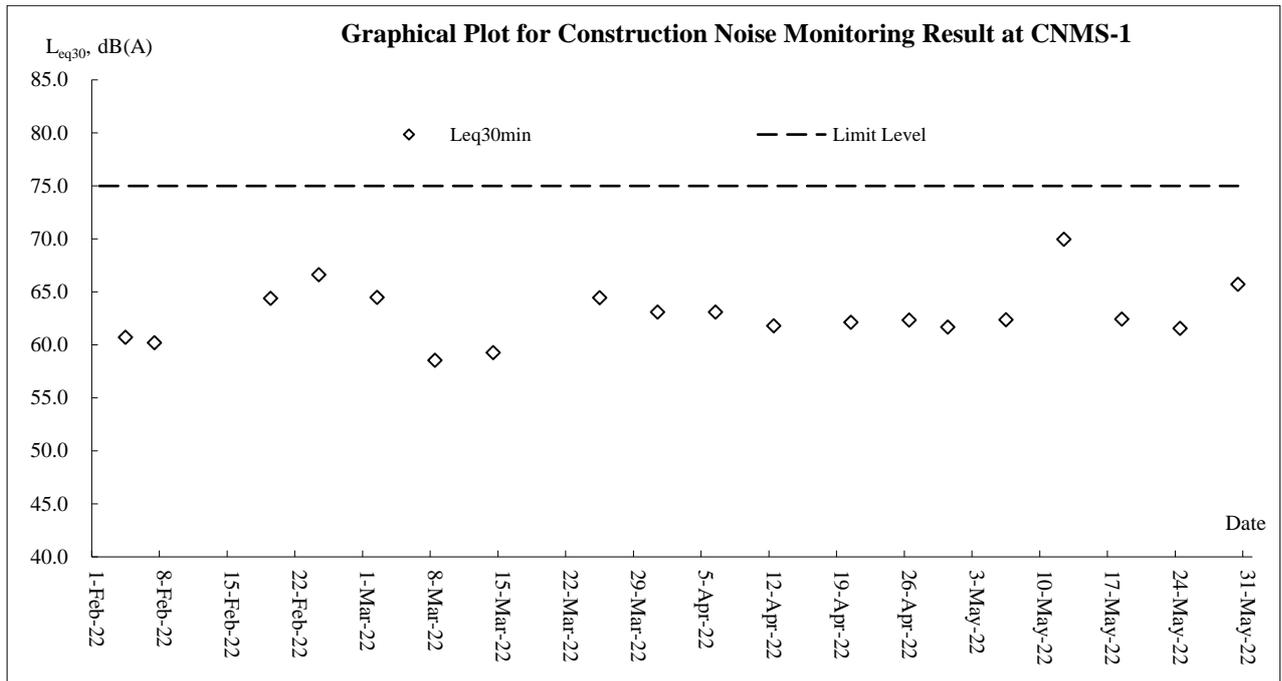
Air Quality – 1 Hour TSP

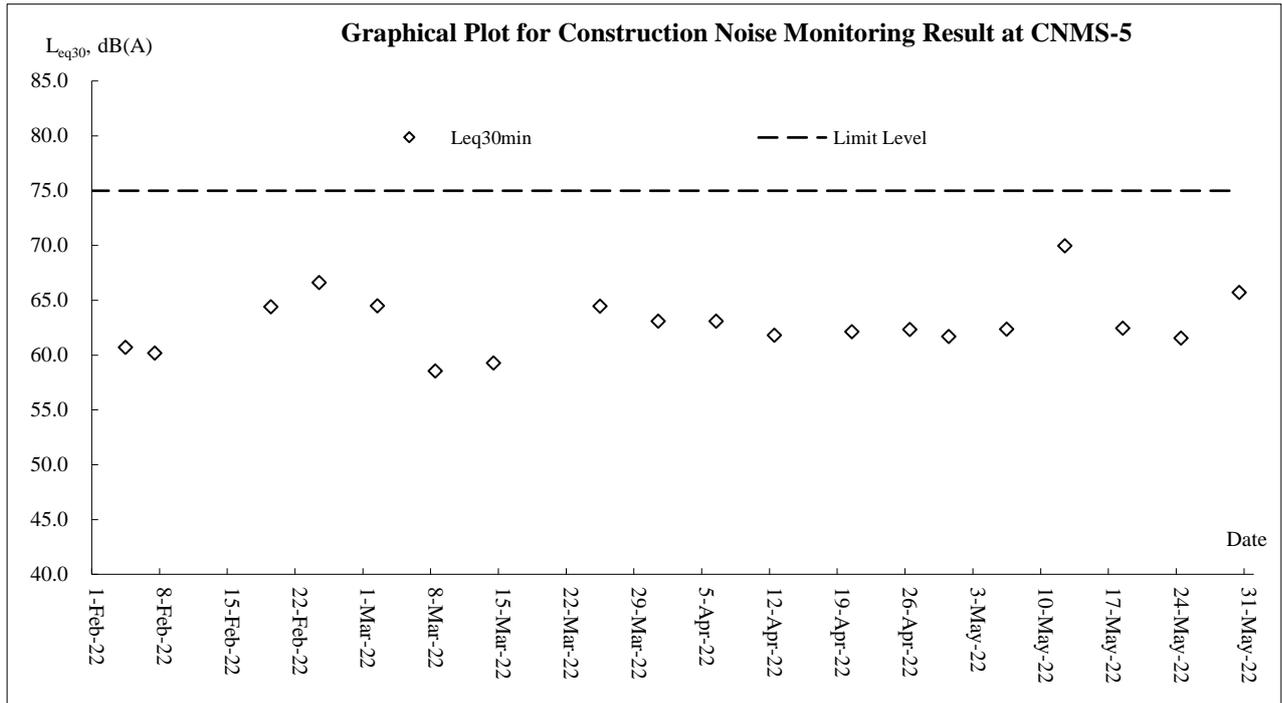


Air Quality - 24-Hour TSP



Construction Noise





Appendix F

Meteorological Information

The weather of March 2022

With the northeast monsoon over southern China generally weaker than normal for most of the time in the month, March 2022 was much warmer than usual in Hong Kong. The monthly mean maximum temperature of 25.0 degrees was 3.1 degrees above normal and the highest on record for March. Moreover, the monthly mean temperature of 21.5 degrees and monthly mean minimum temperature of 19.2 degrees were respectively the second and sixth highest on record for March. The total rainfall in the month was 92.7 millimetres, about 23 percent above the normal figure of 75.3 millimetres. The accumulated rainfall of 265.3 millimetres in the first three months of the year was about 80% above the normal figure of 147.4 millimetres for the same period.

The weather of April 2022

With dry northeast monsoon affecting Hong Kong and less moisture supply to the south China coast for most of the time in the month, April 2022 was much drier than usual in Hong Kong. The total rainfall in the month was 3.5 millimetres, only about 2 percent of the normal figure of 153.0 millimetres and the lowest on record for April. The accumulated rainfall recorded in the first four months of the year was 268.8 millimetres, about 11 percent below the normal figure of 300.4 millimetres for the same period. Moreover, the monthly mean relative humidity was 73 percent, the lowest on record for April since 1961. The month was also much sunnier than usual, the total duration of bright sunshine in the month was 191.1 hours, about 69 percent above the normal of 113.2 hours and the fifth highest on record for April. April 2022 was warmer than usual with a mean temperature of 23.7 degrees, 0.7 degree above the normal of 23.0 degrees.

The weather of May 2022

With stronger than normal northeast monsoon affecting southern China in the month, the weather of Hong Kong was much cooler than usual in May 2022. The monthly mean temperature was 25.0 degrees, 1.3 degrees below the normal figure of 26.3 degrees. Mainly attributing to the heavy rain episode on 11 – 13 May, the month was also wetter than usual with a total rainfall of 436.5 millimetres, about 50 percent above the normal of 290.6 millimetres. The accumulated rainfall recorded in the first five months of the year was 705.3 millimetres, about 19 percent above the normal figure of 590.9 millimetres for the same period.

*The detailed meteorological data for each successive day can be referred to in the Monthly EM&A Reports (Mar 2022, Apr 2022 and May 2022.)

Appendix G

Waste Flow Table

Contract 1

Monthly Summary Waste Flow Table for 2022 (year)

Name of Person completing the record: Sedo Sze (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 ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m ³)
Jan	0.162	0.000	0.000	0.000	0.162	0.000	0.000	0.171	0.000	0.000	0.768
Feb	0.066	0.000	0.000	0.000	0.066	0.000	0.000	0.210	0.000	0.000	0.513
Mar	0.306	0.000	0.000	0.000	0.306	0.000	0.000	0.163	0.000	0.000	0.750
Apr	0.126	0.000	0.000	0.000	0.126	0.000	0.000	0.182	0.000	0.000	0.552
May	0.054	0.000	0.000	0.000	0.054	0.000	0.000	0.194	0.000	0.000	0.600
Jun	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub-total	0.714	0.000	0.000	0.000	0.714	0.000	0.000	0.920	0.000	0.000	3.184
Jul	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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	0.714	0.000	0.000	0.000	0.714	0.000	0.000	0.920	0.000	0.000	3.184

Note:

1. For non-inert portion of C&D material, assume the density of 1 m³ general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m³ 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 2022 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 ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]
Jan	2.835	0.000	0.000	0.000	2.835	0.530	0.000	0.000	0.000	0.000	0.160
Feb	0.199	0.000	0.000	0.000	0.199	1.049	0.000	0.000	0.000	0.000	0.048
Mar	0.298	0.000	0.000	0.000	0.298	0.780	0.000	0.000	0.000	0.000	0.072
Apr	0.348	0.000	0.000	0.000	0.348	0.567	0.000	0.000	0.000	0.000	0.067
May	0.251	0.000	0.000	0.000	0.251	0.422	0.000	0.000	0.000	0.000	0.110
June	0.000										
SUB-TOTAL	3.931	0.000	0.000	0.000	3.931	3.348	0.000	0.000	0.000	0.000	0.457
Jul	0.000										
Aug	0.000										
Sep	0.000										
Oct	0.000										
Nov	0.000										
Dec	0.000										
TOTAL	3.931	0.000	0.000	0.000	3.931	3.348	0.000	0.000	0.000	0.000	0.457

Note: Conversion to 1000m³ for general refuse is weight in 1000kg multiply by 0.002
 Conversion to 1000m³ 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 m³

Appendix H

Complaint Summary

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Contract Related	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.	Contract 1 (NE/2017/07)	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	Contract 2 (NE/2017/08)	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	Contract 2 (NE/2017/08)	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 barriers 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 those 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 work at Works Area A	Contract 1 (NE/2017/07)	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	Contract 1 (NE/2017/07)	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.	Contract 2 (NE/2017/08)	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.	Contract 1 (NE/2017/07)	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.
8	5-May-20	6-May-20	General	Unwilling to disclose	Construction Dust, Noise, Wastewater	CEDD	NA	The Complainant complained about the noise nuisance generated by evening works, the wastewater generated from site are not well treated, and the dust generation caused by the construction work.	Contract 1 (NE/2017/07) Contract 2 (NE/2017/08)	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.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Contract Related	Follow up action
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.	Contract 1 (NE/2017/07)	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.	Contract 2 (NE/2017/08)	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 exceeded 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.	Contract 1 (NE/2017/07)	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	Contract 1 (NE/2017/07)	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.	Contract 1 (NE/2017/07)	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
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	Contract 1 (NE/2017/07) Contract 2 (NE/2017/08)	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.

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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	Contract 1 (NE/2017/07)	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)	Contract 1 (NE/2017/07)	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 CBRC 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.	Contract 2 (NE/2017/08)	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.
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.	Contract 2 (NE/2017/08)	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 impact to the public.
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.	Contract 2 (NE/2017/08)	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.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Contract Related	Follow up action
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.	Contract 2 (NE/2017/08)	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	Contract 1 (NE/2017/07) Contract 2 (NE/2017/08)	As advised by the Contractor of Contract 1 - Contract No. NE/2017/07 (CRBC), no land base construction work was carried out near Road D9 during the complaint period. 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.	Contract 1 (NE/2017/07)	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. 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 impact to the public.
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.	Contract 1 (NE/2017/07)	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.
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.	Contract 1 (NE/2017/07)	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.	Contract 1 (NE/2017/07)	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.	Contract 2 (NE/2017/08)	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.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Contract Related	Follow up action
27	29-Apr-21	4-May-21	Work Area B	Unwilling to disclose	Noise	EPD	Complaint NCF-N08/RE/00010399-21	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.	Contract 2 (NE/2017/08)	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), the automatic rebar cutting machine is located 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.	Contract 1 (NE/2017/07) Contract 2 (NE/2017/08)	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 recurrence 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 recurrence 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.	Contract 1 (NE/2017/07)	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.
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.	Contract 2 (NE/2017/08)	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.	Contract 1 (NE/2017/07)	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.	Contract 1 (NE/2017/07)	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.	Contract 1 (NE/2017/07)	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.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Contract Related	Follow up action
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.	Contract 1 (NE/2017/07)	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.	Contract 1 (NE/2017/07)	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.
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.	Contract 1 (NE/2017/07)	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	Contract 2 (NE/2017/08)	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.
38	9-Sep-21	10-Sep-21	D9 Road	Resident of Lohas Park	Noise	1823	NA	The Complainant complained about the noise nuisance generated from PME or generator at site area near D9 Road.	Contract 1 (NE/2017/07) Contract 2 (NE/2017/08)	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC) and Contract 2 – Contract No. NE/2017/08 (Build King), no construction work was carried out, and no operation of PME and generator was performed at site area near Road D9 and at Works Area A during restricted hours in September 2021. RSS also confirmed that there is no construction work and no operation of PME during the above-mentioned period at the complaint location. The IR revealed that the complaint is unlikely due to the Project since no construction work was carried out during restricted hours near Road D9 in September 2021. Nevertheless, the Contractor was reminded to strictly follow the requirement stated in the issued construction noise permit when construction work is required during restricted hours.
39	29-Dec-21	29-Dec-21	D9 Road	Unwilling to disclose	Noise	1823	NA	The Complainant complained about the frequency noise from the Project	Contract 1 (NE/2017/07)	As advised by the Contractor of Contract 1 – Contract No. NE/2017/07 (CRBC), all the evening marine work carried out in December 2021 were finished by 22:00 each day. No construction work and no operation of PME was carried out during 22:00 – 00:30 in December 2021. It is also confirmed by RSS that there is no construction work and no operation of PME during the complaint period under the Project. The IR revealed that the complaint is unlikely due to the Project since no construction work was carried out during the complaint period. Nevertheless, the Contractor was reminded to strictly follow the requirement stated in the issued construction noise permit when construction work is required during restricted hours.

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Contract Related	Follow up action
40	7-Feb-22	17-Feb-22	D9 Road	Unwilling to disclose	Water Quality	EPD	N08/RE/00003264-22	The Complainant complained about the muddy discharge at construction site of Cross Bay Link Project at 09:45 on 7 February 2022	Contract 2 (NE/2017/08)	As advised by the Contractor of Contract 2 – Contract No. NE/2017/08 (Build King), backfilling work was carried out near Lohas Park Phase 6 on 7 February 2022. No concreting work nor other construction works that may generate muddy water was carried out near Lohas Park Phase 6 on 7 February 2022. According to the photo record provided by the complainant, no muddy water was observed on site and no trace of surface runoff/wastewater direct discharge from site was observed. The muddy water 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 muddy water would be generated by the construction work on 7 February 2022 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.
41	17-Mar-22	28-Apr-22	Junk Bay	Resident of Island Resort, Siu Sai Wan	Noise	EPD	H20/RS/00005292-22	The Complainant complained about the noise nuisance caused by work barge at Junk Bay on 17 March 2022 evening	Contract 1 (NE/2017/07)	A complaint was received by EPD regarding the noise nuisance caused by marine construction vessels on 17 March 2022 evening. As advised by the Contractor of Contract 1, no marine work and no operation of PME was carried out at Junk Bay on 17 March 2022 after 19:00. It is confirmed by RSS that there is no marine work and no operation of PME during the complaint period under the Project. EPD carried out investigation regarding the complaint and revealed that there was a noisy tug boat towing a barge at the Junk Bay toward Lei Yue Mun direction at around 00:00 on 15 April 2022. However, it is not sure if the tug boat is related to Cross Bay Link Project. Besides, as advised by the Contractor of Contract 1, no marine work and no operation of tug boat was carried out on 14 April 2022 after 19:00 under the Project. The Investigation conducted by the ET revealed that the complaint is not related to the Project since no construction work was carried out during the complaint period.
42	2-May-22	12-May-22	Junk Bay	Unwilling to disclose	Noise	1823	NA	The Complainant complained about the noise nuisance caused by construction work under CEDD Contract NE 201707 on 2 May 2022	Contract 1 (NE/2017/07)	A complaint was received by 1823 regarding the noise nuisance construction work under CEDD Contract NE/2017/07 on 2 May 2022 which is a public holiday. The complainant did not specified the concerned location. As advised by the Contractor of Contract 1 (CRBC), no land base and marine construction work, and no operation of PME was carried out on 2 May 2022 under the Project. It is also confirmed by RSS that there is no construction work and no operation of PME during the complaint period under the Project. The Investigation conducted by the ET revealed that the complaint is not related to the Project since no construction work was carried out during the complaint period.
43	13-May-22	18-May-22	D9 Road	Unwilling to disclose	Water Quality	EPD	N08/RE/00009330-22	The Complainant complained about the suspected muddy water discharge to Junk Bay under CEDD Contract NE 2017/08 on 13 May 2022	Contract 2 (NE/2017/08)	A complaint was received by EPD regarding the muddy discharge suspected from the construction site under CEDD Contract No. NE 2017/08 on 13 May 2022. As advised by the Contractor of Contract 2 (Build King), cable shifting work at Wan O Road and general site cleaning work were carried out on 13 May 2022. No concreting work nor other construction works that may generate muddy water was carried out on 13 May 2022. As observed from the site photos taken on 13 May 2022, no trace of surface runoff/wastewater direct discharge from site was observed. In addition, muddy water was observed being discharged to Junk Bay from the box culvert during ET's site inspection on 11 May 2022 while no muddy water discharged from site was found during the inspection. The Investigation conducted by the ET revealed that the complaint is not related to the Project since no construction work was carried out during the complaint period.

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	
Dust Impact (Contraction Phase)						
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"> • APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation
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"> • 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; • Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads; • A stockpile of dusty material shall not extend beyond the pedestrian barriers, fencing or traffic cones; • 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; • 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; • 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; • The portion of any road leading to the construction site that is within 30m of a vehicle entrance or exit shall be kept clear 	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"> • APCO (Cap. 311); and • Air Pollution Control (Construction Dust) Regulation

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"> 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; 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; 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; Any skip hoist for material transport shall be totally enclosed by impervious sheeting; 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. 					
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"> All road surfaces within the barging facilities shall be paved. Vehicles should pass through designated wheel wash facilities. Continuous water spray shall be installed at the loading point. 	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"> APCO (Cap. 311); and Air Pollution Control (Construction Dust) Regulation
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"> APCO (Cap. 311); and Air Pollution Control (Construction Dust) Regulation
Noise Impact (Contraction Phase)						

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"> • Only well-maintained plant shall be operated on-site and the plant shall be serviced regularly during the construction programme; • 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; • Plant known to emit noise strongly in one direction, where possible, shall be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment shall be properly fitted and maintained during the construction works; • Mobile plant shall be sited as far away from NSRs as possible and practicable; and • Material stockpiles, site office and other structures shall be effectively utilised, where practicable, to screen noise from on-site construction activities. 	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"> • Annex 5, TM-EIAO
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"> • Annex 5, TM-EIAO
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"> • Annex 5, TM-EIAO
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"> • Annex 5, TM-EIAO
	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 (Drawing no. 209506/EMA/NS/001 & 209506/EMA/NS/002)	Contractor	Construction stage	<ul style="list-style-type: none"> • Annex 5, TM-EIAO
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 (Drawing no. 209506/EMA/NS/003)	CEDD/ Contractor	During operational stage	<ul style="list-style-type: none"> • Annex 5, TM-EIAO

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Water Quality Impact (Contraction Phase)						
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"> • All marine piling and pile excavation works shall be conducted within a floating single silt curtain. • Mechanical closed grabs (with a size of 5m³) shall be designed and maintained to avoid spillage and should seal tightly while being lifted. • Barges shall have tight fitting seals to their bottom openings to prevent leakage of material. • Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes. • 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. • Excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved. • Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action. • 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. • 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. 	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"> • TM-EIAO; and • WPCO
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"> • The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The 	Control potential water quality impacts from construction site run-off	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • TM-EIAO; and • WPCO

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
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	<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"> Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ 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; 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; Construction solid waste, debris and rubbish on site shall be collected, handled and disposed of properly to avoid water quality impacts; 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 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. 					
S8.6.4.6	<p>Sewage from workforce</p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks shall be provided for handling the construction sewage generated by the workforce; A licensed contractor shall be employed to provide 	Control potential water quality impacts from sewage	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> TM-EIAO; and WPCO

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
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	appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.					
	Monitoring 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 (Drawing no. 209506/EMA/WQ/001)	Contractor	Construction station	<ul style="list-style-type: none"> • TM-EIAO; and • WPCO
S8.7.3.2	Operational phase – Runoff from road surface 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"> • TM-EIAO; and • WPCO
Waste Management (Contraction Phase)						
S9.5.2	Good Site Practices Recommendations for good site practices: <ul style="list-style-type: none"> • 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; • Training of site personnel in proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • Implementation of a recording system for the amount of wastes generated/recycled and disposal sites. 	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"> • Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

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
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S9.5.4	<p><u>Waste Reduction Measures</u> Recommendations for achieving waste reduction include:</p> <ul style="list-style-type: none"> • On-site reuse of any material excavated as far as practicable; • 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; • 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; • Recycling of any unused chemicals and those with remaining functional capacity as far as possible; • Prevention of the potential damage or contamination to the construction materials through proper storage and good site practices; • Planning and stocking of construction materials should be made carefully to minimize amount of waste generated avoid unnecessary generation of waste; and • Training on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling should be provided to workers. 	To reduce amount of waste generated during construction phase	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005
S9.5.5-6	<p><u>Storage, Collection and Transportation of Waste</u> Recommendations for proper storage include:</p> <ul style="list-style-type: none"> • Waste such as soil should be handled and stored well to ensure secure containment; • 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 • Different locations should be designated to stockpile each material to enhance reuse. <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"> • Remove waste in a timely manner; • Employ trucks with cover or enclosed containers for waste transportations; • Obtain relevant waste disposal permits from the appropriate 	To reduce the environmental implications of improper storage	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

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

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	<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"> Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation; Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP; and Barges should not be filled to a level that would cause the overflow of materials or sediment-laden water during loading or transportation. 					
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"> Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; Have a capacity of less than 450 L unless the specification have been approved by EPD; and Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. <p>The storage area for chemical wastes shall:</p> <ul style="list-style-type: none"> Be clearly labelled and used solely for the storage of chemical wastes; Be enclosed on at least 3 sides; 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; 	To ensure proper management of chemical waste	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

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	<ul style="list-style-type: none"> Have adequate ventilation; Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and Be arranged so that incompatible materials are adequately separated. Disposal of chemical waste shall: <ul style="list-style-type: none"> Be via a licensed waste collector; and 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 Be to a re-user of the waste, under approval from EPD. 					
S9.5.18	<p>Sewage 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"> Waste Disposal Ordinance (Cap. 54)
S9.5.19	<p>General Refuse 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"> Waste Disposal Ordinance (Cap. 54)
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"> TM-EIAO; and WPCO
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"> TM-EIAO; and WPCO
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 (Drawing no. 209506/EMA/WQ/001)	Contractor	Construction stage	<ul style="list-style-type: none"> TM-EIAO; and WPCO

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		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"> • TM-EIAO; and • WPCO
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"> • TM-EIAO; and • WPCO
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 (Drawing no. 209506/EMA/WQ/001)	Contractor	Construction stage	<ul style="list-style-type: none"> • TM-EIAO; and • WPCO
Landscape and Visual						
S13.8.1.2	The following mitigation measures should be implemented in the construction stage <ul style="list-style-type: none"> • CM1 – The construction area and contractor’s temporary works areas should be minimized to avoid impacts on adjacent landscape. • CM2 – Reduction of construction period to practical minimum. • 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. • 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). 	Minimize effects of landscape and visual impacts	Work site/during construction	Funded and implemented by CEDD	Construction stage	

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	<ul style="list-style-type: none"> 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. CM6 – Advance screen planting to proposed roads and associated structures. CM7 – hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone). CM8 – Screening of construction works by hoardings/noise barriers around works area in visually unobtrusive colours, to screen Works. CM9 – Control night-time lighting and glare by hooding all lights. CM10 – Ensure no run-off into water body adjacent to the Project Area. CM11 – Avoidance of excessive height and bulk of buildings and structures 					
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"> 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. OM3 – Maximise soft landscape of the site, where space permits, roadside berms /slope treatment works should be created. OM4 – During detailed design, refine structure layout to create a planting strips along the roads to enhance greenery. OM5 – Use appropriate (visually unobtrusive and 	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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	non-reflective) building materials and colours, and aesthetic design in built structures. <ul style="list-style-type: none"> • 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. • OM7 – Avoidance of excessive height and bulk of buildings and structures 					
Landfill Gas						
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"> • 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. • 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. • 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. • 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. • 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 	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"> • Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)

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	<p>leachate.</p> <ul style="list-style-type: none"> • Ground level construction plant shall be fitted with vertical exhausts at least 0.6m above ground level and with spark arrestors. • 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. • 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. • 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. • 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 					

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	<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"> During the construction works, adequate fire extinguishers and breathing apparatus sets shall be made available on site and appropriate training given in their use. 					
S14.7.6	<p>Landfill gas monitoring 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"> 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. 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. All measurements shall be made with the monitoring tube located not more than 10mm from the surface. 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. 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. 	Health and safety of the workers	Confined space of construction sites within 250m Consultation Zone	Contractor	Construction stage	<ul style="list-style-type: none"> Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97)
S14.7.8-9	<p>Emergency management 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"> Landfill Gas Hazard Assessment

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	<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>Protection measures – Operational phase</p> <ul style="list-style-type: none"> • An assumed presence of landfill gas shall be adopted at all times by maintenance workers; • all maintenance workers inspecting any manhole shall be fully trained in the issue of LFG hazard; • any manhole which is large enough to permit to access to personnel shall be subject to entry safety procedure; • 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; • a strictly regulated “work permit procedure” shall be implemented and the relevant safety procedures must be rigidly followed; and • Adequate communication with maintenance staff shall be maintained with respect to LFG. 	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"> • Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and • Code of Practice on Safety and Health at Work in Confined Space
S14.7.17	<p>General recommended precautionary & protection measures – Operational phase</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"> • Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97); and • Code of Practice on Safety and Health at Work in Confined Space