

**Contract No. HY/2017/10
Tuen Mun - Chek Lap Kok Link -
Northern Connection Tunnel
Buildings, Electrical and Mechanical
Works**

Thirty-Fourth Monthly EM&A Report

16 April 2021

Environmental Resources Management
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Contract No. HY/2017/10 Tuen Mun – Chek Lap Kok Link – Northern Connection Tunnel Buildings, Electrical and Mechanical Works

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Thirty-Fourth Monthly EM&A Report

Document Code: 0463091_34th Monthly EM&A_20210416.doc

Client: Gammon		Project No: 0463091			
Summary: This document presents the Thirty-Fourth Monthly EM&A Report for Tuen Mun – Chek Lap Kok Link – Northern Connection Tunnel Buildings, Electrical and Mechanical Works.		Date: 16 April 2021			
		Approved by: 			
		Mr Craig Reid Partner			
		Certified by: 			
		Dr Jasmine Ng ET Leader			
	Thirty-Fourth Monthly EM&A Report	CW	JN	CAR	16/4/21
Revision	Description	By	Checked	Approved	Date
<p>This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.</p> <p>We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.</p>		<p>Distribution</p> <p><input type="checkbox"/> Internal</p> <p><input checked="" type="checkbox"/> Public</p> <p><input type="checkbox"/> Confidential</p>			
		 			

By Fax (2783 0155) and By Post

AECOM Asia Company Limited
Supervising Officer's Representative Office
No. 8 Mong Fat Street, Tuen Mun, New Territories, Hong Kong

Attention: Mr. Desmond Fung

Dear Mr. Fung,

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

**Contract No. HY/2017/10
TM-CLKL – Northern Connection Tunnel Buildings, E&M Works
34th Monthly EM&A Report for March 2021**

Reference is made to the Environmental Team's submission of the monthly EM&A report for March 2021 (ET's ref.: "0463091_34thMonthly EM&A_20210416.doc" dated 16 April 2021) certified by the ET Leader and provided to us via e-mail on 16 April 2021.

Please be informed that we have no adverse comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/D.

Thank you for your attention. Please feel free to contact the undersigned or the ENPO Leader, Mr. Y H Hui, should you require further information.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited



Brian Tam
Independent Environmental Checker
Tuen Mun-Chek Lap Kok Link

c.c.

HyD	Mr. Patrick Ng	(By Fax: 3188 6614)
HyD	Mr. Alan Ip	(By Fax: 3188 6614)
AECOM	Mr. Conrad Ng	(By Fax: 3922 9797)
ERM	Dr. Jasmine Ng	(By Fax: 2723 5660)
Gammon	Mr. Max Poon	(By Fax: 3520 0486)

Internal: DY, YH, ENPO Site

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EXECUTIVE SUMMARY

Under *Contract No. HY/2017/10*, Gammon Construction Limited (GCL) is commissioned by the Highways Department (HyD) to undertake Northern Connection Tunnel Buildings, Electrical and Mechanical Works of the Tuen Mun – Chek Lap Kok Link Project (TM-CLK Link Project) while AECOM Asia Company Limited was appointed by HyD as the Engineer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET) in accordance with *Environmental Permit No. EP-354/2009/A*. Ramboll Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO). Subsequent applications for variation of environmental permits (VEP), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

The construction phase of the Contract commenced on 7 June 2018 and will tentatively be completed by 2021. The impact monitoring of the EM&A programme, including air quality and environmental site inspections, were commenced on 7 June 2018.

Termination proposal for construction EM&A programme was approved by EPD on 26 March 2021. The construction phase EM&A programme of the Contract has been terminated since 26 March 2021.

This is the Thirty-Fourth Monthly EM&A report presenting the EM&A works carried out during the period from 1 to 26 March 2021 for the *Contract No. HY/2017/10 Northern Connection Tunnel Buildings, Electrical and Mechanical Works* (the “Contract”) in accordance with the Updated EM&A Manual of the TM-CLK Link Project. As informed by the Contractor, major activities in the reporting period included:

Land-based Works

- Minor work at Fire Services Department Building;
- Minor work at Customs and Excise Department Building; and
- Minor works at Kiosk N1, Kiosk N2 and Kiosk S2.

A summary of monitoring and audit activities conducted in the reporting period is listed below ⁽¹⁾:

24-hour TSP Monitoring	3 sessions
------------------------	------------

(1) ET justification on the Contract Specific Environmental Monitoring and Audit activities under this Contract was submitted to ENPO on 11 September 2018

1-hour TSP Monitoring	3 sessions
Landfill Gas Hazard Monitoring	23 days
Joint Environmental Site Inspection	4 sessions

Summary of Breaches of Action/Limit Levels

Breaches of Action and Limit Levels for Air Quality

No Action Level and Limit Level exceedances for 1-hour TSP and 24-hour TSP were recorded by the Environmental Team of Contract No. HY/2012/08 during the reporting period.

Notification of temporary suspension of air quality monitoring has been approved by EPD on 16 March 2021.

Breaches of Action Level for Landfill Gas Hazard Monitoring

Results of landfill gas hazard monitoring in the reporting month complied with the Action Level.

Environmental Complaints, Non-compliance & Summons

There was no environmental complaint, notification of summons or successful prosecution recorded in the reporting period.

Reporting Change

Landscape and visual monitoring for 24-month establishment period for Southern Landfall, Northern Landfall and Main Control Building under this Contract was reported in this reporting period.

Termination proposal for construction EM&A programme was approved by EPD on 26 March 2021. The construction phase EM&A programme of the Contract has been terminated since 26 March 2021.

Upcoming Works for the Coming Month

No major works will be undertaken in April 2021.

Future Key Issues

No major works will be undertaken in April 2021.

According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway would be operating beyond capacity after 2016. This forecast has been based on the estimated increase in cross boundary traffic, developments in the Northwest New Territories (NWNT), and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong – Zhuhai – Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new road sections between NWNT and North Lantau – Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) are proposed.

An Environmental Impact Assessment (EIA) of TM-CLKL (the Project) was prepared in accordance with the EIA Study Brief (No. ESB-175/2007) and the *Technical Memorandum of the Environmental Impact Assessment Process (EIAO-TM)*. The EIA Report was submitted under the Environmental Impact Assessment Ordinance (EIAO) in August 2009. Subsequent to the approval of the EIA Report (EIAO Register Number AEIAR-146/2009), an Environmental Permit (EP-354/2009) for TM-CLKL was granted by the Director of Environmental Protection (DEP) on 4 November 2009, and EP variation (VEP) (EP-354/2009/A) was issued on 8 December 2010. Subsequent applications for variation of environmental permits (VEPs), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

Under *Contract No. HY/2017/10*, Gammon Construction Limited (GCL) is commissioned by the Highways Department (HyD) to undertake the Northern Connection Tunnel Buildings, Electrical and Mechanical Works of TM-CLKL while AECOM Asia Company Limited was appointed by HyD as the Engineer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). Ramboll Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO).

The construction phase of the Contract commenced on 7 June 2018 and will be tentatively completed by 2021. The impact monitoring phase of the EM&A programme, including air quality and environmental site inspections, commenced on 7 June 2018.

The general layout plan of the Contract components is presented in *Figures 1.1 & 1.2a to c*.

Project Management Initials: Designer: KATH Checked: SYLC Approved: CWN ISO A1 594mm x 841mm

Plot File by: Jerry Wong 23-Jan-18
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PROJECT
 TUEN MUN -
 CHEK LAP KOK LINK

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK
 - NORTHERN CONNECTION TUNNEL
 BUILDINGS, ELECTRICAL AND
 MECHANICAL WORKS

CLIENT

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

CONSULTANT
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Figure 1.1

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
A	JAN.18	TENDER ADDENDUM NO.1	SYLC
-	DEC.17	TENDER DRAWING	SYLC

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DIMENSION UNIT
 MILLIMETRES

KEY PLAN

PROJECT NO. 60240249
CONTRACT NO. HY/2017/10

SHEET TITLE
 OVERALL SITE PLAN

SHEET NUMBER
 60240249/C4/7051A

Plot File by: jerry.wong 23-Jan-18
 PATH: Y:\1010\SS\NS\C4 Drawings\C4_Drawing (2018_01_02)\Architectural drawings - DSN\60240249_C4_7061.dgn
 Project Management Initials: Designer: KATH Checked: SYLC Approved: CWN ISO A1 594mm x 841mm
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PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TUNNEL BUILDINGS, ELECTRICAL AND MECHANICAL WORKS

CLIENT
路政署 HIGHWAYS DEPARTMENT
港務局 大橋香港工程管理有限公司
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Figure 1.2a

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
A	JAN.18	TENDER ADDENDUM NO.1	SYLC
-	DEC.17	TENDER DRAWING	SYLC

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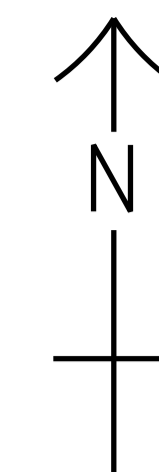
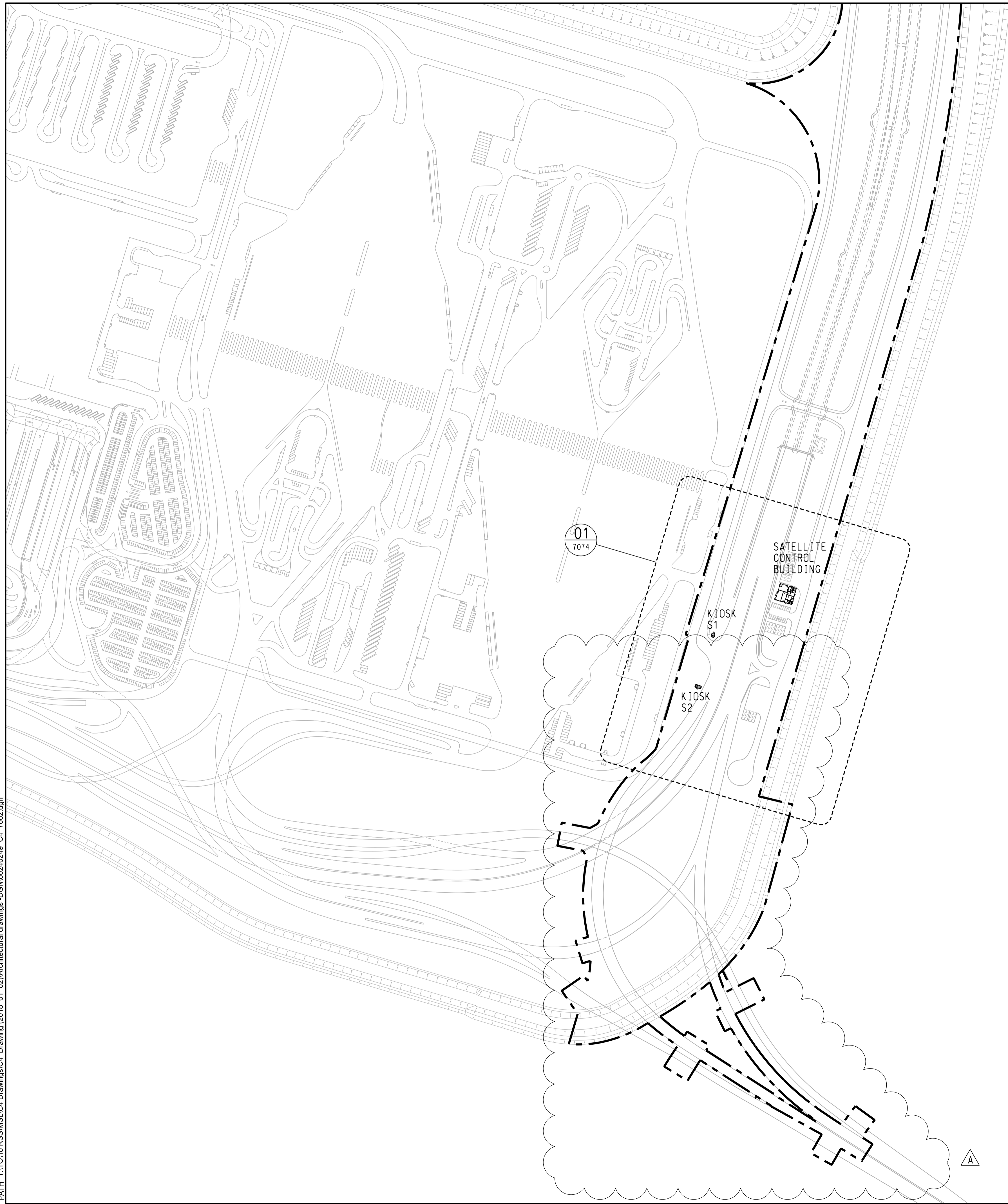
KEY PLAN

PROJECT NO.: 60240249
CONTRACT NO.: HY/2017/10

SHEET TITLE: ZONING PLAN (SHEET 1)

SHEET NUMBER: 60240249/C4/7061A

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PROJECT
 項目

**TUEN MUN -
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CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK
 - NORTHERN CONNECTION TUNNEL
 BUILDINGS, ELECTRICAL AND
 MECHANICAL WORKS

CLIENT
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Figure 1.2b

ISSUE/REVISION
 修訂

I/R 修訂	DATE 日期	DESCRIPTION 修訂描述	CHK. 核校
A	JAN.18	TENDER ADDENDUM NO.1	SYLC
-	DEC.17	TENDER DRAWING	SYLC

STATUS
 階段

SCALE
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A1 1 : 2500

DIMENSION UNIT
 尺寸單位

MILLIMETRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號

60240249

CONTRACT NO.
 合約編號

HY/2017/10

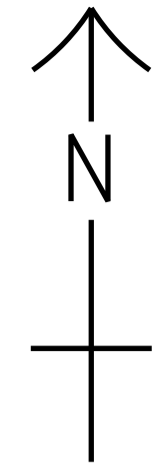
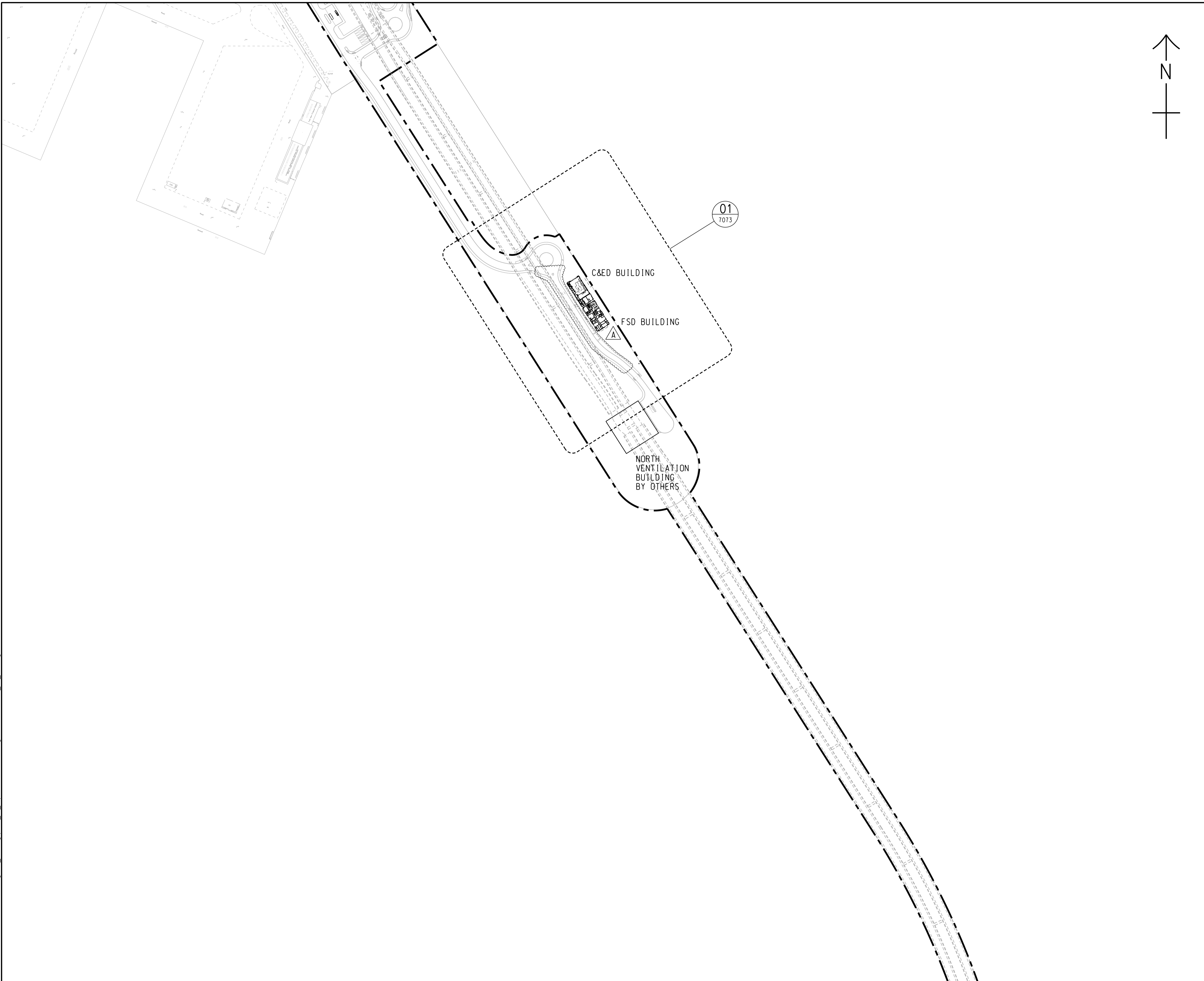
SHEET TITLE
 圖號/名稱

ZONING PLAN
 (SHEET 2)

SHEET NUMBER
 圖號/圖號

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PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TUNNEL BUILDINGS, ELECTRICAL AND MECHANICAL WORKS

CLIENT
 業主

 路政署
HIGHWAYS DEPARTMENT
 港珠澳大橋香港工程管理局
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Figure 1.2c

ISSUE/REVISION
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I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	核校
A	JAN.18	TENDER ADDENDUM NO.1	SYLC
-	DEC.17	TENDER DRAWING	SYLC

STATUS
 階段

SCALE
 比例
 A1 1 : 2500

DIMENSION UNIT
 尺寸單位
 MILLIMETRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60240249

CONTRACT NO.
 合約編號
 HY/2017/10

SHEET TITLE
 圖紙名稱
 ZONING PLAN
 (SHEET 3)

SHEET NUMBER
 圖紙編號
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Termination proposal for construction EM&A programme was approved by EPD on 26 March 2021. The construction phase EM&A programme of the Contract has been terminated since 26 March 2021.

1.2 SCOPE OF REPORT

This is the Thirty-Fourth Monthly EM&A Report under the *Contract No. HY/2017/10 Tuen Mun – Chek Lap Kok Link – Northern Connection Tunnel Buildings, Electrical and Mechanical Works*. This report presents a summary of the environmental monitoring and audit works in March 2021.

1.3 ORGANIZATION STRUCTURE

The organization structure of the Contract is shown in *Appendix A*. The key personnel contact names and contact details are summarized in *Table 1.1* below.

Table 1.1 *Contact Information of Key Personnel*

Party	Position	Name	Telephone	Fax
HyD (Highways Department)	Project Coordinator	Joseph Lee	2762 4958	3188 6614
	Senior Engineer	Cheng Pan	2762 3383	3188 6614
ER (AECOM Asia Company Limited)	Principle Resident Engineer	S. W. Fok	2293 6200	2293 6300
	Resident Engineer	Desmond Fung	2293 6200	2293 6300
ENPO / IEC (Ramboll Hong Kong Ltd.)	ENPO Leader	Y.H. Hui	3465 2850	3465 2899
	IEC	Brian Tam ⁽¹⁾	9700 6767	3465 2899
Contractor (Gammon Construction Limited)	Site Agent	H. H. Lee	6096 6281	-
	Environmental Officer	Phoebe Ng	9869 1105	-
ET (ERM-HK)	ET Leader	Dr. Jasmine Ng	2271 3311	2723 5660

(1) The role and responsibilities as the IEC of the Contract has been taken up by Mr Brian Tam instead of Mr. Manson Yeung since 12 April 2021.

1.4 SUMMARY OF CONSTRUCTION WORKS

The construction phase of the Contract commenced on 7 June 2018. The three-month rolling construction programme is shown in Appendix B.

As informed by the Contractor, details of the works carried out in this reporting month are listed below:

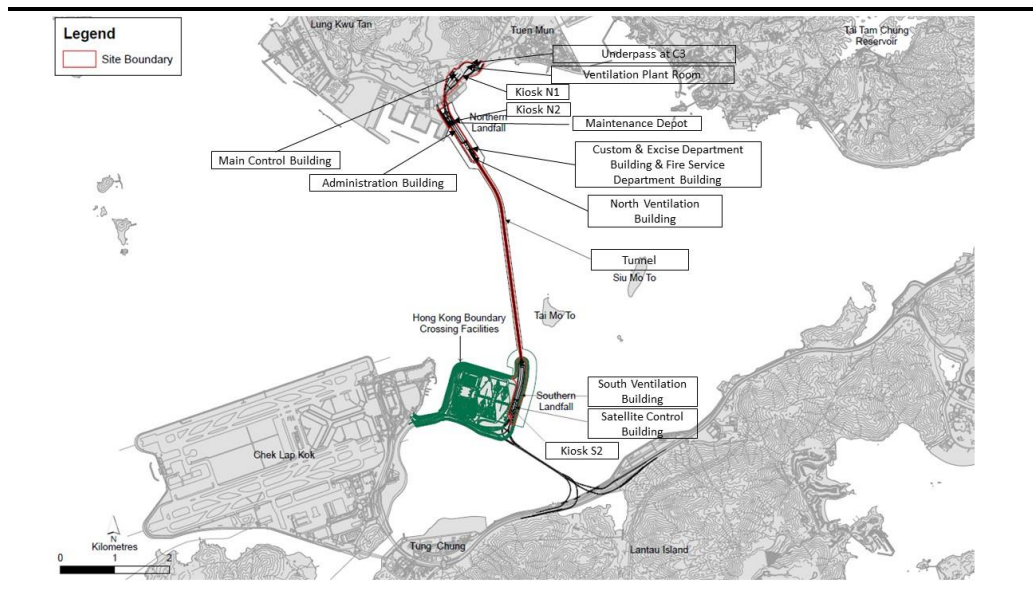
Land-based Works

- Minor work at Fire Services Department Building;
- Minor work at Customs and Excise Department Building; and
- Minor works at Kiosk N1, Kiosk N2 and Kiosk S2.

The locations of the construction activities are shown in *Figure 1.3*. The Environmental Sensitive Receivers in the vicinity of the Contract are shown in *Figure 1.4*.

The implementation schedule of environmental mitigation measures is presented in *Appendix C*.

Figure 1.3 *Locations of Major Construction Activities in the Reporting Month*



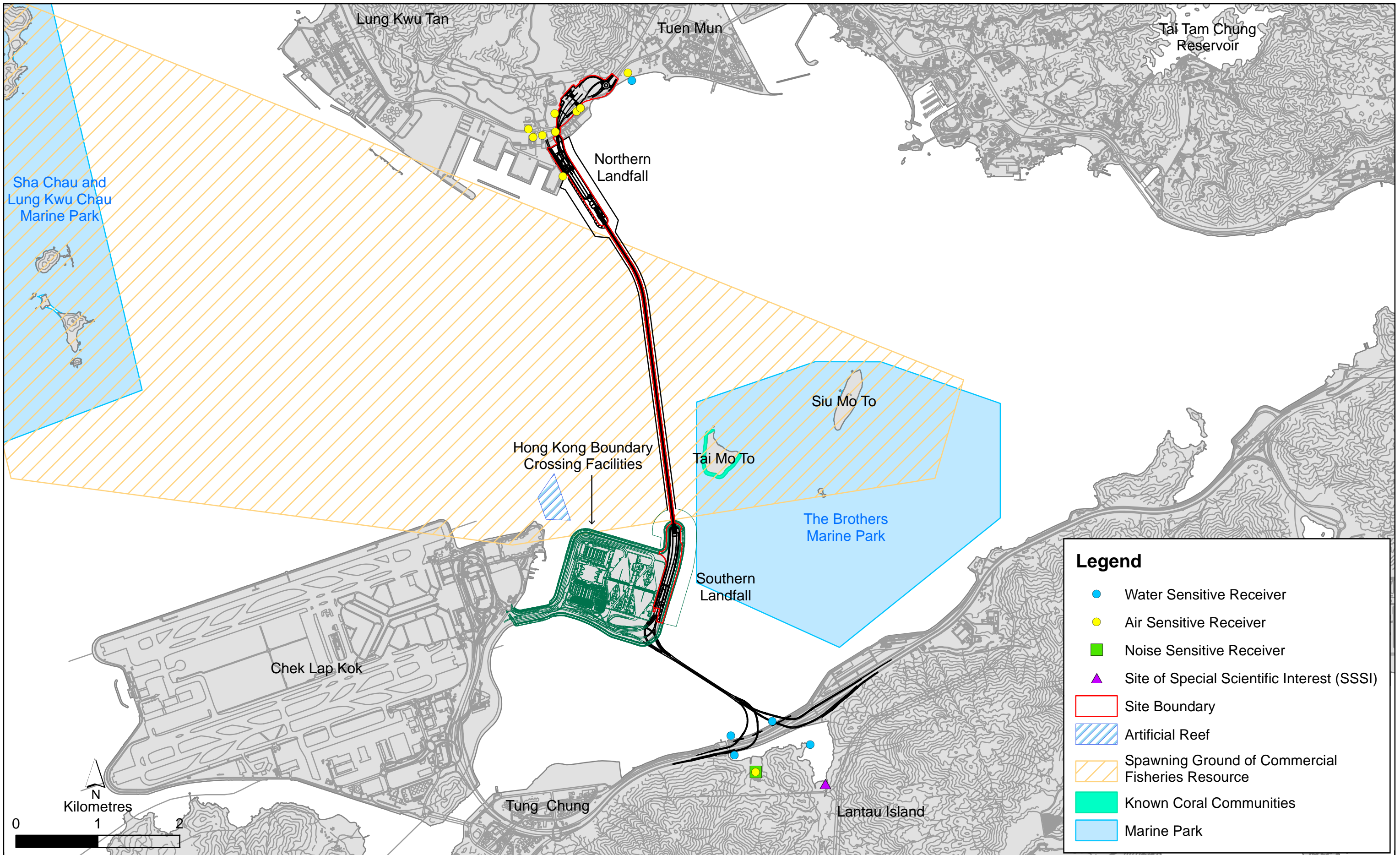


Figure 1.4

Environmental Sensitive Receivers in the Vicinity of the Project

The EM&A programme required environmental monitoring for air quality and environmental site inspections for air quality, water quality and waste management. The EM&A requirements and related findings for each component are summarized in the following sections

2.1 AIR QUALITY

2.1.1 Monitoring Requirements and Equipment

In accordance with the Updated EM&A Manual and the Enhanced TSP Monitoring Plan, impact 1-hour TSP monitoring was conducted three (3) times every six (6) days and impact 24-hour TSP monitoring was carried out once every six (6) days when the highest dust impact was expected. 1-hr and 24-hr TSP monitoring frequency was increased to three times per day every three days and daily every three days, respectively, as excavation works for launching shaft under *Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section* commenced on 24 October 2014.

Informed by the Environmental Team of *Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section*, excavation works for launching shaft were completed and notification of change on air quality monitoring frequency was submitted to EPD on 14 September 2020. 1-hr and 24-hr TSP monitoring frequency was changed to three times per day every six days and daily every six days, respectively, since 14 September 2020.

Results of air quality monitoring were adopted from the published EM&A data of *Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section* ⁽¹⁾.

The Action and Limit Levels of the air quality monitoring were adopted from the published EM&A reports of *Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section* ⁽²⁾. The Action and Limit Levels are provided in *Appendix D*.

The locations of the monitoring stations overlapped with *Contract No. HY/2012/08* are shown in *Figure 2.1* and presented in *Table 2.1*.

Notification of temporary suspension of air quality monitoring has been approved by EPD on 16 March 2021.

(1) Published EM&A data for impact air quality monitoring by *Contract No. HY/2012/08* are available at: <http://www.hzmbenpo.com/>

(2) Published EM&A reports of *Contract No. HY/2012/08* are available at: <http://www.hzmbenpo.com/>

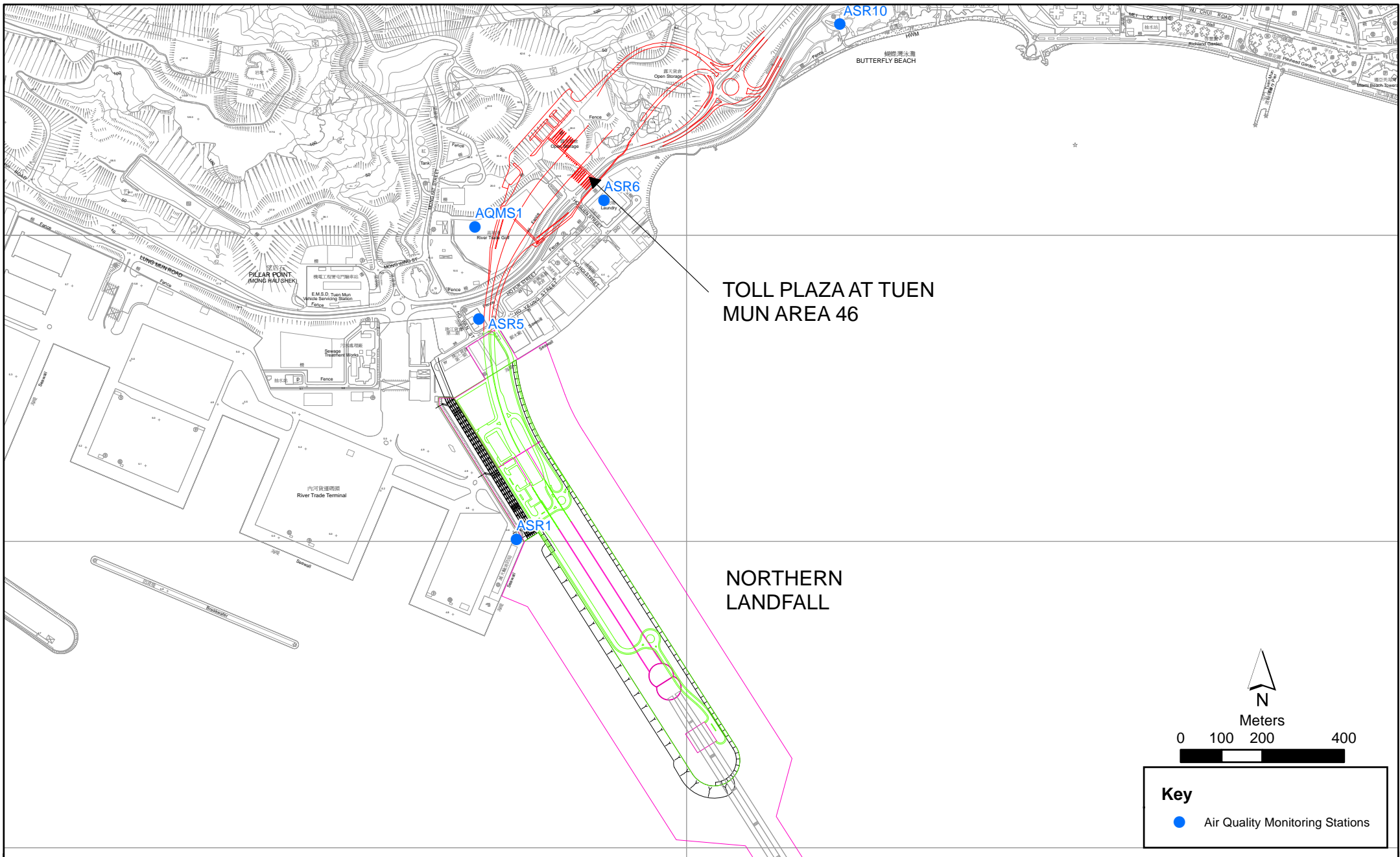


Figure 2.1

Air Quality Monitoring Stations for the Enhanced TSP Monitoring
 (Source: Adopted from Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link -
 Northern Connection Sub-sea Tunnel Section)

Table 2.1 *Locations of Impact Air Quality Monitoring Stations and its Corresponding Monitoring Requirements*

Monitoring Station	Monitoring Dates	Location	Description	Parameters & Frequency
ASR1	4, 10 and 16 March 2021	Tuen Mun Fireboat Station	Office	TSP monitoring <ul style="list-style-type: none"> 1-hour Total Suspended Particulates (1-hour TSP, $\mu\text{g}/\text{m}^3$), 3 times in every 6 days
ASR5		Pillar Point Fire Station	Office	<ul style="list-style-type: none"> 24-hour Total Suspended Particulates (24-hour TSP, $\mu\text{g}/\text{m}^3$), daily for 24-hour in every 6 days
AQMS1		Previous River Trade Golf	Bare ground	Enhanced TSP monitoring (commenced on 24 October 2014 under <i>Contract No. HY/2012/08</i>)
ASR6		Butterfly Beach Laundry	Office	<ul style="list-style-type: none"> 1-hour Total Suspended Particulates (1-hour TSP, $\mu\text{g}/\text{m}^3$), 3 times in every 3 days
ASR10		Butterfly Beach Park	Recreational uses	<ul style="list-style-type: none"> 24-hour Total Suspended Particulates (24-hour TSP, $\mu\text{g}/\text{m}^3$), daily for 24-hour in every 3 days

2.1.2 *Results and Observations*

Results of air quality monitoring were adopted from the published EM&A data of *Contract No. HY/2012/08 Tuen Mun-Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section* ⁽¹⁾.

No Action Level and Limit Level exceedances for 1-hour TSP and 24-hour TSP were recorded by the Environmental Team of *Contract No. HY/2012/08* during the reporting period. No action is required to be undertaken in accordance with the Event Action Plan as presented in *Appendix E*.

2.2 *LANDFILL GAS HAZARD MONITORING*

In accordance with the Updated EM&A Manual of the TM-CLK Link Project, landfill gas hazard monitoring should be performed to ensure that the works area at Pillar Point Valley (PPV) Landfill is free of landfill gas. A total of 23 days of landfill gas hazard monitoring was conducted at Main Control Building during 1 to 26 March 2021 (*Appendix F*).

The landfill gas hazard monitoring was conducted in accordance to the Updated EM&A Manual with a Altair 5X Gas Detector. The calibration certificate for the equipment is presented in *Appendix G*.

The Action Level of the landfill gas hazard monitoring was adopted from the Updated EM&A Manual of the TM-CLK Link Project and are provided in *Appendix D*.

(1) Published EM&A data for impact air quality monitoring by *Contract No. HY/2012/08* are available at: <http://www.hzmbenpo.com/>

2.2.1 Results and Observations

Results for landfill gas hazard monitoring are summarized in *Table 2.2* and the monitoring data is provided in *Appendix H*.

Results of methane, oxygen and carbon dioxide in the reporting month complied with the Action Level. No action as stated in the Updated EM&A Manual of the TM-CLK Link Project and presented in *Appendix D* is required to be undertaken.

Table 2.2 *Summary of Landfill Gas Hazard Monitoring Results in the Reporting Period*

	Average (%)	Range (%)	Action Level (%) ^(a)
Methane	0	0	10/20
Oxygen	20.8	20.8-20.8	19/18
Carbon Dioxide	0.03	0.03-0.03	0.5/1.5

Notes:

(a) Depending on the results of the measurements, actions required will vary. Actions in the event of landfill gas being detected in excavation/confined area was adopted from the Updated EM&A Manual of the TM-CLK Link Project.

2.3 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting month, four (4) site inspections were carried out on 5, 12, 19 and 26 March 2021.

Key observations and recommendations during the site inspections in this reporting period are summarized in *Table 2.3*.

Table 2.3 *Specific Observations and Recommendations during the Weekly Site Inspection in this Reporting Month*

Inspection Date	Observations	Recommendations/ Remarks
5 March 2021	Container Village <ul style="list-style-type: none"> Watering was not provided for wheelwash. 	Container Village <ul style="list-style-type: none"> The Contractor was reminded to provide watering for wheelwash.
12 March 2021	Customs and Excise Department Building <ul style="list-style-type: none"> Chemicals were observed not placed in drip tray. Oil inside the drip tray should be cleared. 	Customs and Excise Department Building <ul style="list-style-type: none"> The Contractor was reminded to place chemicals in drip tray. The Contractor was reminded to clear the oil inside the drip tray.
19 March 2021	Customs and Excise Department Building <ul style="list-style-type: none"> Nil. 	Customs and Excise Department Building <ul style="list-style-type: none"> Nil.
26 March 2021	Customs and Excise Department Building <ul style="list-style-type: none"> Nil. 	Customs and Excise Department Building <ul style="list-style-type: none"> Nil.

The Contractor has rectified all of the observations as identified during environmental site inspections in the reporting month.

2.4 WASTE MANAGEMENT STATUS

The Contractor had submitted application form for registration as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

Wastes generated during this reporting period included mainly construction wastes (inert and non-inert). Reference has been made to the waste flow table prepared by the Contractor (*Appendix I*). The quantities of different types of wastes are summarized in *Table 2.4*.

Table 2.4 Quantities of Different Waste Generated in the Reporting Month

Month/Year	Inert C&D Materials ^(a) (m ³)	Inert Construction Waste Re-used (m ³)	Non-inert Construction Waste ^(b) (kg)	Imported Fill (m ³)	Recyclable Materials ^(c) (kg)	Chemical Wastes (kg)
March 2021	0	0	31,050	0	0	0

Notes:

- (a) Inert construction wastes include hard rock and large broken concrete disposed as public fill.
- (b) Non-inert construction wastes include general refuse disposed at landfill.
- (c) Recyclable materials include metals, paper, cardboard, plastics, timber and others.

The Contractor was advised to properly maintain on site C&D materials and waste collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse/ recycle of C&D materials and wastes. The Contractor was also reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

For chemical waste containers, the Contractor was reminded to treat properly and store temporarily in designated chemical waste storage area on site in accordance with the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*.

2.5 ENVIRONMENTAL LICENSES AND PERMITS

The status of environmental licensing and permit is summarized in *Table 2.5* below.

Table 2.5 Summary of Environmental Licensing and Permit Status

License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
Environmental Permit	EP-354/2009/D	13 March 2015	N/A	HyD	Tuen Mun- Chek Lap Kok Link
APCO Construction Dust Notification	433493	14 May 2018	N/A	GCL	For Tuen Mun working area
Construction Waste Billing Account	7030836	15 May 2018	N/A	GCL	N/A
Chemical Waste Producer Registration	5213-422-G2827-01	13 June 2018	N/A	GCL	N/A
Discharge License under WPCO for Buildings at C2 area	WT00031783-2018	22 October 2018	31 October 2023	GCL	Sampling Frequency: Bimonthly
Discharge License under WPCO for Buildings at C3 area	WT00032062-2018	30 October 2018	31 October 2023	GCL	Sampling Frequency: Quarterly
Discharge License under WPCO for Southern Landfall	WT00034878-2019	1 April 2020	31 March 2025	GCL	Sampling Frequency: Quarterly
Construction Noise Permit	GW-RW0003-21	30 January 2021	29 July 2021	GCL	For Northern Landfall and Tunnel
Construction Noise Permit	GW-RS0904-20	2 December 2020	14 June 2021	GCL	For HKBCF Area
Construction Noise Permit	GW-RW0578-20	24 December 2020	14 June 2021	GCL	For Lung Mun Road near Ho Wan Street

2.6 *IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES*

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

A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in *Appendix C*. The necessary mitigation measures relevant to this Contract were implemented properly.

The landscape and visual (L&V) mitigation measures were also monitored on weekly basis in the reporting period. The monitoring status is summarized in *Appendix C*.

2.7 *SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT*

No Action Level and Limit Level exceedances for 1-hour TSP and 24-hour TSP were recorded by the Environmental Team of Contract No. *HY/2012/08* during the reporting period.

Results of landfill gas hazard monitoring in the reporting month complied with the Action Level.

Cumulative statistics are provided in *Appendix J*.

2.8 *SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS*

The Environmental Complaint Handling Procedure is provided in *Figure 2.2*.

There was no environmental complaint, notification of summons or successful prosecution recorded in the reporting period.

Statistics on complaints, notifications of summons, successful prosecutions are summarized in *Appendix J*.

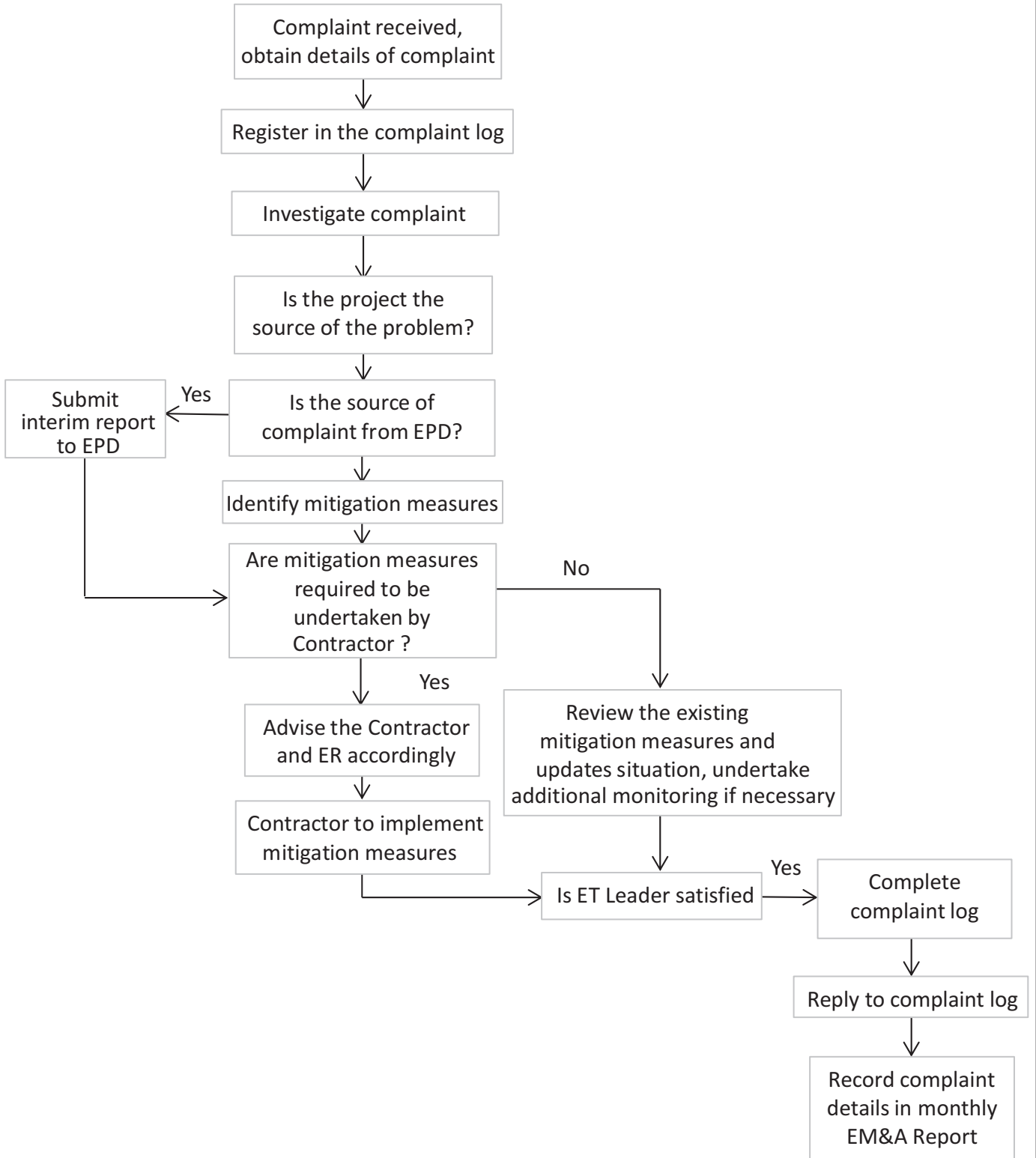


Figure 2.2

Environmental Complaint Handling Procedure

3 FUTURE KEY ISSUES

3.1 CONSTRUCTION ACTIVITIES FOR THE COMING MONTH

As informed by the Contractor, no major works will be undertaken in April 2021.

3.2 KEY ISSUES FOR THE COMING MONTH

No major works will be undertaken in April 2021.

4.1 CONCLUSIONS

This Thirty-Fourth Monthly EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 26 March 2021, in accordance with the Updated EM&A Manual and the requirements of EP-354/2009/D.

Air quality (including 1-hour TSP and 24-hour TSP) monitoring were carried out in this reporting month.

Notification of temporary suspension of air quality monitoring has been approved by EPD on 16 March 2021.

No Action Level and Limit Level exceedances for 1-hour TSP and 24-hour TSP were recorded by the Environmental Team of Contract No. *HY/2012/08* during the reporting period.

Results of landfill gas hazard monitoring in the reporting month complied with the Action Level.

Environmental site inspection was carried out four (4) times in March 2021. Remedial actions recommended for the deficiencies identified during the site audits were properly implemented by the Contractor.

Landscape and visual monitoring for 24-month establishment period for Southern Landfall, Northern Landfall and Main Control Building under this Contract was reported in this reporting period.

There was no environmental complaint, notification of summons or successful prosecution recorded in the reporting period.

Termination proposal for construction EM&A programme was approved by EPD on 26 March 2021. The construction phase EM&A programme of the Contract has been terminated since 26 March 2021.

Appendix A

Project Organization for Environmental Works



↔ Line of Communication

Appendix B

Construction Programme

ID	Activity	Duration (Days)	Activity % Complete	Start	Finish	Total Float	2021													
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep					
HY2017/10 - Works Programme Three Month Rolling Programme 20-Mar-21																				
Contract Dates																				
Key Dates																				
KD09	KD09 - C&ED Building, E&M Works, & FSD Inspection	0	0%		20-Mar-21*	-223														
KD10	KD10 - FSD Building, E&M Works, & FSD Inspection	0	0%		20-Mar-21*	-284														
KD12	KD12 - Establishment Works	0	0%		17-Sep-21*	0														
Portion Handover Dates																				
H120	Vacate Portion XVIb (KD10+28)	0	0%		20-Mar-21*	-257														
H130	Vacate Portion XVIa (KD10+28)	0	0%		20-Mar-21*	-257														
H140	Vacate Portion XVb (KD9+28)	0	0%		20-Mar-21*	-196														
H150	Vacate Portion XVa (KD9+28)	0	0%		20-Mar-21*	-196														
H340	Vacate Portion XIX (KD11+28)	0	0%		20-Mar-21*	-154														
H350	Vacate Portion WA18 (KD8+365)	0	0%		18-Nov-21*	0														
Key Date 10 - FSD Building Structure & E&M Works																				
E&M Works																				
Statutory Inspections and approvals																				
FSDB-SI1140	KD10 Achieved	0	0%		20-Mar-21	-237														
Key Date 9 - C&ED Building & E&M Works																				
E&M Works																				
Statutory Inspections and approvals																				
C&EDB-SI1140	KD09 Achieved	0	0%		20-Mar-21	-186														
Key Date 12 - Establishment Works																				
EW110	Establishment Works	365	39.45%	05-Dec-20 A	26-Oct-21	-39														
EW120	KD12 Achieved	0	0%		26-Oct-21	-33														

CONTRACT NO. HY2017/10
 TM-CLKL NORTHERN CONNECTION TUNNEL BUILDINGS, E&M WORKS
 THREE MONTHLY PROGRAMME AS OF 20 Mar 2021

P 1

Date	Revision	Checked	Approved
20-Mar-21			

Appendix C

Environmental Mitigation and Enhancement Measure Implementation Schedules

(In reference to CINOTECH (2011) Agreement No.
CE35/2011 EP Baseline Environmental Monitoring for
Hong Kong-Zhuhai-Macao Bridge Tuen Mun-Chek Lap
Kok Link - Investigation. Updated EM&A Manual for
Tuen Mun-Chek Lap Kok Link)

Contract No. HY/2017/10
Tuen Mun – Chek Lap Kok Link
Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
Air Quality									
4.8.1	3.8	Watering of the construction sites in Lantau for 8 times/day and in Tuen Mun for 12 times/day to reduce dust emissions by 87.5% and 91.7% respectively and shall be undertaken.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall not burn debris or other materials on the works areas.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet.	All unpaved haul roads / throughout construction period in hot, dry or windy weather	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		N/A
4.8.1	3.8	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		N/A
4.8.1	3.8	During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		N/A
4.8.1	3.8	Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		N/A
4.8.1	3.8	No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site.	All site exits / throughout construction period	Contractor	TMEIA Avoid dust		Y		✓

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Contract No. HY/2017/10
Tuen Mun – Chek Lap Kok Link
Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
4.8.1	3.8	Areas of exposed soil shall be minimised to areas in which works have been completed shall be restored as soon as is practicable.	All exposed surfaces / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		N/A
4.11	Section 3	EM&A in the form of 1 hour and 24 hour dust monitoring and site audit.	All representative existing ASRs / throughout construction period	Contractor	EM&A Manual		Y		N/A (Results adopted from published EM&A data of Contract No. HY/2012/08)
WATER QUALITY (LAND WORKS)									
6.10	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A
6.10	-	Sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
6.10	5.8	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A
6.10	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A
6.10	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓

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Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
6.10	-	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A
6.10	-	Roadside gullies to trap silt and grit shall be provided prior to discharging the stormwater into the marine environment. The sumps will be maintained and cleaned at regular intervals.	Roadside/design and operation	Design Consultant/ Contractor	TM-EIAO	Y		Y	N/A
6.10	Section 11	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All areas/ throughout construction period	Contractor	EM&A Manual		Y		✓
WASTE									
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		✓
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling.	Contract Mobilisation	Contractor	TMEIA		Y		✓

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Contract No. HY/2017/10
Tuen Mun – Chek Lap Kok Link
Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should avoid over-ordering and wastage.	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
12.6	8.1	The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <i>f</i> suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; <i>f</i> Having a capacity of <450L unless the specifications have been approved by the EPD; and w Chinese according to the instructions prescribed in Schedule 2 of the Regulations. <i>f</i> Clearly labelled and used solely for the storage of chemical wastes; <i>f</i> Enclosed with at least 3 sides; <i>f</i> Impermeable floor and bund with 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; <i>f</i> Adequate ventilation;	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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Contract No. HY/2017/10
Tuen Mun – Chek Lap Kok Link
Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
		f Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and f Incompatible materials are adequately separated.							
12.6	8.1	Waste oils, chemicals or solvents shall not be disposed of to drain,	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		N/A
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on-site.	Site Offices/ throughout construction period	Contractor	TMEIA		Y		✓
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All areas / throughout construction period	Contractor	EM&A Manual		Y		✓

LANDSCAPE AND VISUAL

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Contract No. HY/2017/10
Tuen Mun – Chek Lap Kok Link
Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
10.9	7.6	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) (CM1)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Trees unavoidably affected by the works shall be transplanted where practical. Trees will 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. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Recycle/ Reuse all felled trees and vegetation, e.g. mulching (CM9)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Compensatory tree planting 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 (CM10)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Contract No. HY/2017/10
Tuen Mun – Chek Lap Kok Link
Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
10.9	7.6	Re-vegetation of affected woodland/shrubland with native species (OM1)	All areas/detailed design/ during construction/ during operation	Design Consultant/ Contractor	TMEIA	Y	Y		n/a. To be maintained by HyD
10.9	7.6	Tall buffer screen tree / shrub / climber planting should be incorporated to soften hard engineering structures and facilities (OM2)	All areas/detailed design/ during construction/ during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be maintained by HyD/LCSD
10.9	7.6	Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimise unnecessary light spill (OM3)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be maintained by HyD
10.9	7.6	Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement (OM4)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be maintained by HyD/ ArchSD
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be maintained by HyD/ ArchSD
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (OM6)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be maintained by HyD/ ArchSD

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Contract No. HY/2017/10
 Tuen Mun – Chek Lap Kok Link
 Northern Connection Tunnel Buildings, Electrical and Mechanical Works
 Environmental Mitigation and Enhancement Measure Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	

* Remarks:

- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- Δ Deficiency of Mitigation Measures but rectified by Contractor
- N/A Not Applicable in Reporting Period

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Appendix D

Summary of Action and Limit Levels

Table D1 *Action and Limit Levels for 1-hour and 24-hour TSP*

Parameters	Action	Limit
24 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214	260
1 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337	500

Table D2 *Actions in the Event of Landfill Gas being Detected in Excavation/ Confined Area*

Parameter	Measurement	Action
Oxygen	< 19%	- Ventilate to restore oxygen to > 19%
	< 18%	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to > 19%
Methane	> 10% LEL (> 0.5% v/v)	- Prohibit hot work - Ventilate to restore methane to < 10% LEL
	> 20% LEL (>1% v/v)	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 10%
Carbon Dioxide	> 0.5%	- Ventilate to restore oxygen to < 0.5%
	> 1.5%	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 0.5%

Appendix E

Event Action Plan

Appendix E1 Event/ Action Plan for Air Quality

EVENT	ET ⁽¹⁾	ACTION		
		IEC ⁽¹⁾	ER ⁽¹⁾	Contractor
Action Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify the source. 2. Inform the IEC and the ER. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify the source. 2. Inform the IEC and the ER. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Discuss with the IEC and the Contractor on remedial actions required. 6. If exceedance continues, arrange meeting with the IEC and the ER. 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check the Contractor's working method. 3. Discuss with the ET and the Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate

EVENT	ACTION			
	ET ⁽¹⁾	IEC ⁽¹⁾	ER ⁽¹⁾	Contractor
Limit Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify the source. 2. Inform the ER and the DEP. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep the IEC, the DEP and the ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by the ET. 2. Check Contractor's working method. 3. Discuss with the ET and the Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify the IEC, the ER, the DEP and the Contractor. 2. Identify the source. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 6. Arrange meeting with the IEC and the ER to discuss the remedial actions to be taken. 7. Assess effectiveness of the Contractor's remedial actions 	<ol style="list-style-type: none"> 1. Discuss amongst the ER, ET and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

and keep the IEC, the DEP and
the ER informed of the results.

8. If the exceedance stops, cease
additional monitoring.

Abbreviations: ET - Environmental Team, IEC - Independent Environmental Checker, ER - Engineer's Representative, DEP - Director of Environmental Protection

Appendix F

EM&A Monitoring Schedule

**HY/2017/10 Tuen Mun - Chek Lap Kok Link - Northern Tunnel Connection Buildings, E&M Works
Landfill Gas Monitoring Schedule (1 to 26 March 2021)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Mar	02-Mar	03-Mar	04-Mar	05-Mar	06-Mar
	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)
07-Mar	08-Mar	09-Mar	10-Mar	11-Mar	12-Mar	13-Mar
	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)
14-Mar	15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar
	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)
21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	
	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	LFG Monitoring (a.m. & p.m.)	

The schedule is subject to excavation work at Main Control Building. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

Appendix G

Calibration Certificate of Monitoring Equipment



MSA Hong Kong Ltd.

25/F Jupiter Tower, 9 Jupiter Street, Hong Kong

Tel 852-22587588 Fax 25478780 Email info.hk@msasafety.com Website www.msasafety.com

Ref. 2020/11/056
Customer Gammon Constructions Limited

Date: 26-Nov-20

CERTIFICATE FOR CALIBRATION CHECK TEST

Model	Serial No.	Calibration Check Gas	Regulator	Full Scale	Response
Altair 5XIR	145986	1.45% Methane,	.25litre/min	100% LEL	29%LEL
		15% Oxygen		30% Vol	15% O2
		2.5% Carbon Dioxide		9.99%	2.5% CO2

Remarks: Regular inspection completed. Calibration passed

MSA Hong Kong Ltd. certify that instrument/s listed above has/have been calibrated check tested on:
26-Nov-20

This instrument was calibrated in accordance with all requirements of the specifications of MSA.

This instrument must be calibration checked prior to use in accordance with the instruction manual.

This instrument was calibrated using NIST traceable equipment and was in accordance with all requirements of the drawings and specifications of MSA.

For and on behalf of
MSA Hong Kong Ltd.



Authorised Signature

Appendix H

Landfill Gas Monitoring
Results and Graphical
Presentation

Landfill Gas Monitoring Results on Methane Level

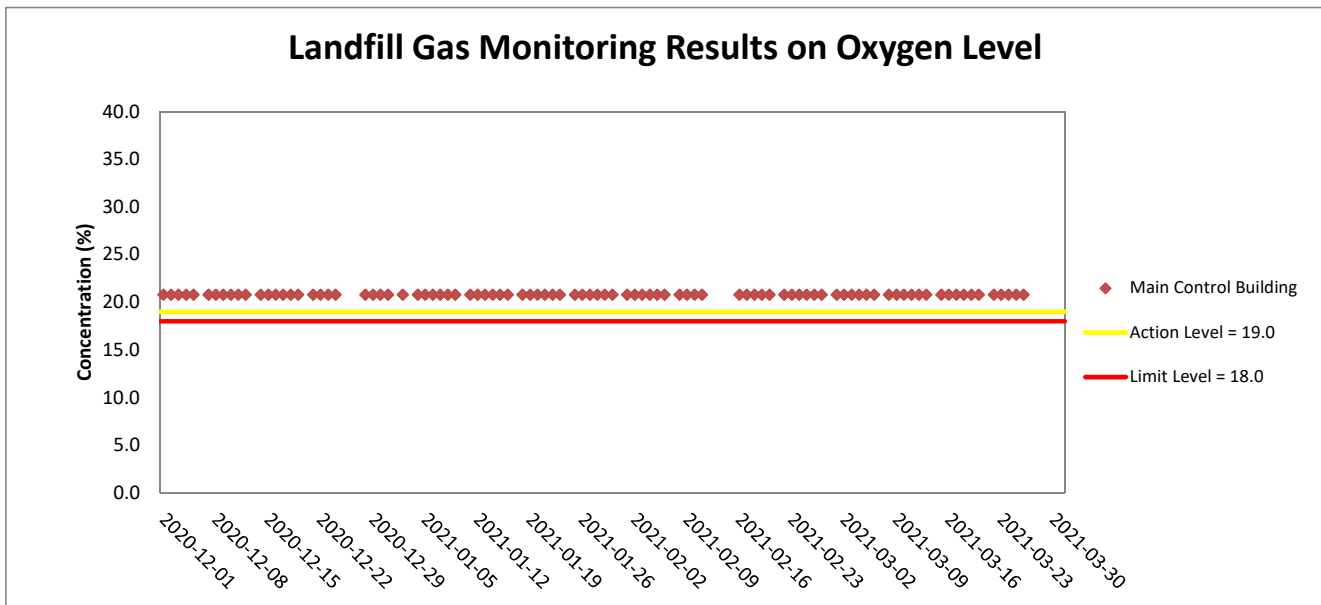
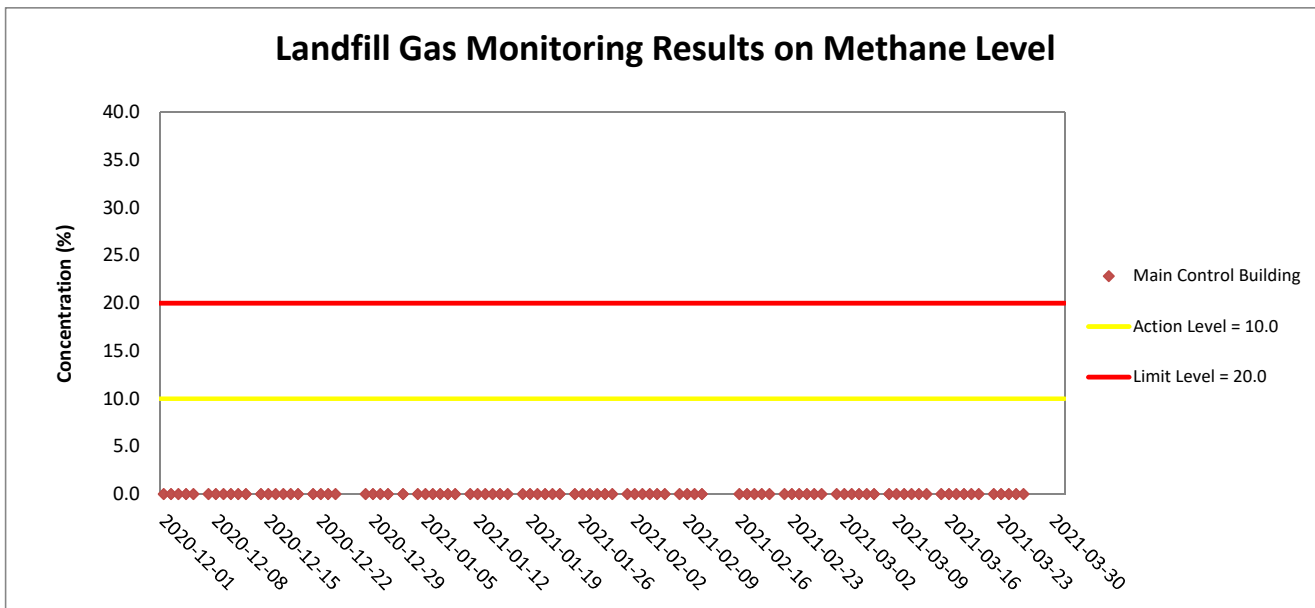
Project	Works	Date(yyyy-mm-dd)	Monitoring Location	Time (hh:mm, 24hour)	Results (%)	Action Level (%)	Limit Level (%)		
TMCLKL	HY/2017/10	2021-03-01	Main Control Building	8:15	0	10.0	20.0		
TMCLKL	HY/2017/10	2021-03-01	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-02	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-02	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-03	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-03	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-04	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-04	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-05	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-05	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-06	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-06	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-08	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-08	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-09	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-09	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-10	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-10	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-11	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-11	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-12	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-12	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-13	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-13	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-15	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-15	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-16	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-16	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-17	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-17	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-18	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-18	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-19	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-19	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-20	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-20	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-22	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-22	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-23	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-23	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-24	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-24	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-25	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-25	Main Control Building	13:15	0				
TMCLKL	HY/2017/10	2021-03-26	Main Control Building	8:15	0				
TMCLKL	HY/2017/10	2021-03-26	Main Control Building	13:15	0				
				Average	0				
				Min.	0				
				Max.	0				

Landfill Gas Monitoring Results on Oxygen Level

Project	Works	Date(yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Results (%)	Action Level (%)	Limit Level (%)		
TMCLKL	HY/2017/10	2021-03-01	Main Control Building	8:15	20.8	19.0	18.0		
TMCLKL	HY/2017/10	2021-03-01	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-02	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-02	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-03	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-03	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-04	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-04	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-05	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-05	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-06	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-06	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-08	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-08	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-09	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-09	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-10	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-10	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-11	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-11	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-12	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-12	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-13	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-13	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-15	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-15	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-16	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-16	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-17	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-17	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-18	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-18	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-19	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-19	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-20	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-20	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-22	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-22	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-23	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-23	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-24	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-24	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-25	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-25	Main Control Building	13:15	20.8				
TMCLKL	HY/2017/10	2021-03-26	Main Control Building	8:15	20.8				
TMCLKL	HY/2017/10	2021-03-26	Main Control Building	13:15	20.8				
				Average	20.8				
				Min.	20.8				
				Max.	20.8				

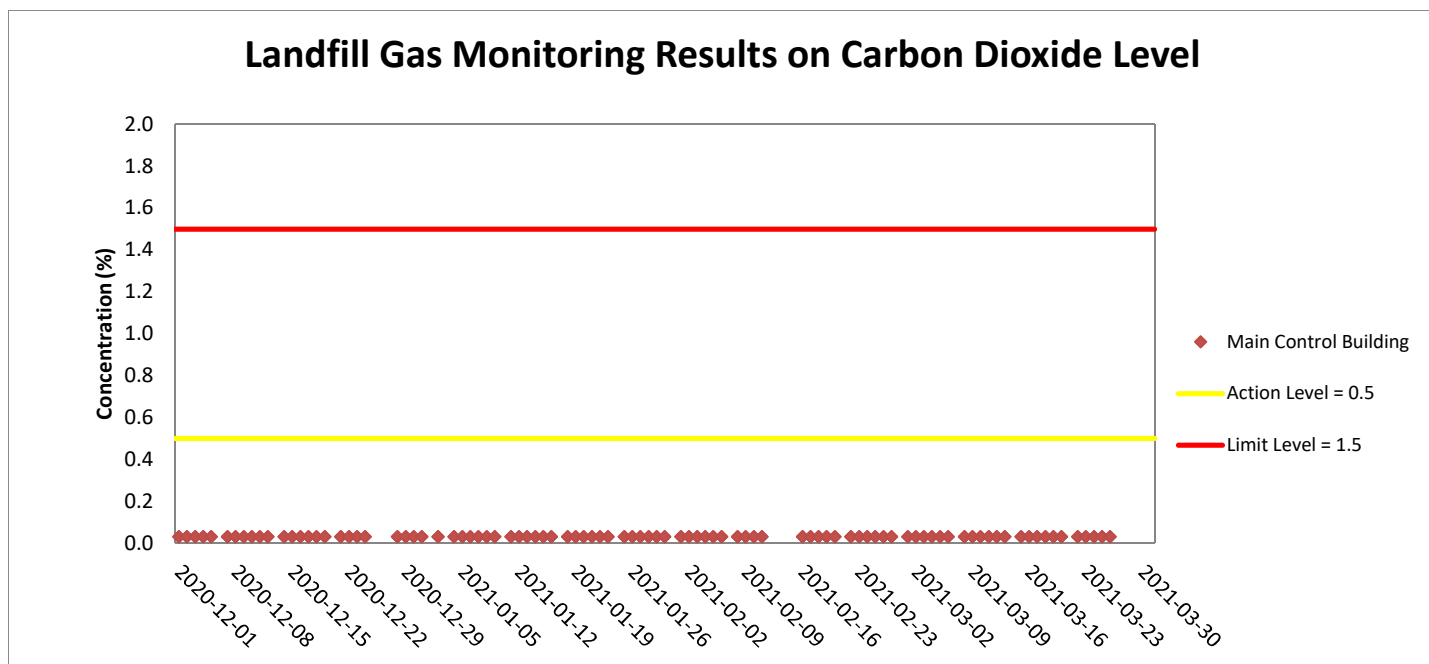
Landfill Gas Monitoring Results on Carbon Dioxide Level

Project	Works	Date(yyyy-mm-dd)	Station	Time (hh:mm, 24hour)	Results (%)	Action Level (%)	Limit Level (%)
TMCLKL	HY/2017/10	2021-03-01	Main Control Building	8:15	0.03	0.5	1.5
TMCLKL	HY/2017/10	2021-03-01	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-02	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-02	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-03	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-03	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-04	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-04	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-05	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-05	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-06	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-06	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-08	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-08	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-09	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-09	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-10	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-10	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-11	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-11	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-12	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-12	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-13	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-13	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-15	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-15	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-16	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-16	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-17	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-17	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-18	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-18	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-19	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-19	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-20	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-20	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-22	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-22	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-23	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-23	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-24	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-24	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-25	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-25	Main Control Building	13:15	0.03		
TMCLKL	HY/2017/10	2021-03-26	Main Control Building	8:15	0.03		
TMCLKL	HY/2017/10	2021-03-26	Main Control Building	13:15	0.03		
				Average	0.03		
				Min.	0.03		
				Max.	0.03		



Weather condition within the reporting period was sunny to rainy
 Major construction works undertaken within the reporting period include

- Minor work at Fire Services Department Building;
- Minor work at Customs and Excise Department Building;
- Minor work at Kiosk N1, Kiosk N2 and Kiosk S2



Weather condition within the reporting period was sunny to rainy

Major construction works undertaken within the reporting period include

- *Minor work at Fire Services Department Building;*
- *Minor work at Customs and Excise Department Building;*
- *Minor work at Kiosk N1, Kiosk N2 and Kiosk S2*

Appendix I

Monthly Summary of Waste Flow Table

Contract No. : HY/2017/10

**Tuen Mun Chek Lap Kok Link – Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Monthly Summary Waste Flow Table for 2021 (Year)**

Month/Material	Actual Quantities of Inert C&D Materials Generation										Actual Quantities of C&D wastes Generation		Actual Quantities of Recyclables Generation			
	Total Quantity Generated	Hard Rock and Large Broken Concrete			Reused in the Contract	Reused in other Projects	Disposed as Public Fills			Imported Fill	Chemical Waste	General Refuse	Metals	Felled trees	Paper/ cardboard packaging	Plastics
	sub-total	Broken Concrete	Milled Asphalt	sub-total	sub-total	sub-total	TM38	TKO137	sub-total	sub-total						
Unit	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000m ³)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)
Jan	-	-	-	0.000	-	-	-	-	-	-	-	46.750	-	-	-	-
Feb	7.720	-	-	0.000	-	-	7.720	-	7.720	-	-	18.910	-	-	-	-
Mar	-	-	-	0.000	-	-	-	-	-	-	-	31.050	-	-	-	-
Apr																
May																
Jun																
SUB-TOTAL	7.720	0.000	0.000	0.000	0.000	0.000	7.720	0.000	7.720	0.000	0.000	96.710	0.000	0.000	0.000	0.000
Jul																
Aug																
Sep																
Oct																
Nov																
Dec																
TOTAL	7.720	-	-	0.000	0.000	0.000	7.720	-	7.720	0.000	0.000	96.710	0.000	0.000	0.000	0.000

Notes :

- 1 - The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2 - Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- 3 - Broken concrete for recycling into aggregates.
- 4 - Assumed 5 kg per damaged water-filled barrier.
- 5 - Disposed as Public Fills includes Hard Rock and Large Broken Concrete.

Appendix J

Cumulative Statistics on
Exceedances, Complaints,
Notifications of Summons
and Successful Prosecutions

Appendix J1 Cumulative Statistics on Exceedances

		Total No. recorded in this reporting month	Total No. recorded since contract commencement
1-Hr TSP	Action	0	56
	Limit	0	11
24-Hr TSP	Action	0	4
	Limit	0	0
Landfill gas hazard monitoring			
	• Methane	0	0
	• Oxygen	0	0
	• Carbon Dioxide	0	0

Appendix J2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This Reporting Month (March 2021)	0	0	0
Total No. received since contract commencement	1	0	0

Appendix K

Landscape and Visual
Monitoring for 24-Month
Establishment Period

23 March 2021

Our ref: 0463091_82_Establishment L&V Checklist (SLF_NLF_MCB) Feb-Apr 21.docx

By email

Mr Manson Yeung
Independent Environmental Checker
Ramboll Hong Kong Limited
21/F, BEA Harbour View Centre
56 Gloucester Road
Wan Chai, Hong Kong



Dear Sir,

**Contract No. HY/2017/10
Tuen Mun - Chek Lap Kok Link - Northern Connection Tunnel Buildings,
Electrical and Mechanical Works**

**Reporting of Landscape Planting Works for
Southern Landfall, Northern Landfall and Main Control Building
during the 24-month Establishment Period (February to April 2021)**

In accordance with *Section 7.3.1.2 of the Updated EM&A Manual*, we are pleased to provide you with the *Establishment Landscape Monitoring Checklist for February to April 2021* for your perusal and counter-signature.

Should you require any further information or clarification please do not hesitate to contact the undersigned.

Yours faithfully
For ERM-Hong Kong, Ltd

Dr Jasmine Ng
Environmental Team Leader

Direct Tel: (852) 2271 3311
E-mail: jasmine.ng@erm.com

C.c.
AECOM (Attn: Mr Desmond Fung)
GCL (Attn: Mr Roy Leung)



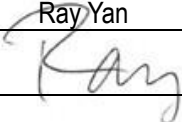

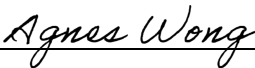

Inspection Date: 4th, 5th and 9th March 2021 **Inspected By:** Ray Yan
Time: 9:30 a.m. **Weather Condition:** Rainy (4th); Cloudy (5th); Sunny (9th)
Participants: 4th (Zone 6): Sue Kei (AECOM); Agnes Wong (Gammon); Manson Yeung (Ramboll)
 5th (Zone 6): Sue Kei (AECOM); Agnes Wong (Gammon); Theo Chan (Ramboll)
 9th (Zones 1 to 5): Sue Kei (AECOM); Agnes Wong (Gammon); Theo Chan (Ramboll)

		N/A or not observed	Yes	No	Remarks / Photo
1	Zone 1				
1.1	Is watering provided to plants to ensure satisfactory growth and health (manual and automatic irrigation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.2	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.3	Are trees or limb overhanging branches pruned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.4	Are pest and disease observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.5	Are litter and debris removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.6	Are plants/ grasses overgrown?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.7	After inclement weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.8	Are planting locations and tree spacing matched with the approved planting plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.9	Are the planting species on site matched with the approved planting plans? Consolidated planting schedule in Annex B.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Good	Fair	Poor	
1.10	Overall health condition of the plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Zone 2				
2.1	Is watering provided to plants to ensure satisfactory growth and health (manual and automatic irrigation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.2	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No trees
2.3	Are trees or limb overhanging branches pruned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No trees
2.4	Are pest and disease observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.5	Are litter and debris removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.6	Are plants/ grasses overgrown?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.7	After inclement weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.8	Are planting locations and tree spacing matched with the approved planting plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.9	Are the planting species on site matched with the approved planting plans? Consolidated planting schedule in Annex B.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Good	Fair	Poor	
2.10	Overall health condition of the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



3	Zone 3	N/A or not observed	Yes	No	Remarks / Photo
3.1	Is watering provided to plants to ensure satisfactory growth and health (manual and automatic irrigation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.2	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No trees
3.3	Are trees or limb overhanging branches pruned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No trees
3.4	Are pest and disease observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.5	Are litter and debris removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.6	Are plants/ grasses overgrown?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.7	After inclement weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.8	Are planting locations and tree spacing matched with the approved planting plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.9	Are the planting species on site matched with the approved planting plans? Consolidated planting schedule in Annex B.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Good	Fair	Poor	
3.10	Overall health condition of the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	Zone 4	N/A or not observed	Yes	No	Remarks / Photo
4.1	Is watering provided to plants to ensure satisfactory growth and health (manual and automatic irrigation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.2	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.3	Are trees or limb overhanging branches pruned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.4	Are pest and disease observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.5	Are litter and debris removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.6	Are plants/ grasses overgrown?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.7	After inclement weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8	Are planting locations and tree spacing matched with the approved planting plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.9	Are the planting species on site matched with the approved planting plans? Consolidated planting schedule in Annex B.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Obs. 2
		Good	Fair	Poor	
4.10	Overall health condition of the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



5	Zone 5	N/A or not observed	Yes	No	Remarks / Photo
5.1	Is watering provided to plants to ensure satisfactory growth and health (manual and automatic irrigation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.2	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.3	Are trees or limb overhanging branches pruned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.4	Are pest and disease observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5.5	Are litter and debris removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.6	Are plants/ grasses overgrown?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5.7	After inclement weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.8	Are planting locations and tree spacing matched with the approved planting plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.9	Are the planting species on site matched with the approved planting plans? Consolidated planting schedule in Annex B.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Good	Fair	Poor	
5.10	Overall health condition of the plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Zone 6	N/A or not observed	Yes	No	Remarks / Photo
6.1	Is watering provided to plants to ensure satisfactory growth and health (manual and automatic irrigation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.2	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.3	Are trees or limb overhanging branches pruned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.4	Are pest and disease observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.5	Are litter and debris removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.6	Are plants/ grasses overgrown?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.7	After inclement weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Obs. 1
6.8	Are planting locations and tree spacing matched with the approved planting plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.9	Are the planting species on site matched with the approved planting plans? Consolidated planting schedule in Annex B.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Good	Fair	Poor	
6.10	Overall health condition of the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7	General Document	N/A or not observed	Yes	No	Remarks / Photo
7.1	Are the records of watering, fertilizing, weeding, pruning and mowing kept for checking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



Follow up actions for previous Site Audit: N/A
Observations: Obs. 1: Re-planting works for tree nos. TS446 (<i>Grevillea robusta</i>), TS854 (<i>Callistemon viminalis</i>), TS1083 (<i>Callistemon viminalis</i>), TS1087 (<i>Grevillea robusta</i>), TS1162 (<i>Callistemon viminalis</i>), TS1177 (<i>Callistemon viminalis</i>), TS1349 (<i>Grevillea robusta</i>), TS1380 (<i>Grevillea robusta</i>), TS815 (<i>Grevillea robusta</i>), TS820 (<i>Grevillea robusta</i>), TS821 (<i>Grevillea robusta</i>), TS824 (<i>Grevillea robusta</i>), TS825 (<i>Grevillea robusta</i>) and TS826 (<i>Grevillea robusta</i>) within Zone 6 was in progress. Tree re-planting works for the trees should be completed in accordance with the latest planting plan. Obs. 2: The tree species (<i>Bauhinia variegata var. candida</i>) was planted for tree nos. TM27 and TM130 within Zone 4. The trees should be replaced with species, <i>Bauhinia variegata</i> , as per the latest planting plan.
Corrective Actions (if any): <ul style="list-style-type: none">• Tree re-planting works for the trees requiring replacement should be completed in accordance with the latest planting plan.
General Conclusion: Total number of trees planted ⁽¹⁾ : 431 (Zone 1); 0 (Zone 2); 0 (Zone 3); 435 (Zone 4); 4 (Zone 5); and 2,127 (Zone 6). Planting area under Contract No. HY/2017/10: 14.42 ha (based on the survey data provided by the SOR).



Inspected by (ET's Representative):	<u>Ray Yan</u>	Title:	<u>Deputy Environmental Team Leader</u>
Signature:		Date:	<u>22 March 2021</u>
Reviewed by (RSS Landscape Representative):	<u>Candy Lau</u>	Title:	<u>Senior Resident Landscape Architect</u>
Signature:		Date:	<u>22 March 2021</u>
Contractor's Representative:	<u>Agnes Wong</u>	Title:	<u>SHI</u>
Signature:		Date:	<u>22 March 2021</u>
Checked by (IEC's Representative):	<u>Theo Chan</u>	Title:	<u>Assistant Environmental Consultant</u>
Signature:		Date:	<u>22 March 2021</u>



⁽¹⁾ Only compensatory trees were counted during the monitoring with reference to the Landscape and Visual Plan for TM-CLKL.



Location	Photo	Information
Zone 6		<p>Date: 4 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS446 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Grevillea robusta</i></p>
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS854 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Callistemon viminalis</i></p>

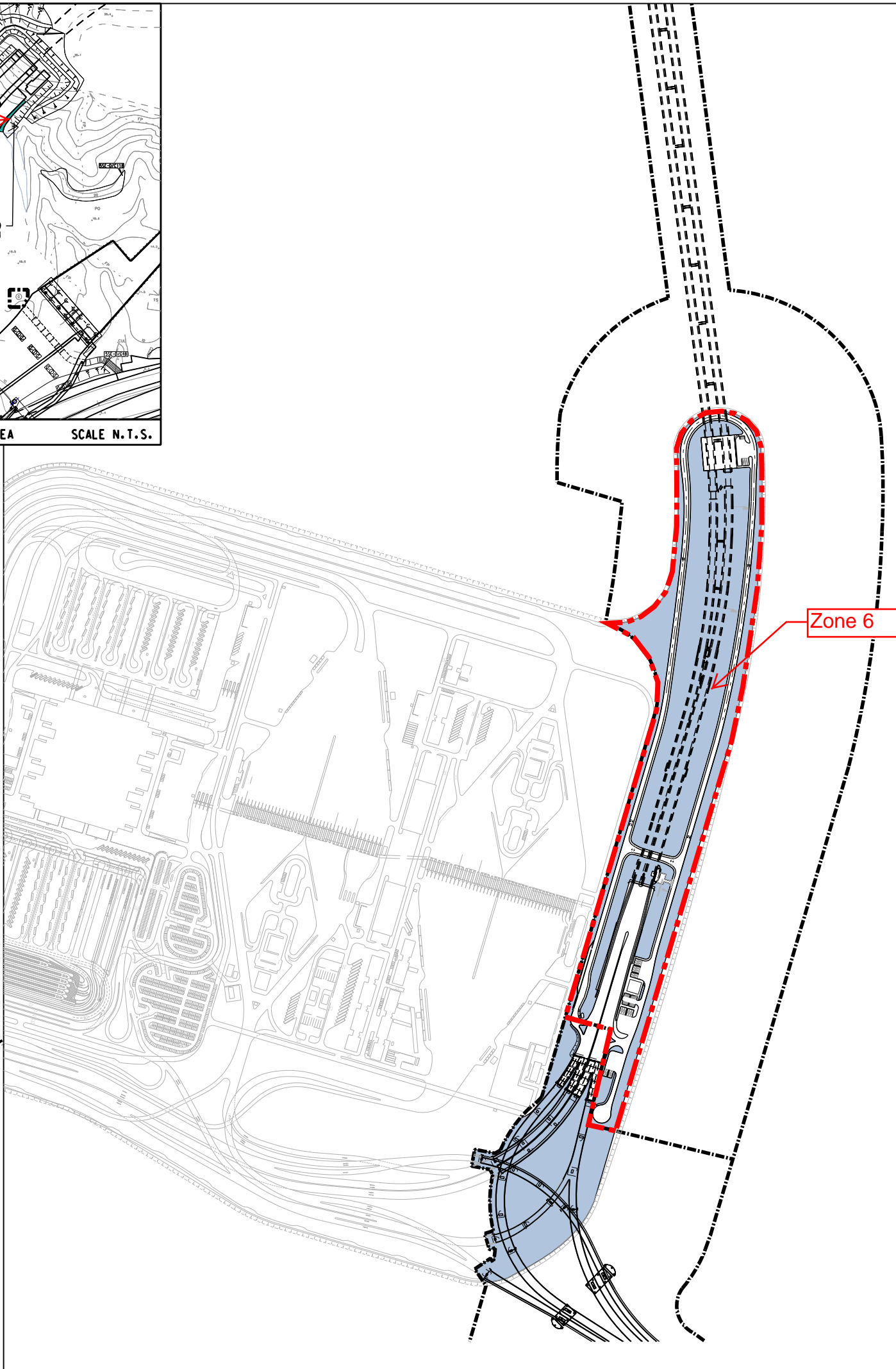
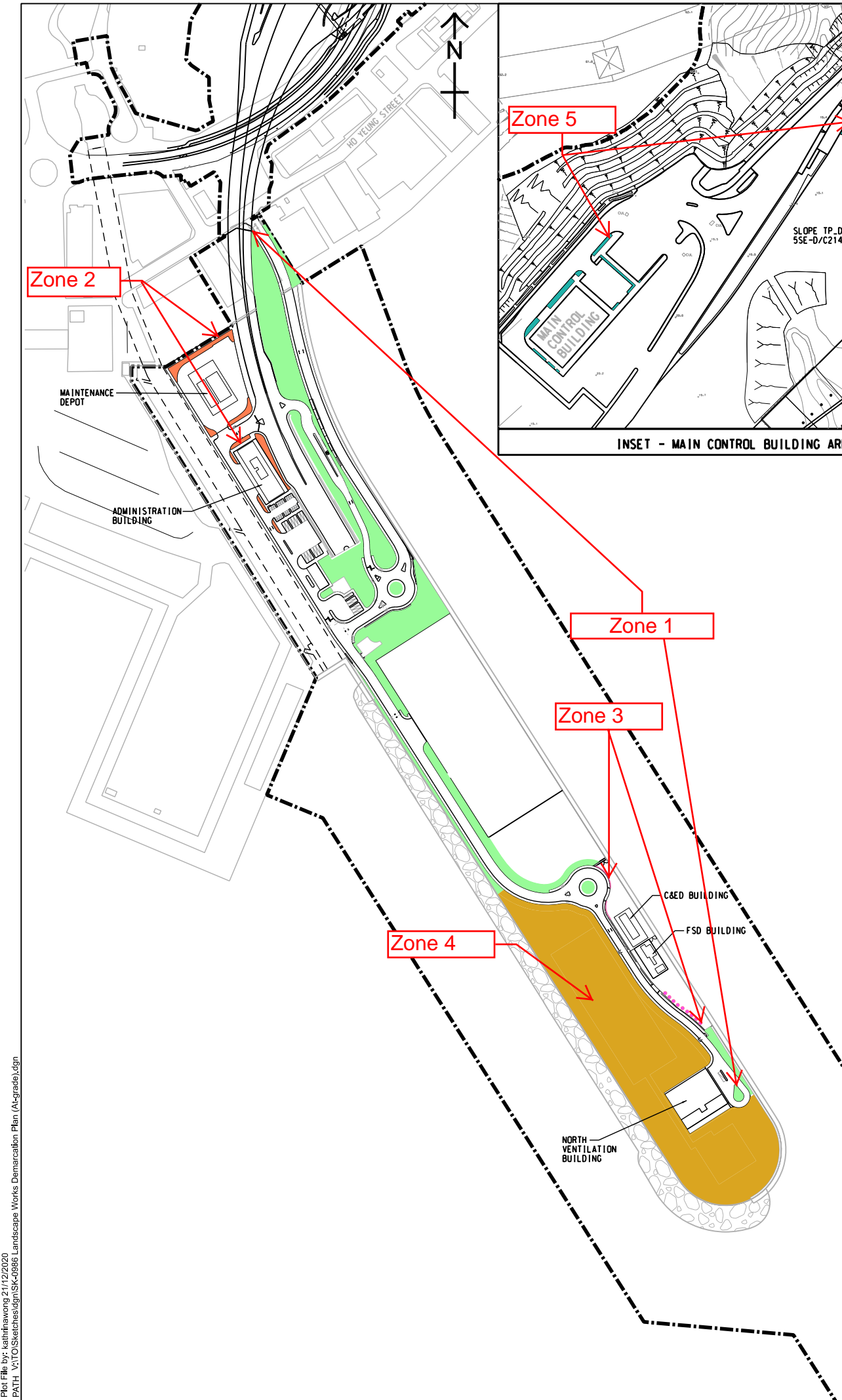
Location	Photo	Information
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS1083 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Callistemon viminalis</i></p>
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS1087 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Grevillea robusta</i></p>

Location	Photo	Information
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS1162 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Callistemon viminalis</i></p>
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS1177 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Callistemon viminalis</i></p>

Location	Photo	Information
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS1349 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Grevillea robusta</i></p>
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree no. TS1380 within Zone 6 was in progress. Tree re-planting works for the tree should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Grevillea robusta</i></p>

Location	Photo	Information
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree nos. TS815 and TS821 within Zone 6 was in progress. Tree re-planting works for the trees should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Grevillea robusta</i></p>
Zone 6		<p>Date: 5 March 2021</p> <p>Observation 1: Re-planting works for tree nos. TS820, TS824, TS825 and TS826 within Zone 6 was in progress. Tree re-planting works for the trees should be completed in accordance with the latest planting plan.</p> <p>Species: <i>Grevillea robusta</i></p>

Location	Photo	Information
Zone 4		<p>Date: 9 March 2021</p> <p>Observation 2: The tree species (<i>Bauhinia variegata var. candida</i>) was planted for tree no. TM27 within Zone 4. The tree should be replaced with species, <i>Bauhinia variegata</i>, as per the latest planting plan.</p> <p>Species: <i>Bauhinia variegata</i></p>
Zone 4		<p>Date: 9 March 2021</p> <p>Observation 2: The tree species (<i>Bauhinia variegata var. candida</i>) was planted for tree no. TM130 within Zone 4. The tree should be replaced with species, <i>Bauhinia variegata</i>, as per the latest planting plan.</p> <p>Species: <i>Bauhinia variegata</i></p>



FOR INFORMATION

REV.	DATE	DESCRIPTION	CHK.	PREP.	DRAWN

CLIENT

HIGHWAYS DEPARTMENT
 主要工程管理處(專責事務)
 Major Works Project Management Office
 (Special Duties)

AECOM Imagine it. Delivered.

PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TUNNEL - BUILDINGS, ELECTRICAL AND MECHANICAL WORKS

PROJECT NO. 60240249 CONTRACT NO. HY/2017/10

SCALE N.T.S. DATE 21 DEC. 2020

AMENDMENT TO WORKING DRAWING NO.
 60240249/C4/

CHECKED	PREPARED	DRAWN
CL	CD	KW

SKETCH TITLE
ZONING PLAN - LANDSCAPE WORKS MONITORING (ESTABLISHMENT WORKS)

SKETCH NO.
 60240249/C4/SK/0986

Northern Landfall - Roadside Planting

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm) HEIGHT (H) X SPREAD (S)	SPACING (mm)
TREE				
BAU.BLA	<i>Bauhinia x blakeana</i> *	洋紫荊	HEAVY STANDARD	4500-5000
BAU.VAR	<i>Bauhinia variegata</i>	宮粉羊蹄甲	HEAVY STANDARD	4500-5000
ELA.API	<i>Elaeocarpus apiculatus</i>	尖葉杜英	HEAVY STANDARD	6000
ELA.HAI	<i>Elaeocarpus hainanensis</i>	水石榕	HEAVY STANDARD	5000
GAR.SUB	<i>Garcinia subelliptica</i>	菲島福木	HEAVY STANDARD	3500-4000
GRE.ROB	<i>Grevillea robusta</i>	銀樺	HEAVY STANDARD	4500-5000
MEL.QUI	<i>Melaleuca quinquenervia</i>	白千層	HEAVY STANDARD	4500-5000
PLU.MUL	<i>Plumeria rubra</i> (multi-colour flower)	雞蛋花(多色花)	HEAVY STANDARD 2000(H) x 2000(S) - 2500(H) x 2500(S)	4000-4500
PLU.RUB	<i>Plumeria rubra</i> (red flower)	雞蛋花(紅花)	HEAVY STANDARD 2000(H) x 2000(S) - 2500(H) x 2500(S)	4000-4500
PLU.RUB(Y)	<i>Plumeria rubra</i> (yellow flower)	雞蛋花(黃花)	HEAVY STANDARD 2000(H) x 2000(S) - 2500(H) x 2500(S)	4000-4500
PON.PIN	<i>Pongamia pinnata</i> *	水黃皮	HEAVY STANDARD	5000-6000
STE.LAN	<i>Sterculia lanceolata</i> *	假蒺藜	HEAVY STANDARD	4500-5000
TER.CAT	<i>Terminalia catappa</i>	欖仁樹	HEAVY STANDARD	5000-7000
VIB.ODO	<i>Viburnum odoratissimum</i> *	珊瑚樹	HEAVY STANDARD	4500-5000
XAN.CHR	<i>Xanthostemon chrysanthus</i>	金蒲桃	HEAVY STANDARD	5000
PALM				
ARE.CAT	<i>Areca catechu</i>	檳榔	3000(H) x 1500(S)	4000
HYO.LAG	<i>Hyophorbe lagenicaulis</i>	酒瓶椰子	2000(H) x 1500(S)	3000
LIV.CHI	<i>Livistona chinensis</i>	蒲葵	3000(H) x 2000(S)	4000-4500
ROY.REG	<i>Roystonea regia</i>	王棕	4000(H) x 2000(S)	4500-5000
WOD.BIF	<i>Wodyetia bifurcata</i>	狐尾椰子	3000(H) x 1500(S)	4500
SHRUB				
CMI	<i>Carmona microphylla</i>	福建茶	300(H) x 300(S)	300
CRE	<i>Cycas revoluta</i>	蘇鐵	500(H) x 600(S)	N/A
DLU	<i>Dyopsis lutescens</i>	散尾葵	2000(H) x 2000(S)	2000
JKA	<i>Juniperus chinensis</i> 'Kaizuca'	龍柏球	600(H) x 600(S)	N/A
ICH	<i>Ixora chinensis</i> *	龍船花	300(H) x 300(S)	300
ICO	<i>Ixora coccinea</i>	橙紅龍船花	300(H) x 300(S)	300
ILU	<i>Ixora coccinea</i> 'Lutea'	黃花龍船花	400(H) x 300(S)	300
IST	<i>Ixora stricta</i>	細葉龍船花	250(H) x 250(S)	250
IWE	<i>Ixora westii</i>	粉紅龍船花	400(H) x 300(S)	300
NOL	<i>Nerium oleander</i>	夾竹桃	500(H) x 400(S)	500
PTO	<i>Pittosporum tobira</i>	海桐	300(H) x 300(S)	350
PMA	<i>Podocarpus macrophyllus</i> *	羅漢松	600(H) x 500(S)	N/A
PAX	<i>Polyspora axillaris</i> *	大頭茶	300(H) x 300(S)	350
RIN	<i>Rhaphiolepis indica</i> *	車輪梅	300(H) x 300(S)	300-350
RPU	<i>Rhododendron pulchrum</i>	錦繡杜鵑	300(H) x 300(S)	350
RSI	<i>Rhododendron simsii</i> *	紅杜鵑	250(H) x 250(S)	350
RTO	<i>Rhodomyrtus tomentosa</i> *	桃金娘	300(H) x 300(S)	350
STA	<i>Scaevola taccada</i> *	草海桐	300(H) x 300(S)	350
SDA	<i>Schefflera arboricola</i> 'Dazzle'	黃金八葉	300(H) x 300(S)	350
SVA	<i>Schefflera arboricola</i> 'Variegata'	斑葉鵝掌藤 (花葉八葉木)	300(H) x 300(S)	300-350

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm) HEIGHT (H) X SPREAD (S)	SPACING (mm)
GROUND COVER				
ADU	<i>Arachis duranensis</i>	蔓花生(金花生)	100(H) x 200(S)	200
AMY	<i>Asparagus densiflorus</i> 'Myersii'	孤尾天冬	300(H) x 300(S)	300
ASP	<i>Asparagus densiflorus</i> 'Sprengeri'	非洲天門冬	100(H) x 200(S)	200
CHY	<i>Cuphea hyssopifolia</i>	細葉萼距花	200(H) x 250(S)	250
CRO	<i>Catharanthus roseus</i>	長春花	200(H) x 200(S)	200
LFL	<i>Lantana camara</i> 'Flava'	黃花馬纓丹	200(H) x 200(S)	200
LMO	<i>Lantana montevidensis</i>	小葉馬纓丹	200(H) x 200(S)	200
NAU	<i>Nephrrolepis auriculata</i> *	腎蕨	250(H) x 250(S)	200
NHI	<i>Nephrrolepis hirsutula</i> *	毛蕨腎蕨	250(H) x 250(S)	200
ONA	<i>Ophiopogon japonicus</i> 'Nana'	玉龍草	50(H)	N/A
WTR	<i>Wedelia trilobata</i>	三裂葉雙瓣菊	150(H) x 200(S)	200
CLIMBER				
BCO	<i>Bauhinia corymbosa</i>	首冠藤	MIN. 4 SHOOTS PER PLANT, 600mm LONG	300-500
QIN	<i>Quisqualis indica</i>	使君子	MIN. 4 SHOOTS PER PLANT, 600mm LONG	300-500

NOTE:

1. ALL PROPOSED PLANT SPECIES AND SPECIFICATIONS ARE SUBJECT TO CHANGE DURING CONSTRUCTION TO SUIT THE SITE CONDITIONS.
2. SHRUB / GROUND COVER SHOULD BE PLANTED IN A STAGGERED PATTERN.
3. SIZE OF TREES SHALL REFER TO THE GENERAL SPECIFICATION FOR CIVIL ENGINEERING WORKS, 2006 EDITION.
4. GRASS SEED AS GENERAL SPECIFICATION FOR CIVIL ENGINEERING WORKS, CLAUSE 3.26(3).
5. * SPECIES NATIVE TO HONG KONG ACCORDING TO THE HONG KONG HERBARIUM WEBSITE.

Agreement No. CE7/2011(HY)

Tuen Mun - Chek Lap Kok Link - Northern Connection Tunnel Buildings, Electrical and Mechanical Works
Planting Schedule for Northern Landfall - Road Planting (Contract 4 - HY/2017/10)

Drawing No.: Figure 6.3

Southern Landfall (Contract 4 - HY/2017/10)

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm) HEIGHT (H) X SPREAD (S)	SPACING (mm)
TREE				
CV	<i>Callistemon viminalis</i>	串錢柳	HEAVY STANDARD	4000-5000
GR	<i>Grevillea robusta</i>	銀樺	HEAVY STANDARD	4000-5000
PRR	<i>Plumeria rubra</i> (red flower)	雞蛋花(紅花)	HEAVY STANDARD 2000(H) x 2000(S) - 2500(H) x 2500(S)	4000-5000
PRY	<i>Plumeria rubra</i> (yellow flower)	雞蛋花(黃花)	HEAVY STANDARD 2000(H) x 2000(S) - 2500(H) x 2500(S)	4000-5000
PLU.MUL	<i>Plumeria rubra</i> (multi-colour flower)	雞蛋花(多色花)	HEAVY STANDARD 2000(H) x 2000(S) - 2500(H) x 2500(S)	4000-5000
GROUND COVER				
IPE	<i>Ipomoea pes-caprae</i> *	海灘牽牛	150(H) x 200(S)	200
LMO	<i>Lantana montevidensis</i>	小葉馬纓丹 (鋪地臭金鳳)	200(H) x 300(S)	200
OJA	<i>Ophiopogon japonicus</i> *	麥冬(沿階草)	100(H) x 100(S)	100
SPO	<i>Syngonium podophyllum</i>	白蝴蝶	100(H) x 200(S)	200
TSP	<i>Tradescantia spathacea</i> 'dwarf'	矮蚌花	100(H) x 100(S)	100
WTR	<i>Wedelia trilobata</i>	三裂葉薔琪菊	150(H) x 200(S)	200
GRASS				
ZJA	<i>Zoysia japonica</i>	朝鮮草	300(L)x300(W)x50(H)	N/A

NOTE:

1. ALL PROPOSED PLANT SPECIES AND SPECIFICATIONS ARE SUBJECT TO CHANGE DURING CONSTRUCTION TO SUIT THE SITE CONDITIONS.
2. SHRUB / GROUND COVER SHOULD BE PLANTED IN A STAGGERED PATTERN.
3. SIZE OF TREES SHALL REFER TO THE GENERAL SPECIFICATION FOR CIVIL ENGINEERING WORKS, 2006 EDITION.
4. GRASS SEED AS GENERAL SPECIFICATION FOR CIVIL ENGINEERING WORKS, CLAUSE 3.26(3).
5. * SPECIES NATIVE TO HONG KONG ACCORDING TO THE HONG KONG HERBARIUM WEBSITE.
6. THE PLANT SPECIES ALLOWED FOR PLANTING IN EACH ZONE STATED IN THE HONG KONG INTERNATIONAL AIRPORT (HKIA) APPROVED PLANT SPECIES LIST (Revision. 4.0.1: October 2015).



Photo 1: (A): *Livistona chinensis*; and (B): *Nephrolepis auriculata* within Zone 1
(Taken on: 9 March 2021)



Photo 2: (A): *Livistona chinensis*; (B): *Ophiopogon japonicus* 'Nana'; and (C): *Carmona microphylla*
within Zone 1
(Taken on: 9 March 2021)

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Photo 3: *Livistona chinensis* within Zone 1
(Taken on: 9 March 2021)



Photo 4: (A): *Xanthostemon chrysanthus* ; and (B): *Elaeocarpus hainanensis* within Zone 1
(Taken on: 9 March 2021)

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Photo 5: *Elaeocarpus hainanensis* within Zone 1
(Taken on: 9 March 2021)



Photo 6: *Hyophorbe lagenicaulis* within Zone 1
(Taken on: 9 March 2021)

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Photo 7: (A): *Livistona chinensis*; and (B): *Plumeria rubra* within Zone 1
(Taken on: 9 March 2021)



Photo 8: *Wodyetia bifurcate* within Zone 1
(Taken on: 9 March 2021)

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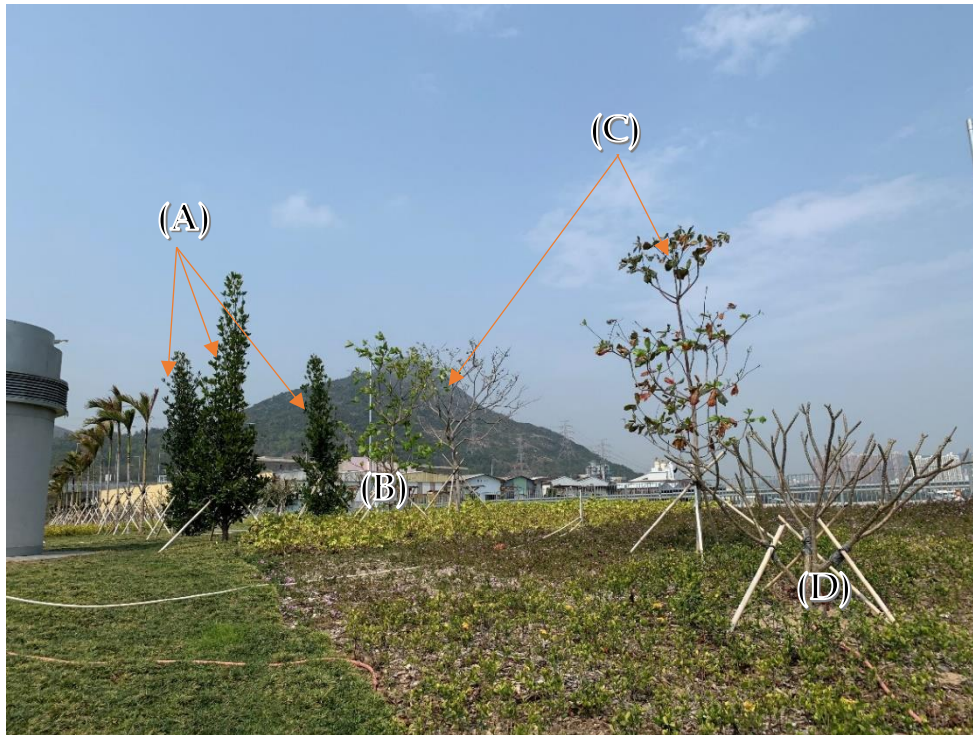


Photo 9: (A): *Garcinia subelliptica*; (B): *Pongamia pinnata*; (C): *Terminalia catappa*; and (D): *Plumeria rubra* within Zone 1
 (Taken on: 9 March 2021)



Photo 10: *Plumeria rubra* within Zone 1
 (Taken on: 9 March 2021)

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Photo 11: *Elaeocarpus apiculatus* within Zone 1
(Taken on: 9 March 2021)



Photo 12: (A): *Areca catechu*; and (B): *Roystonea regia* within Zone 1
(Taken on: 9 March 2021)

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Photo 13: (A): *Cycas revoluta*; (B): *Latana montevidensis*; (C): *Cuphea hyssopifolia*; and (D): *Nephrolepis auriculata* within Zone 2
 (Taken on: 9 March 2021)

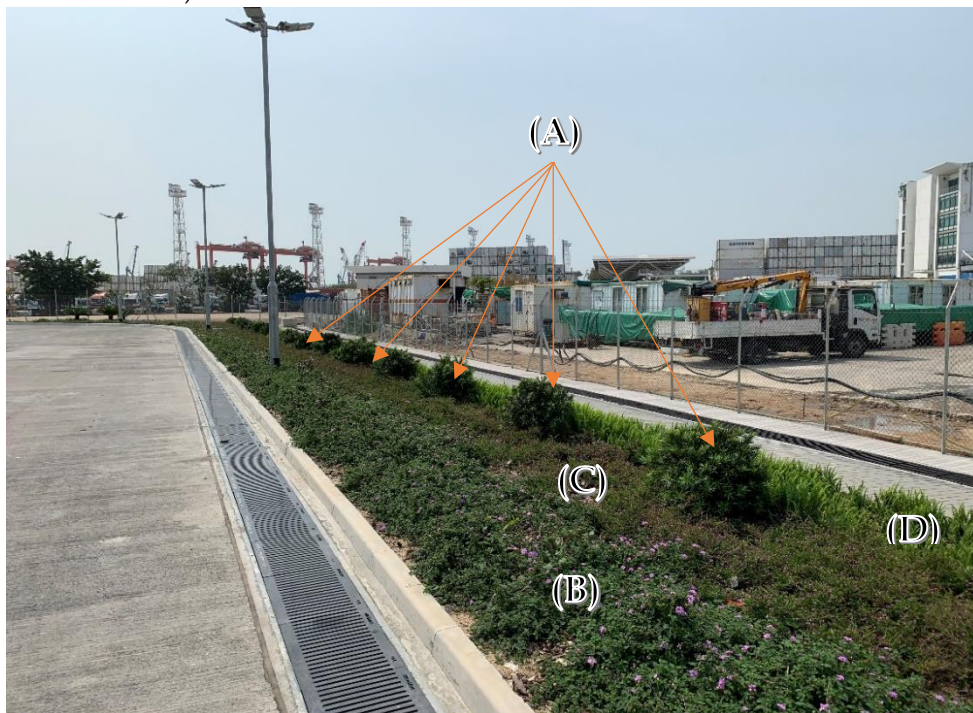


Photo 14: (A): *Podocarpus macrophyllus*; (B): *Latana montevidensis*; (C): *Cuphea hyssopifolia*; and (D): *Nephrolepis auriculata* within Zone 2
 (Taken on: 9 March 2021)

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Photo 15: (A): *Dypsis lutescens*; and (B): *Ixora stricta* within Zone 2
 (Taken on: 9 March 2021)



Photo 16: (A): *Dypsis lutescens*; and (B): *Ixora stricta* within Zone 2
 (Taken on: 9 March 2021)

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Photo 17:(A): *Podocarpus macrophyllus*; and (B): *Cuphea hyssopifolia* within Zone 2
(Taken on: 9 March 2021)

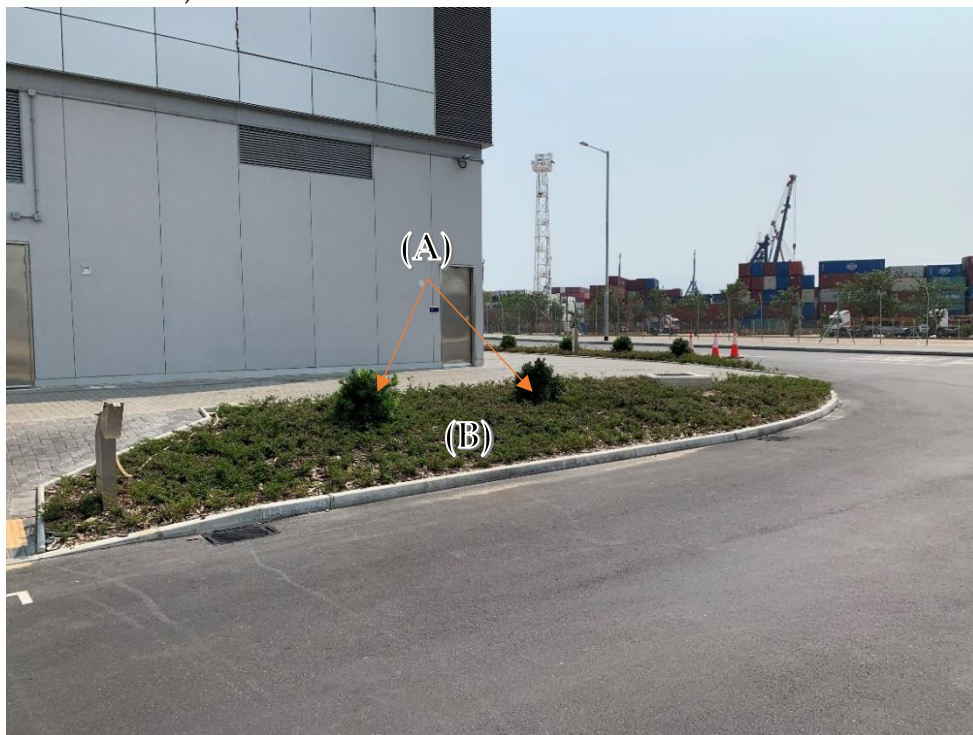


Photo 18: (A): *Podocarpus macrophyllus*; and (B): *Cuphea hyssopifolia* within Zone 2
(Taken on: 9 March 2021)

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Photo 19: (A): *Cuphea hyssopifolia*; and (B): *Ixora westii* within Zone 2
 (Taken on: 9 March 2021)

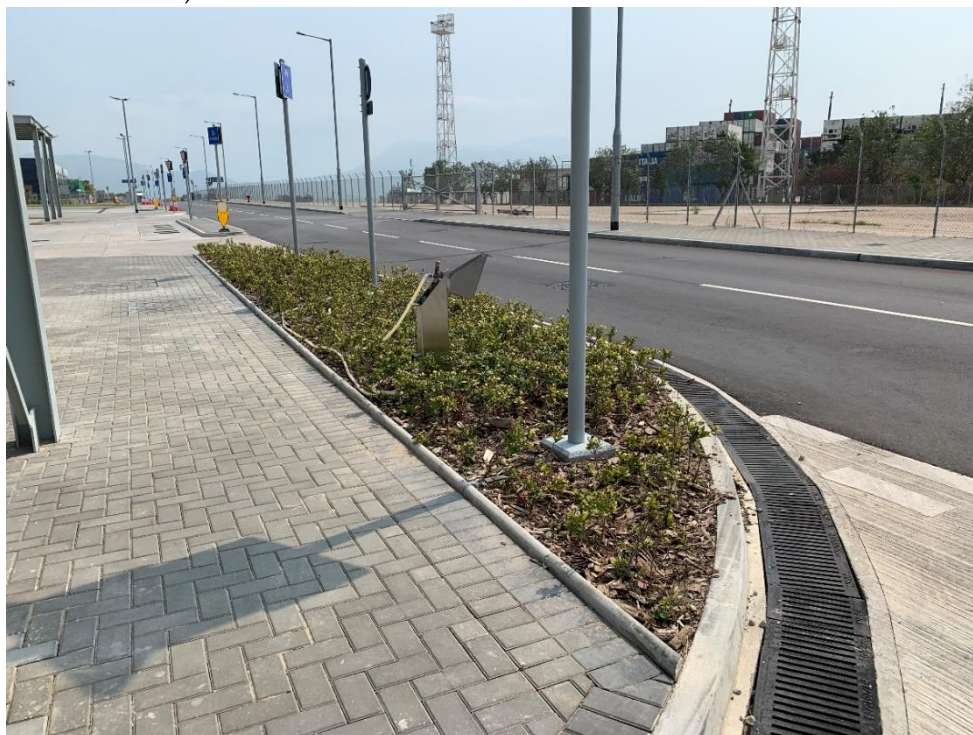


Photo 20: *Ixora stricta* within Zone 2
 (Taken on: 9 March 2021)

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Photo 21: (A): *Podocarpus macrophyllus*; and (B): *Cuphea hyssopifolia* within Zone 2
(Taken on: 9 March 2021)



Photo 22: (A): *Podocarpus macrophyllus*; and (B): *Cuphea hyssopifolia* within Zone 2
(Taken on: 9 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
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Photo 23: (A): *Schefflera arboricola* 'Dazzle'; and (B): *Pittosporum tobira* within Zone 3
(Taken on: 9 March 2021)

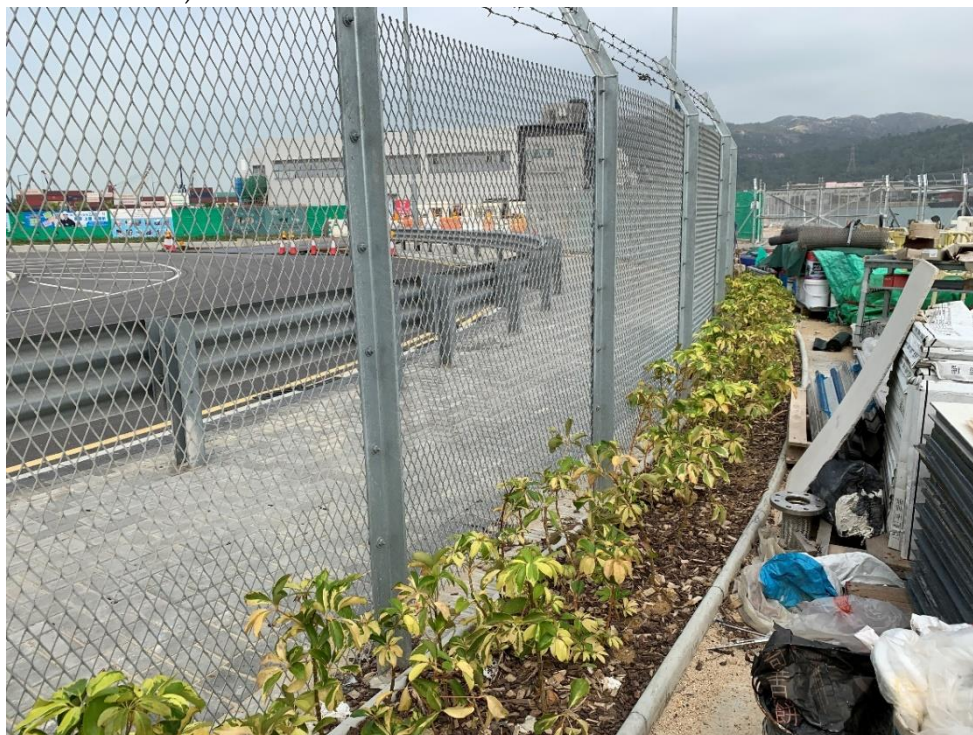


Photo 24: *Schefflera arboricola* 'Dazzle' within Zone 3
(Taken on: 9 March 2021)

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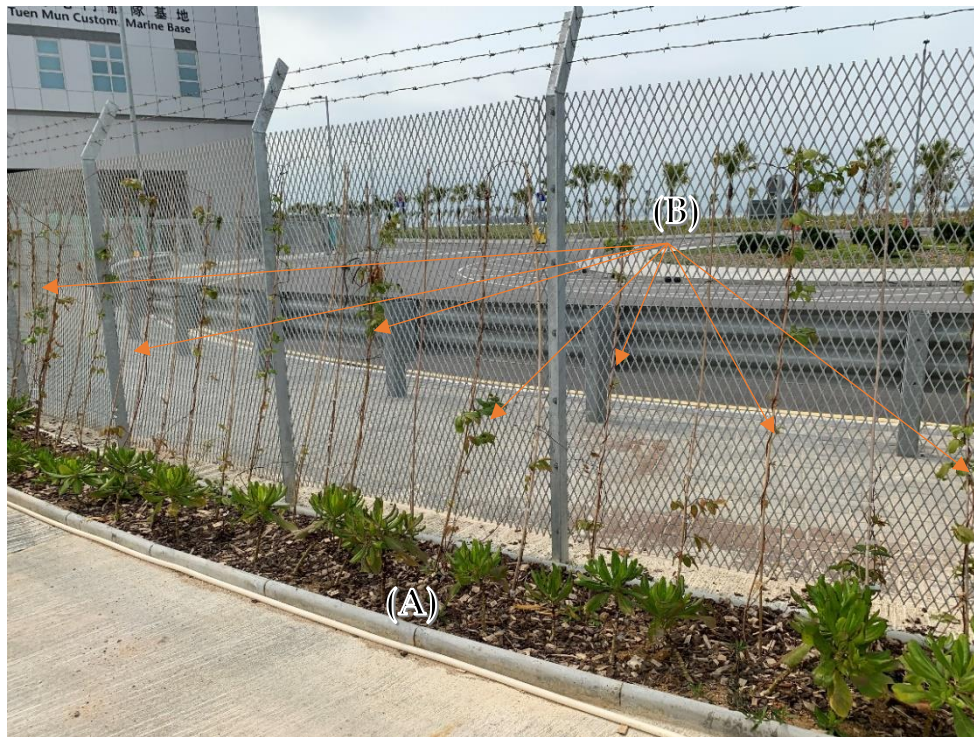


Photo 25: (A): *Scaevola taccada*; and (B): *Quisqualis indica* within Zone 3
(Taken on: 9 March 2021)

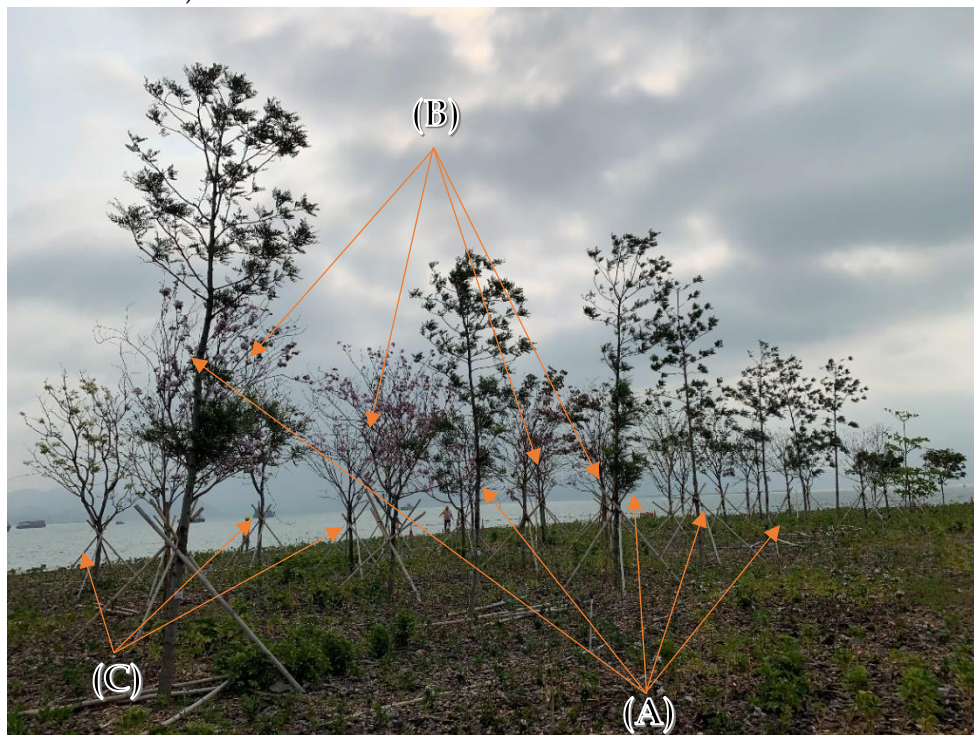


Photo 26: (A): *Grevillea robusta*; (B): *Bauhinia variegata*; and (C): *Sterculia lanceolata* within Zone 4
(Taken on: 9 March 2021)

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Photo 27: *Terminalia catappa* within Zone 4
(Taken on: 9 March 2021)



Photo 28: *Melaleuca quinquenervia* within Zone 4
(Taken on: 9 March 2021)

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Photo 29: *Wodyetia bifurcate* within Zone 4
(Taken on: 9 March 2021)



Photo 30: *Terminalia catappa* within Zone 4
(Taken on: 9 March 2021)

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Photo 31: *Sterculia lanceolate* within Zone 4
(Taken on: 9 March 2021)



Photo 32: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)

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Photo 33: *Grevillea robusta* within Zone 4
(Taken on: 9 March 2021)



Photo 34: *Bauhinia x blakeana* within Zone 4
(Taken on: 9 March 2021)

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Photo 35: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)



Photo 36: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)

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Photo 37: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)



Photo 38: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)

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Photo 39: *Bauhinia variegata* within Zone 4
(Taken on: 9 March 2021)



Photo 40: *Sterculia lanceolata* within Zone 4
(Taken on: 9 March 2021)

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Photo 41: *Viburnum odoratissimum* within Zone 4
(Taken on: 9 March 2021)



Photo 42: *Terminalia catappa* within Zone 4
(Taken on: 9 March 2021)

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Photo 43: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)



Photo 44: *Livistona chinensis* within Zone 4
(Taken on: 9 March 2021)

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Photo 45: *Ixora coccinea* within Zone 5
(Taken on: 9 March 2021)



Photo 46: *Schefflera arboricola* 'variegata' within Zone 5
(Taken on: 9 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
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Photo 47: *Ixora chinensis* within Zone 5
(Taken on: 9 March 2021)

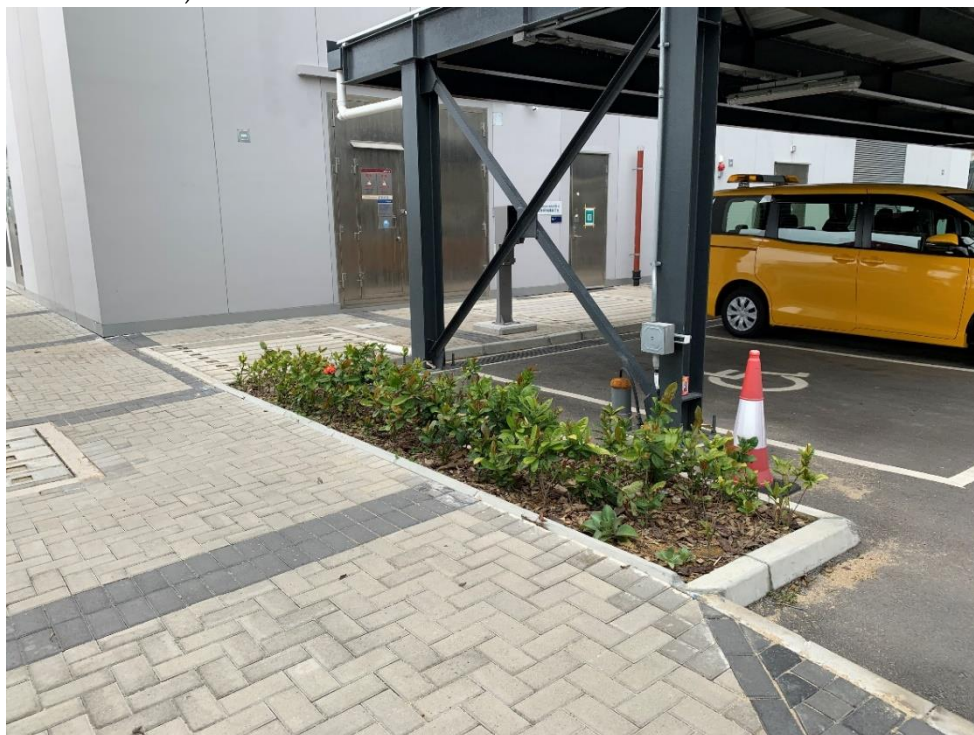


Photo 48: *Ixora chinensis* within Zone 5
(Taken on: 9 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
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Photo 49: *Schefflera arboricola* 'variegata' within Zone 5
(Taken on: 9 March 2021)



Photo 50: *Schefflera arboricola* 'variegata' within Zone 5
(Taken on: 9 March 2021)

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Photo 51: *Schefflera arboricola* 'variegata' within Zone 5
(Taken on: 9 March 2021)

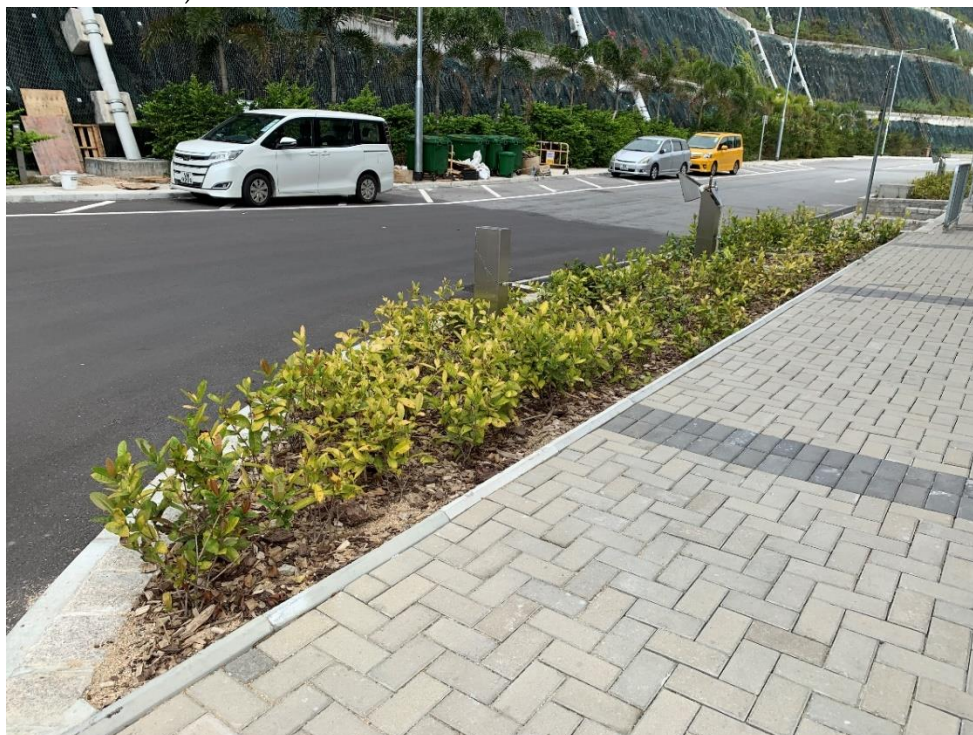


Photo 52: *Ixora coccinea* within Zone 5
(Taken on: 9 March 2021)

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Photo 53: *Ixora coccinea* within Zone 5
(Taken on: 9 March 2021)



Photo 54: *Cuphea hyssopifolia* within Zone 5
(Taken on: 9 March 2021)

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Photo 55: *Wodyetia bifurcate* within Zone 5
(Taken on: 9 March 2021)



Photo 56: *Arachis duranensis* within Zone 5
(Taken on: 9 March 2021)

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Management**





Photo 57: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 58: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 59: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 60: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 61: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)



Photo 62: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 63: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 64: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 65: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 66: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 67: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)



Photo 68: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 69: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 70: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 71: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 72: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 73: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 74: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 75: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)



Photo 76: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 77: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)



Photo 78: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
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Management**





Photo 79: *Plumeria rubra* within Zone 6
(Taken on: 4 March 2021)



Photo 80: *Callistemon viminalis* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 81: *Grevillea robusta* within Zone 6
(Taken on: 4 March 2021)

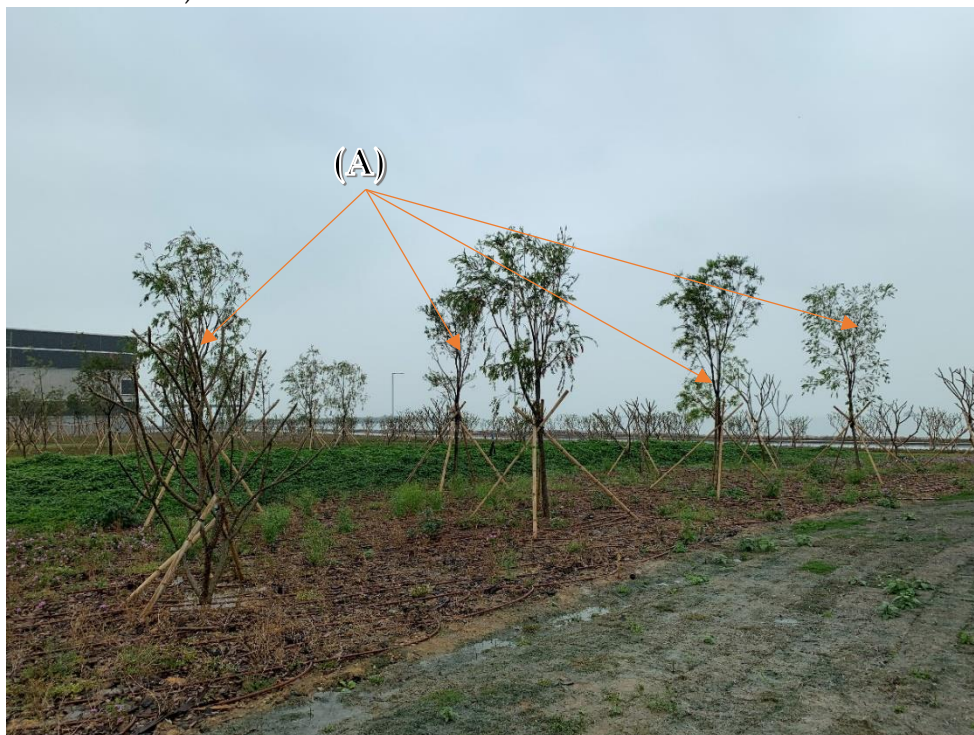


Photo 82: *Callistemon viminalis* within Zone 6
(Taken on: 4 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
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Photo 83: (A): *Callistemon viminalis*; and (B): *Plumeria rubra* within Zone 6
 (Taken on: 4 March 2021)



Photo 84: *Callistemon viminalis* within Zone 6
 (Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
 North Tunnel.JT\08_Site Audit\05_L&V establishment period
 checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
 Resources
 Management**





Photo 85: *Grevillea robusta* within Zone 6
(Taken on: 5 March 2021)



Photo 86: *Grevillea robusta* within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel\JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 87: *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)



Photo 88: *Grevillea robusta* within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel\JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 89: *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)



Photo 90: *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 91: *Plumeria rubra* within Zone 6
(Taken on: 5 March 2021)



Photo 92: (A): *Grevillea robusta*; and (B): *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 93: *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)



Photo 94: *Plumeria rubra* within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
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Management**





Photo 95: (A): *Callistemon viminalis*; and (B): *Plumeria rubra* within Zone 6
 (Taken on: 5 March 2021)



Photo 96: *Grevillea robusta* within Zone 6
 (Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
 North Tunnel.JT\08_Site Audit\05_L&V establishment period
 checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
 Resources
 Management**





Photo 97: *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)



Photo 98: *Callistemon viminalis* within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**





Photo 99: (A): *Zoysia japonica*; and (B): *Tradescantia spathacea* 'Dwarf' within Zone 6
(Taken on: 5 March 2021)

Source: P:\Projects\0463091 Gammon Construction Limited Gammon TMCLKL
North Tunnel.JT\08_Site Audit\05_L&V establishment period
checklist\02_SLF_NLF_TM\01_Feb-Apr 2021

Date: 17/03/21

**Environmental
Resources
Management**

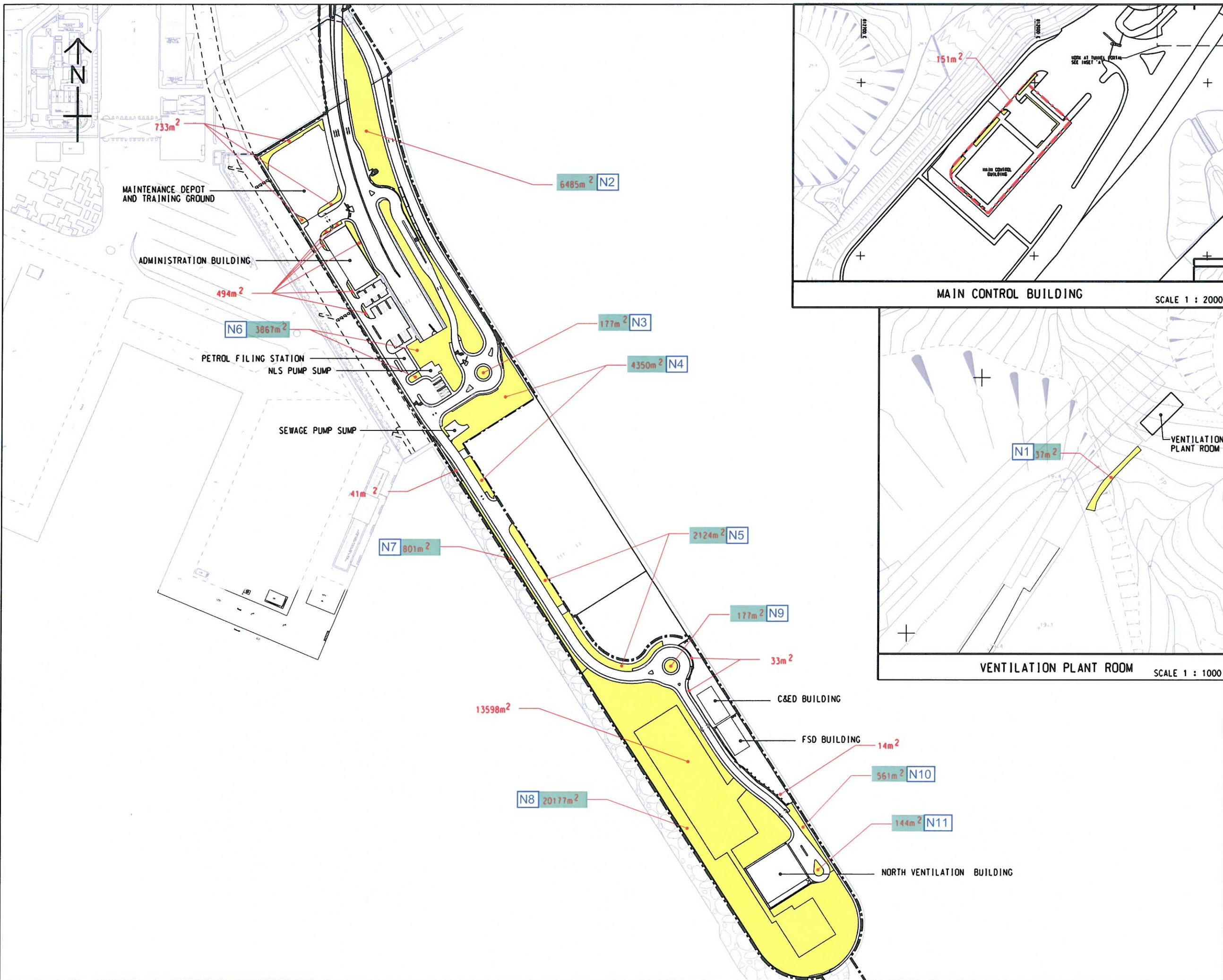


Contract No. HY/2017/10 (C4) Landscape Area Checking for EP Condition 2.9

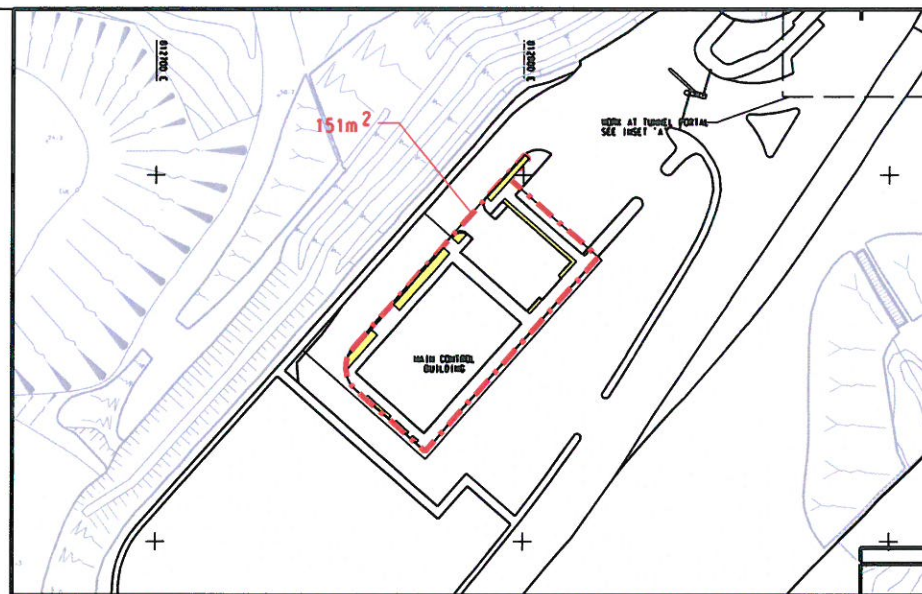
Area Code	Location	Plan Area (sq.m.) Approx.
N1	VPR	37
N2	NLF	6485
N3	NLF	177
N4	NLF	4350
N5	NLF	2124
N6	NLF	3867
N7	NLF	801
N8	NLF	20177
N9	NLF	177
N10	NLF	561
N11	NLF	144
Sub-total (A)		38900
N12	SLF	105314
Sub-total (B)		105314
Total (A) + (B)		144214

ABBREVIATIONS

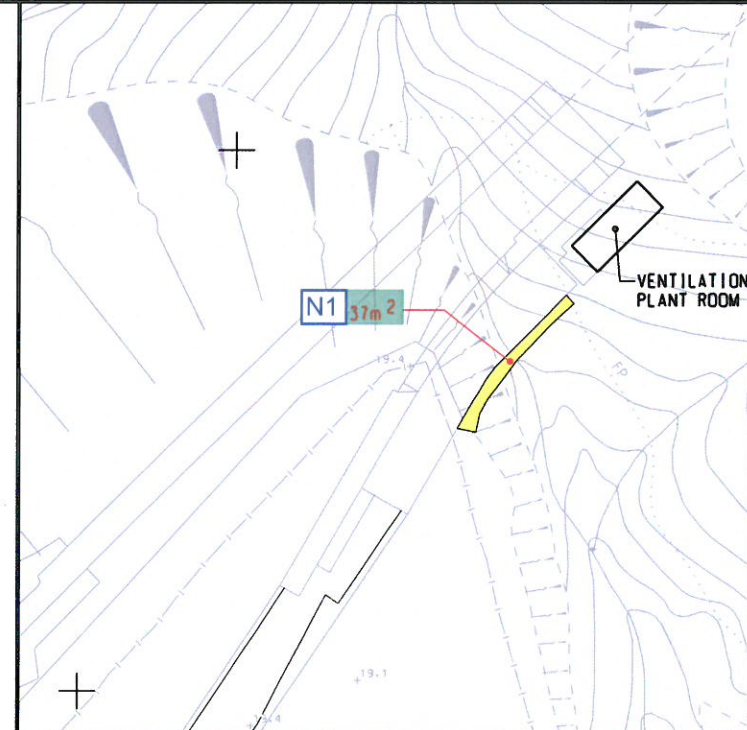
VPR	Ventilation Plant Room
NLF	Northern Landfall
SLF	Southern Landfall



LEGEND:
 - - - - - SITE BOUNDARY
 ■ LANDSCAPE AREA



MAIN CONTROL BUILDING SCALE 1 : 2000



VENTILATION PLANT ROOM SCALE 1 : 1000

APPROVED AND CONFIRMED BY
 TITLE
 AECOM (RLS)
 NAME
 SAMMY TSOI
 SIGNATURE
Sammy Tsoi
 22-3-2021

FOR INFORMATION

REV.	DATE	DESCRIPTION	CHK.	PREP.	DRWN.

CLIENT
 路政署
HIGHWAYS DEPARTMENT
 主要工程管理处 (專責事務)
 Major Works Project Management Office
 (Special Duties)

AECOM Imagine it. Delivered.

PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TUNNEL - BUILDINGS, ELECTRICAL AND MECHANICAL WORKS

PROJECT NO. **60240249** CONTRACT NO. **HY/2017/10**
 SCALE **A3 1:4000** DATE **19 FEB. 2021**

AMENDMENT TO WORKING DRAWING NO.
NIL

CHECKED CL	PREPARED CD	DRAWN JW
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SKETCH TITLE
LANDSCAPE AREA

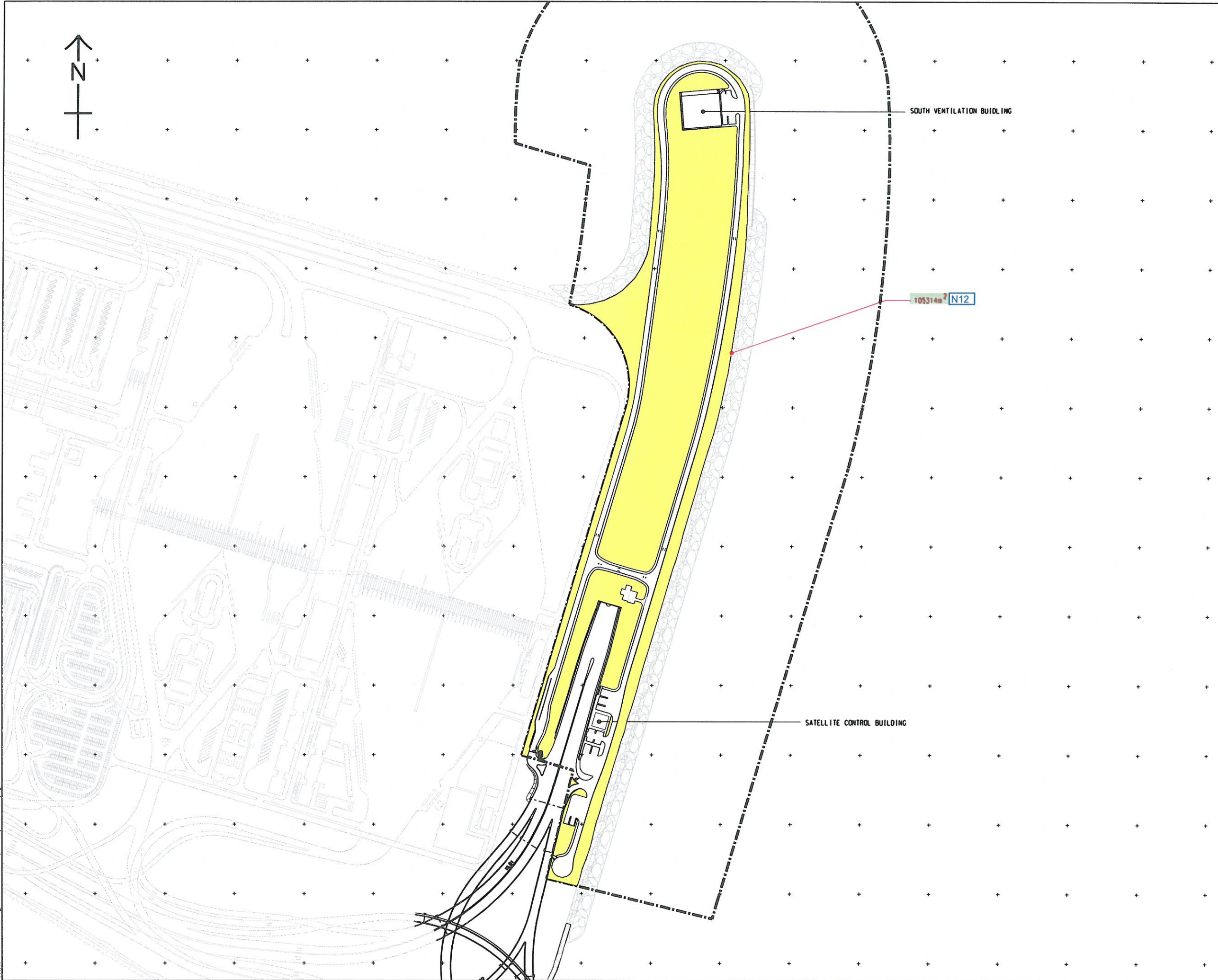
SHEET 1 OF 2


SKETCH NO.
60240249/C4/SK/1011



LEGEND:

- SITE BOUNDARY
- LANDSCAPE AREA



APPROVED AND CONFIRMED BY
 TITLE
 AECOM (RLS)
 NAME
 SAMMY TSOI
 SIGNATURE


22-3-2021

FOR INFORMATION

REV.	DATE	DESCRIPTION	CHK.	PREP.	DRAWN

CLIENT

HIGHWAYS DEPARTMENT
 主要工程管理局 (專責事務)
 Major Works Project Management Office
 (Special Duties)

AECOM Imagine it. Delivered.

PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TUNNEL - BUILDINGS, ELECTRICAL AND MECHANICAL WORKS

PROJECT NO. **60240249** CONTRACT NO. **HY/2017/10**

SCALE **A3 1:4000** DATE **19 FEB. 2021**

AMENDMENT TO WORKING DRAWING NO.
NIL

CHECKED CL	PREPARED CD	DRAWN JW
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SKETCH TITLE
LANDSCAPE AREA

SHEET 2 OF 2

SKETCH NO.
60240249/C4/SK/1012

Summary of Compensatory Trees under Contract No. HY/2017/10

Compensatory tree		Quantity					
Botanical name	Chinese name	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
<i>Areca catechu</i>	檳榔	48					
<i>Bauhinia variegata</i> ^	宮粉羊蹄甲				38		
<i>Bauhinia x blakeana</i>	洋紫荊				10		
<i>Callistemon viminalis</i> *	串錢柳						135
<i>Elaeocarpus apiculatus</i>	尖葉杜英	6					
<i>Elaeocarpus hainanensis</i>	水石榕	18					
<i>Garcinia subelliptica</i>	福木	3					
<i>Grevillea robusta</i> #	銀樺				18		306
<i>Hyophorbe lagenicaulis</i>	酒瓶椰子	16					
<i>Livistona chinensis</i>	蒲葵	87			158		
<i>Melaleuca quinquenervia</i>	白千層				18		
<i>Plumeria rubra</i>	雞蛋花	159					1686
<i>Pongamia pinnata</i>	水黃皮	25			26		
<i>Roystonea regia</i>	王棕	44					
<i>Sterculia lanceolata</i>	假蘋婆				54		
<i>Terminalia catappa</i>	欖仁樹	2			36		
<i>Viburnum odoratissimum</i>	珊瑚樹				10		
<i>Wodyetia bifurcata</i>	狐尾椰子	10			67	4	
<i>Xanthostemon chrysanthus</i>	金蒲桃	13					
	Sub-total	431	0	0	435	4	2127
	Total	2997					

Remarks * 4 nos. in Zone 6 were being re-planted as observed during monitoring.

10 nos. in Zone 6 were being re-planted as observed during monitoring.

^ 2 nos. in Zone 4 should be replaced with the species as per latest planting plan.