

# Civil Engineering and Development Department

**Service Contract No. NDO 04/2019  
Environmental Team for Environmental  
Monitoring and Audit Works in  
Construction Phase for the First Phase  
Development of Kwu Tung North and  
Fanling North New Development Areas**

**Monthly Environmental Monitoring and  
Audit Report for February 2020**

**(Version 2.0)**

Certified By	 _____ Dr. Priscilla Choy (Environmental Team Leader)
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REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

WELLAB accepts no responsibility for changes made to this report by third parties.

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Your reference:

Our reference: HKCEDD14/50/106385

Date: 17 March 2020

Attention: Mr Ryan Chau

**BY EMAIL & POST**  
**(email: hlchau@cedd.gov.hk)**

Dear Sirs

Agreement No.: NDO 16/2018  
Independent Environmental Checker for  
Pre-construction Environmental Monitoring and Audit Works for the Advance and  
First Stage Works of Kwu Tung North and Fanling North New Development Areas  
Monthly Environmental Monitoring and Audit Report No.4 (February 2020) (revised)

We refer to email of 17 March 2020 attaching the Monthly Environmental Monitoring and Audit Report No.4 (revised) prepared by the Environmental Team (ET) of the captioned.

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report No.4 (February 2020) (revised) in accordance with Clause 3.4 of the Environmental Permit no. EP-466/2013, EP-467/2013/A, EP-468/2013/A, EP-469/2013, EP-470/2013, EP-473/2013/A and EP-475/2013/A.

Should you have any queries, please do not hesitate to contact the undersigned or our Ms Katherine Chu on 2618 2831.

Yours faithfully  
ANEWR CONSULTING LIMITED

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Independent Environmental Checker

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**EXECUTIVE SUMMARY****Introduction**

1. This is the 4th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for First Phase Development of Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) (the Project) under “Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas” (hereinafter called the “Service Contract”). This report documents the findings of Environmental Monitoring and Audit (EM&A) work conducted in February 2020.
2. During the reporting month, the following Works Contract was undertaken for the Project:
  - Contract No. ND/2019/06 Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products

**Environmental Monitoring and Audit Progress**

3. A summary of the monitoring activities in this reporting month is listed in **Table I** below:

**Table I Summary Table for Monitoring Activities in the Reporting Month**

Parameter	Date
Noise Monitoring	5 <sup>th</sup> , 14 <sup>th</sup> , 17 <sup>th</sup> , 26 <sup>th</sup> February 2020
Environmental Site Inspection	6 <sup>th</sup> , 12 <sup>th</sup> , 20 <sup>th</sup> , 27 <sup>th</sup> February 2020

**Breaches of Action and Limit Levels**

4. Summary of the environmental exceedances of the reporting month is tabulated in **Table II**.

**Table II Summary Table for Events Recorded in the Reporting Month**

Environmental Monitoring	Parameter	No. of non-project related Exceedances		Total No. of non-project related Exceedances	No. of Exceedance related to the Construction Works of the Contract		Total No. of Exceedance related to the Construction Works of the Contract
		Action Level	Limit Level		Action Level	Limit Level	
Noise	L <sub>eq(30min)</sub>	0	0	0	0	0	0

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### **Construction Noise**

5. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

### **Complaint Log**

6. No environmental complaint was received in the reporting month.

### **Notification of Summons and Successful Prosecutions**

7. No notification of summons or successful prosecution was received in the reporting month.

### **Reporting Changes**

8. This report has been prepared in compliance with the reporting requirements for the subsequent monthly EM&A Report as required by the Updated EM&A Manual for Advance and First Stage Works of KTN and FLN NDAs (Updated EM&A Manual).

### **Future Key Issues**

#### Contract No. ND/2019/06

9. Major site activities for the coming reporting month will include:
  - (a) Breaking up the remaining concrete surface and disposal of C&D material off site at Portion 1;
  - (b) Installation of road kerbs for interim stage;
  - (c) Drainage works for interim stage including construction of U-channel and manhole for interim stage;
  - (d) Construction of road surface for interim stage; and
  - (e) Construction of footing of lighting for interim stage;
10. The commencement of construction works for the Contract No. ND/2019/01 Kwu Tung North New Development Area, Phase 1: Site Formation and Infrastructure Works – Contract 1 is scheduled for 23 March 2020 under Environmental Permit EP-470/2013.

## 1 INTRODUCTION

- 1.1 Wellab Limited was commissioned by Civil Engineering and Development Department (CEDD) as the Environmental Team to undertake the Environmental Monitoring and Audit (EM&A) services for the Works Contracts involved in the implementation of First Phase Development of Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) Project to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permits (EPs), Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the KTN FLN NDAs project and other relevant statutory requirements. This is the 4<sup>th</sup> Monthly EM&A report summarizing the EM&A works for the Project in February 2020.

### **Purpose of the report**

- 1.2 This is the 4<sup>th</sup> EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme in February 2020.

### **Structure of the report**

- 1.3 The structure of the report is as follows:

Section 1: **Introduction** - purpose and structure of the report.

Section 2: **Project Information** - summarises background and scope of the Project, site description, project organisation and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licences during the reporting month.

Section 3: **Noise Monitoring** - summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequencies, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 4: **Environmental Site Inspection** - summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 5: **Environmental Non-conformance** - summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 6: **Future Key Issues** - summarises the impact forecast and monitoring schedule for the next three months.

Section 7: **Conclusions and Recommendations**

## 2 PROJECT INFORMATION

### Background

2.1 The Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) are one of the important sources of land and housing supply in the medium and long term. The development of the KTN and FLN NDAs will be implemented in phase for full completion by 2031. The Phase 1 of the NDAs development, comprising the Advance Works and First Stage Works, is targeted to be implemented from the second half of 2019 progressively. The Advance and First Stage Works would include site formation, engineering infrastructure works (including roads, drainage, sewerage, waterworks, landscaping works, pumping stations, and fresh water and flushing water service reservoirs), soil remediation, reprovisioning of North District Temporary Wholesale Market, development of a nature park at Long Valley and implementation of environmental mitigation measures.

2.2 The scope of works under the Advance and First Stage Works comprises the following:

- a) The Advance Works (PWP item No. 7747CL-2) consist of:
  - i) site formation of land (including soil remediation) in KTN and FLN NDAs for housing, community facilities and engineering infrastructure;
  - ii) construction of roads including the eastern section of Fanling Bypass (FLBP(E)) connecting the FLN NDA to Fanling Highway and other roads with footpaths and cycle tracks, and associated junction/ road improvements;
  - iii) engineering infrastructure works including drainage. Sewerage (including two sewage pumping stations), waterworks (including a fresh water service reservoir and a flushing water service reservoir in the KTN NDA), landscape works and slopeworks;
  - iv) part expansion and upgrading of Shek Wu Hui Sewage Treatment Works (SWHSTW);
  - v) reprovisioning works; and
  - vi) implementation of environmental mitigation measures and environmental monitoring and audit (EM&A) programme for the works mentioned in (i) to (v) above.
- b) The First Stage Works (PWP item No. 7759CL) consist of:
  - i) development of a nature park at Long Valley including provision of a visitor centre and a footbridge spanning across Sheung Yue River for connection between these two facilities;
  - ii) reprovisioning of two egret sites in the FLN NDA and enhancement works to an existing egret site in the KTN NDA;
  - iii) site formation of land for a village resite area and a district police station in the KTN NDA;
  - iv) engineering infrastructure works including roads, drainage, sewerage, waterbirds, and landscape works; and
  - v) implementation of environmental mitigation measures and environmental monitoring and audit (EM&A) programme for the works mentioned in (i) to (iv) above.

2.3 The Project which covers KTN and FLN NDAs is a designated project (DP) under Schedule 3 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). In October 2013, the EIA Report (AEIAR-175/2013) for the Project was approved by the Director of Environmental Protection pursuant to the EIA Ordinance. The First Phase Development of the Project is governed by Environmental Permits (EPs) (EP-466/2013, EP-467/2013/A, EP-468/2013/A, EP-469/2013, EP-470/2013, EP-473/2013/A, EP-474/2013, FEP-02/474/2013, EP-475/2013/A and EP-546/2017) under seven Contracts (Works Contracts No.: ND/2019/01, ND/2019/02, ND/2019/03, ND/2019/04, ND/2019/05, ND/2019/06 and ND/2019/07).

2.4 During the reporting month, the following Works Contract was undertaken for First Phase Development of Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) (the Project):

**Environmental Permit EP-475/2013A**

- Contract No. ND/2019/06 Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products

2.5 The site layout plan for the Contract No. ND/2019/06 is shown in **Drawing no. 60335576/C6/C00/1041**.

**Project Organization**

2.6 Different parties with different levels of involvement in the Project organization include:

- Project Proponent – Civil Engineering and Development Department (CEDD)
- *Supervisor / Supervisor's* Representative – AECOM
- Environmental Team (ET) – Wellab Limited
- Independent Environmental Checker (IEC) – ANewR Consulting Limited (ANewR)

2.7 The key personnel contact names and numbers are summarised in **Table 2.1**.

**Table 2.1 Key Contacts of the Project**

Party	Role	Contact Person	Phone No.	Fax No.
Civil Engineering and Development Department, HKSAR (CEDD)	Project Proponent	Mr. Lai Cheuk Ho	3547 1608	3547 1658
<i>Supervisor / Supervisor's Representative</i> (AECOM)	Resident Engineer	Mr. Leo Mak	6398 0379	3922 9797
Environmental Team (Wellab Limited)	Environmental Team Leader	Dr. Priscilla Choy	2898 7388	2898 7076
Independent Environmental Checker (ANEWR)	Independent Environmental Checker	Mr. James Choi	2618 2836	3007 8648
<b>Contract No. ND/2019/06</b> Contractor (New Concepts Engineering Development Ltd.)	Site Agent	Mr. Anson Chan	9349 1320	2363 2162
	Environmental Officer	Mr. Alex Choy	9409 9608	
	Environmental Coordinator	Ms. Hei Ling Chan	9571 8654	

### Summary of Construction Works Undertaken During Reporting Month

#### Contract No. ND/2019/06

- 2.8 The major site activities undertaken in the reporting month included:
- Breaking up the concrete surface and disposal of C&D material off site at Portion 1;
  - Installation of road kerbs for interim stage;
  - Drainage works for interim stage including construction of U-channel and manhole for interim stage;
  - Erection of formwork and concreting for concrete carriageway; and
  - Ground investigation works at Trial Pit;

#### **Construction Programme**

- 2.9 A copy of Contractor's construction programme is provided in **Appendix A**.

#### **Status of Environmental Licences, Notifications and Permits**

- 2.10 A summary of the relevant permits, licences, and/or notifications on environmental protection for the Contract No. ND/2019/06 is presented in **Table 2.2**.

**Table 2.2 Status of Environmental Licences, Notifications and Permits**

Permit / Licence No.	Valid Period		Status
	From	To	
<b>Environmental Permit (EP)</b>			
EP-475/2013/A	13/01/2017	N/A	Valid
<b>Construction Noise Permit (CNP)</b>			
GW-RN0921-19	25/12/2019	24/2/2020	Expired
GW-RN0113-20	25/02/2020	24/08/2020	Valid
<b>Notification pursuant to Air Pollution Control (Construction Dust) Regulation</b>			
449369	24/09/2019	N/A	Receipt acknowledged by EPD
<b>Billing Account for Construction Waste Disposal</b>			
7035473	17/10/2019	N/A	Valid
<b>Registration of Chemical Waste Producer</b>			
5213-625-N2716-01	02/10/2019	N/A	Valid
<b>Effluent Discharge Licence under Water Pollution Control Ordinance</b>			
450687	--	--	--

### 3 NOISE MONITORING

#### Monitoring Requirements

- 3.1 In accordance with Updated EM&A Manual, construction noise monitoring was conducted in terms of the A-weighted equivalent continuous sound pressure level (Leq) to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix B** shows the established Action and Limit Levels for the environmental monitoring works.

#### Monitoring Location

- 3.2 Impact noise monitoring was conducted at the monitoring station under the Contract No. ND/2019/06, as shown in **Figure 2** according to Table 1.1 of Updated EM&A Manual. **Table 3.1** describes the locations of the noise monitoring stations.

**Table 3.1 Location of Noise Monitoring Stations**

Contract No.	Monitoring Station	Location
ND/2019/06	CP-FLN-NMS1	Belair Monte

#### Monitoring Equipment

- 3.3 Integrating Sound Level Meter was used for impact noise monitoring. The meters are Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (Leq) and percentile sound pressure level (Lx) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.2** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix C**.

**Table 3.2 Noise Monitoring Equipment**

Equipment	Model	Quantity
Integrating Sound Level Meter	SVAN957	1
	SVAN977	1
Calibrator	SV 30A	1

#### Monitoring Parameters, Frequency and Duration

- 3.4 **Table 3.3** summarises the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

**Table 3.3 Noise Monitoring Parameters, Duration and Frequency**

Contract No.	Monitoring Stations	Parameter	Duration	Frequency	Measurement
ND/2019/06	CP-FLN-NMS1	L <sub>10(30 min.)</sub> dB(A) L <sub>90(30 min.)</sub> dB(A) L <sub>eq(30 min.)</sub> dB(A) (as six consecutive L <sub>eq, 5min</sub> readings)	0700-1900 hrs on normal weekdays	Once per week	Façade

**Remarks:**

A-weighted equivalent continuous sound pressure level (L<sub>eq</sub>). It is the constant noise level which, under a given situation and time period, contains the same acoustic energy as the actual time-varying noise level.

L<sub>10</sub> is the level exceeded for 10% of the time. For 10% of the time, the sound or noise has a sound pressure level above L<sub>10</sub>.

L<sub>90</sub> is the level exceeded for 90% of the time. For 90% of the time, the noise level is above this level.

**Monitoring Methodology and QA/QC Procedures**

- The microphone head of the sound level meter was positioned at 1m from the exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acted as a reflecting surface;
- The battery condition was checked to ensure the correct functioning of the meter;
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : L<sub>eq(30 min.)</sub> dB(A)  
(as six consecutive L<sub>eq, 5min</sub> readings) during non-restricted hours (i.e. 0700-1900 hrs on normal weekdays)
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment;
- During the monitoring period, the L<sub>eq</sub>, L<sub>90</sub> and L<sub>10</sub> were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- Noise measurement was paused temporarily during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible and observation record during measurement period should be provided; and
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. The wind speed should be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

**Maintenance and Calibration**

- 3.5 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.6 The sound level meter and calibrator were checked and calibrated at yearly intervals.

- 3.7 Immediately prior to and following each noise measurement, the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration levels before and after the noise measurement agreed to within 1.0 dB.

### Results and Observations

- 3.8 The noise monitoring results are summarised in **Table 3.4**. Detailed monitoring results and graphical presentations of noise monitoring are shown in **Appendix E**. The weather information for the reporting month is summarized in **Appendix F**.

**Table 3.4 Summary Table of Noise Monitoring Results during the Reporting Month**

Contract No.	Monitoring Station	Construction Noise Level Leq (30 min), dB(A)	Baseline Level, dB(A)	Limit Level, dB(A)
ND/2019/06	CP-FLN-NMS1	65.2-67.0	69.9	75

- 3.9 All noise monitoring was conducted as scheduled in the reporting month. No complaint was received during the reporting. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix H**.
- 3.10 According to our field observations, the major noise source identified at the designated noise monitoring stations in the reporting month are as follows:

**Table 3.5 Observation at Noise Monitoring Stations**

Contract No.	Monitoring Station	Location	Major Noise Source
ND/2019/06	CP-FLN-NMS1	Belair Monte	Road Traffic at Ma Sik Road

### Event and Action Plan

- 3.11 Should any project related non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix G** shall be carried out.

## 4 ENVIRONMENTAL SITE INSPECTION

### Site Audits

- 4.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures on the Contract site. The summaries of site audits are attached in **Appendix I**.
- 4.2 Site audits were conducted on 6<sup>th</sup>, 12<sup>th</sup>, 20<sup>th</sup>, 27<sup>th</sup> February 2020 by ET after the commencement of construction works for the Contract No. ND/2019/06. A joint site audit with the representative of the *Supervisor's* Representative, the Contractor, IEC and ET was carried out on 12<sup>th</sup> February 2020. The details of observations during site audit are shown in **Table 4.1**.
- 4.3 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarised in **Table 4.1**.

**Table 4.1 Observations and Recommendations of Site Audit**

Parameters	Date	Observations and Recommendations	Follow-up
<i>Air Quality</i>	27/02/2020	The excavated or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water.	Follow up action will be reported in next reporting month.
		Valid Non-road Mobile Machinery (NRMM) labels should be displayed on regulated machines (RO-04) and (EX-14).	
<i>Water Quality</i>	06/02/2020	Waste was found in temporary ditch for runoff discharge into appropriate watercourse. The Contractor should clean the channel at the site regularly at the site exit.	Improvement/ Rectification was observed during follow-up audit session on 12 February 2020.
	12/02/2020	Sandbag should be placed along the U-channel to prevent direct discharge into nearby watercourse from site.	Improvement/Rectification was observed during follow-up audit session on 20 February 2020.
	20/02/2020	Muddy water at the cut-off drain at the site entrance was observed overflow. The Contractor was reminded to review the capacity of the drain and rectify it ASSP.	Improvement/ Rectification was observed during follow-up audit session on 27 February 2020.
<i>Waste / Chemical Management</i>	06/02/2020	Chemical waste, waste oil are not stored properly in the designated place. The Contractor should provide suitable area for temporary storage of chemical waste.	Improvement/ Rectification was observed during follow-up audit session on 12 February 2020.
	20/02/2020	The Contractor should store the chemical waste container properly at the chemical waste storage area before disposal.	Improvement/ Rectification was observed during follow-up audit session on 27 February 2020.

Parameters	Date	Observations and Recommendations	Follow-up
	27/02/2020	The excavated or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water.	Follow up action will be reported in next reporting month.
<b>Landscape &amp; Visual Impact</b>	20/02/2020	The Contractor should clear the construction materials/wastes properly within the tree protection zone.	Improvement/Rectification was observed during follow-up audit session on 27 February 2020.

### Implementation Status of Environmental Mitigation Measures

- 4.4 According to the EIA Report, EP and the EM&A Manual, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule is provided in **Appendix J**. The photographic records of measures to mitigate environmental impacts are presented in **Table 4.2**.

**Table 4.2 Photographic Records of Measures**



### Solid and Liquid Waste Management Status

- 4.5 Waste generated from Contract No. ND/2019/06 includes inert construction and demolition (C&D) materials and non-inert C&D wastes.
- 4.6 The amount of wastes generated by the construction works of the Contract No. ND/2019/06 during the reporting month is shown in **Appendix K**.
- 4.7 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the Updated EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures are summarized in **Appendix J**.

## **5 ENVIRONMENTAL NON-CONFORMANCE**

### **Summary of Exceedances**

- 5.1 No exceedance of Action and Limit Levels of construction noise in the reporting month. The summary of exceedance record in reporting month is shown in **Appendix H**.
- 5.2 Should the monitoring results of the environmental monitoring parameters at any designated monitoring stations indicate that the Action / Limit Levels are exceeded, the actions in accordance with the Event and Action Plans in **Appendix G** be carried out.

### **Summary of Environmental Non-Compliance**

- 5.3 No environmental non-compliance was recorded in the reporting month.

### **Summary of Environmental Complaint**

- 5.4 No environmental complaints were received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix L**.

### **Summary of Environmental Summon and Successful Prosecution**

- 5.5 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix M**.

## 6 FUTURE KEY ISSUES

### Key Issues in the Coming Month

#### Contract No. ND/2019/06

- 6.1 Major site activities for the coming reporting month will include:
- (a) Breaking up the remaining concrete surface and disposal of C&D material off site at Portion 1;
  - (b) Installation of road kerbs for interim stage;
  - (c) Drainage works for interim stage including construction of U-channel and manhole for interim stage;
  - (d) Construction of road surface for interim stage; and
  - (e) Construction of footing of lighting for interim stage.
- 6.2 The commencement of construction works for the Contract No. ND/2019/01 Kwu Tung North New Development Area, Phase 1: Site Formation and Infrastructure Works – Contract 1 is scheduled for 23 March 2020 under Environmental Permit EP-470/2013.

### Monitoring Schedule for the Next Month

- 6.3 The tentative environmental monitoring schedule for the next month is shown in **Appendix D**.

### Construction Programme for the Next Month

- 6.4 A tentative construction programme is provided in **Appendix A**.

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## 7 CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 7.1 The EM&A Report presents the EM&A work undertaken in February 2020 in accordance with Updated EM&A Manual.
- 7.2 No Action/Limit Level exceedance was recorded for construction noise.
- 7.3 Environmental site inspections were conducted on 6<sup>th</sup>, 12<sup>th</sup>, 20<sup>th</sup>, 27<sup>th</sup> February 2020 by ET in the reporting month.
- 7.4 There was no environmental complaint, no notification of summons or successful prosecution received in the reporting month.
- 7.5 The ET would keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

### Recommendations

- 7.6 According to the environmental audit performed in the reporting month, the following recommendations were made:

#### *Air Quality Impact*

- To enhance the dust suppression measures such as water spraying on all haul roads and expose work site area; and
- To maintain the impervious material to cover the stockpile of dusty materials; and
- To ensure all regulated machines with valid Non-road Mobile Machinery (NRMM) labels.

#### *Water Impact*

- To prevent any surface runoff discharge into nearby drainage or stream;
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge; and
- To ensure the drainage facilities would not be clogged with waste to avoid overflow.

#### *Waste/Chemical Management*

- To avoid improper handling, storage and dispose of oil drums or chemical containers on site; and
- To store chemical waste/waste oil properly in the designated place before disposal.

#### *Landscape & Visual Impact*

- To clear the construction materials/wastes properly within the tree protection zone.

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**DRAWING(S)**

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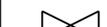
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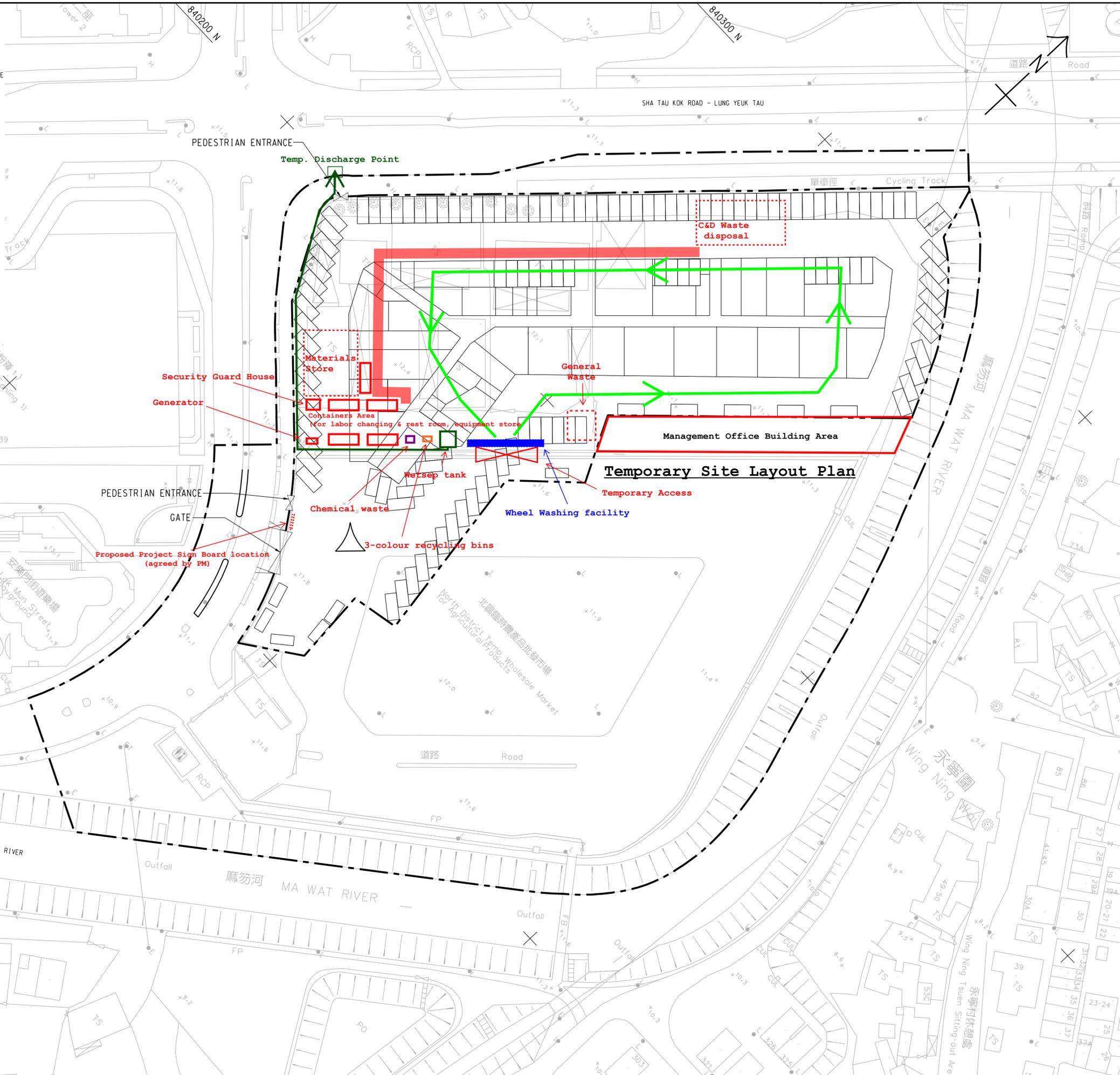
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 Designer: DMCH  
 Checked: ALUI  
 Project Management Initials:  
 28/04/2019  
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**NOTES:**

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NO. 60335576/C6/C00/1042.
- REFER TO CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT STANDARD DRAWINGS NOS. C1004/1 AND C1004/2 AND C1004/3 FOR DETAILS OF HOARDING. THE COLOR OF THE HOARDING BOARD SHALL BE CHANGED TO DULL GREEN AND THE PROPOSAL SHALL BE SUBMITTED TO THE PROJECT MANAGER FOR ACCEPTANCE.
- REFER TO CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT STANDARD DRAWING NOS. C1007 AND C1008B FOR DETAILS OF THE GATES.
- EXACT LOCATION AND EXTENTS OF HOARDING TO BE CONFIRMED BY THE SUPERVISOR.
- THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISOR.
- HOARDING TO BE ERECTED ALONG LIMITS OF WORK AND TEMPORARY WORKSITE.

**LEGEND:**

-  SITE BOUNDARY
-  CEDD HOARDING TYPE (NOTE 2)
-  GATE (NOTE 3)
-  Containers
-  Water Flow
-  Traffic Flow
-  Pedestrian walkway



**Temporary Site Layout Plan**



**PROJECT**  
 項目  
**DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREAS, PHASE 1**

**CONTRACT TITLE:**  
 FANLING NORTH NEW DEVELOPMENT AREA, PHASE 1: REPROVISIONING OF NORTH DISTRICT TEMPORARY WHOLESALE MARKET FOR AGRICULTURAL PRODUCTS

**CLIENT**  
 業主  
 土木工程拓展署  
 Civil Engineering and Development Department

**CONSULTANT**  
 工程顧問公司  
 AECOM Asia Company Ltd.  
 www.aecom.com

**SUB-CONSULTANTS**  
 分判工程顧問公司

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION	CHK.
-	FEB-19	TENDER DRAWING	ALUI

**STATUS**

擬定

**SCALE**      **DIMENSION UNIT**

比例      尺寸單位

A1 1:500      METRES

**KEY PLAN**

索引圖

**PROJECT NO.**      **CONTRACT NO.**  
 項目編號      合約編號  
 60335576      ND/2019/06

**SHEET TITLE**  
 圖紙名稱  
**Site Layout Plan (INTERIM STAGE)**

**SHEET NUMBER**  
 圖紙編號  
 60335576/C6/C00/1041

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**FIGURE(S)**

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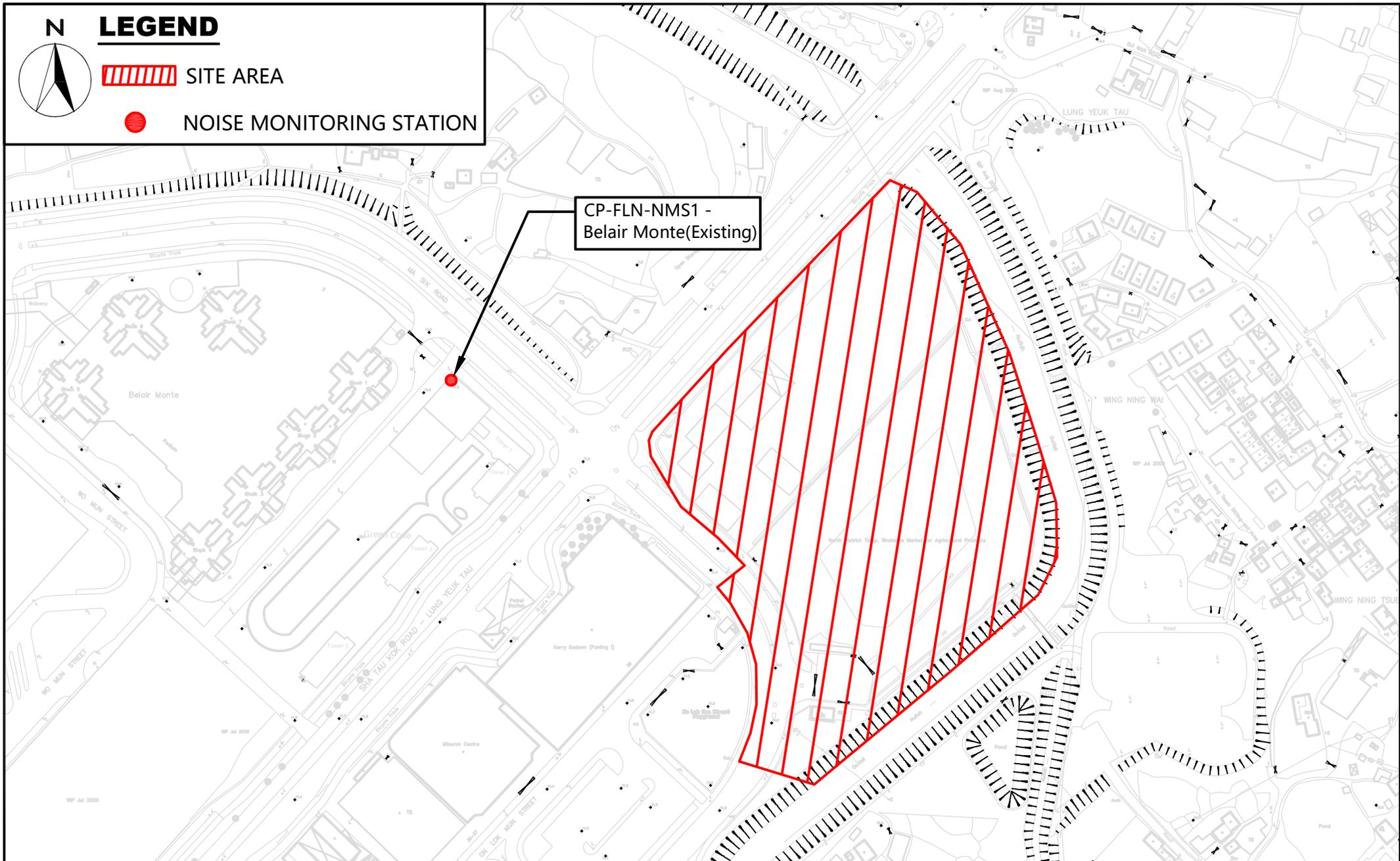
# LEGEND



SITE AREA



NOISE MONITORING STATION



CP-FLN-NMS1 -  
Belair Monte(Existing)



Service Contract No. NDO 04/2019 Environmental Team for EM&A Works in Construction Phase for the First Phase Development of KTN and FLN NDAs  
Contract No. ND/2019/06 Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products  
Location of Noise Monitoring Station

SCALE	A4 @ 1: 6000	DATE	FEB 2020
CHECK	KL	DRAWN	KIKI
PROJECT No.	WMA20002	FIGURE NO.	1
		REV	-

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**APPENDIX A  
CONSTRUCTION PROGRAMME**

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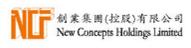




**Contract No. ND/2019/06 Fanling North New Development Area, Phase 1:  
Reprovisioning of North District Temporary Wholesale Market for Agricultural Products  
First Programme**

Ref: FP-01 rev 4

ID	WBS	Activities	Duration	Start	Finish	Float	Gantt Chart																								
							019	Qtr 4, 2019	Qtr 1, 2020	Qtr 2, 2020	Qtr 3, 2020	Qtr 4, 2020	Qtr 1, 2021	Qtr 2, 2021	Qtr 3, 2021																
							Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
105	7.1.2	ELS for management office building	90 days	Fri 27 Sep '19	Wed 25 Dec '19	0 days																									
106	7.1.3	CSD & CBWD submission	60 days	Thu 26 Dec '19	Sun 23 Feb '20	0 days																									
107	7.1.4	BIM model submission	60 days	Mon 24 Feb '20	Thu 23 Apr '20	44 days																									
108	7.2	<b>Construction</b>	<b>469 days</b>	<b>Sat 21 Dec '19</b>	<b>Fri 02 Apr '21</b>	<b>0 days</b>																									
109	7.2.1	Site formation for management office building	30 days	Sat 21 Dec '19	Sun 19 Jan '20	0 days																									
110	7.2.2	Carcass of management office building	120 days	Mon 20 Jan '20	Sat 06 Jun '20	0 days																									
111	7.2.3	Fitout works of management office building	150 days	Sun 07 Jun '20	Tue 03 Nov '20	0 days																									
112	7.2.4	Transformer installation	15 days	Wed 04 Nov '20	Wed 18 Nov '20	0 days																									
113	7.2.5	Generator installation	15 days	Thu 19 Nov '20	Thu 03 Dec '20	0 days																									
114	7.2.6	MEP installation	120 days	Fri 04 Dec '20	Fri 02 Apr '21	0 days																									
115	8	<b>Portion 5</b>	<b>558 days</b>	<b>Fri 27 Sep '19</b>	<b>Tue 06 Apr '21</b>	<b>3 days</b>																									
116	8.1	<b>Submission</b>	<b>120 days</b>	<b>Fri 27 Sep '19</b>	<b>Fri 24 Jan '20</b>	<b>68 days</b>																									
117	8.1.1	Demolition Plan	120 days	Fri 27 Sep '19	Fri 24 Jan '20	65 days																									
118	8.2	<b>Construction</b>	<b>373 days</b>	<b>Mon 30 Mar '20</b>	<b>Tue 06 Apr '21</b>	<b>3 days</b>																									
119	8.2.1	Demolition of public toilet	45 days	Mon 30 Mar '20	Wed 20 May '20	0 days																									
120	8.2.2	Backfilling to ground level	15 days	Thu 21 May '20	Sat 06 Jun '20	1 day																									
121	8.2.3	<b>Retaining wall Bay 1</b>	<b>164 days</b>	<b>Mon 08 Jun '20</b>	<b>Wed 18 Nov '20</b>	<b>3 days</b>																									
122	8.2.3.1	Mini-pile (18 nos.)	45 days	Mon 08 Jun '20	Wed 29 Jul '20	0 days																									
123	8.2.3.2	Load testing for mini-pile	16 days	Thu 30 Jul '20	Mon 17 Aug '20	0 days																									
124	8.2.3.3	Structural works	60 days	Tue 18 Aug '20	Mon 26 Oct '20	0 days																									
125	8.2.3.4	Backfilling works	20 days	Tue 27 Oct '20	Wed 18 Nov '20	0 days																									
126	8.2.4	<b>Retaining wall Bay 2</b>	<b>157 days</b>	<b>Wed 15 Jul '20</b>	<b>Fri 18 Dec '20</b>	<b>3 days</b>																									
127	8.2.4.1	Mini-pile (22 nos.)	60 days	Wed 15 Jul '20	Tue 22 Sep '20	0 days																									
128	8.2.4.2	Load testing for mini-pile	15 days	Wed 23 Sep '20	Fri 09 Oct '20	0 days																									
129	8.2.4.3	Structural works	45 days	Sat 10 Oct '20	Tue 01 Dec '20	0 days																									
130	8.2.4.4	Backfilling works	15 days	Wed 02 Dec '20	Fri 18 Dec '20	0 days																									
131	8.2.5	Hard paving works and road marking	20 days	Sat 19 Dec '20	Mon 11 Jan '21	0 days																									
132	8.2.6	Landscape works	85 days	Tue 12 Jan '21	Tue 06 Apr '21	3 days																									
133	9	<b>Portion 6</b>	<b>558 days</b>	<b>Fri 27 Sep '19</b>	<b>Tue 06 Apr '21</b>	<b>0 days</b>																									
134	9.1	<b>Submission</b>	<b>105 days</b>	<b>Fri 27 Sep '19</b>	<b>Thu 09 Jan '20</b>	<b>0 days</b>																									
135	9.1.1	Tree surveying report	60 days	Fri 27 Sep '19	Mon 25 Nov '19	160 days																									
136	9.1.2	Method statement for tree felling	75 days	Fri 27 Sep '19	Tue 10 Dec '19	145 days																									
137	9.1.3	Method statement for trial pits at revetment	90 days	Fri 27 Sep '19	Wed 25 Dec '19	0 days																									
138	9.1.4	Method statement for soil replacement at revetment	105 days	Fri 27 Sep '19	Thu 09 Jan '20	0 days																									
139	9.2	<b>Construction</b>	<b>558 days</b>	<b>Fri 27 Sep '19</b>	<b>Tue 06 Apr '21</b>	<b>24 days</b>																									
140	9.2.1	GI (borehole 2 nos.)	40 days	Fri 27 Sep '19	Tue 12 Nov '19	535 days																									
141	9.2.2	GI (trial pits 7 nos.)	30 days	Thu 26 Dec '19	Fri 24 Jan '20	1 day																									
142	9.2.3	Tree felling	45 days	Mon 04 May '20	Wed 17 Jun '20	317 days																									
143	9.2.4	Soil replacement at river revetment next to Portions 1 & 4	30 days	Fri 10 Jan '20	Thu 13 Feb '20	0 days																									
144	9.2.5	Landscape works at river revetment next to Portions 1 & 4	30 days	Fri 14 Feb '20	Sat 14 Mar '20	14 days																									
145	9.2.6	Soil replacement at river revetment next to Portion 3	90 days	Mon 02 Nov '20	Sat 13 Feb '21	0 days																									
146	9.2.7	Landscape works at river revetment next to Portion 3	30 days	Sun 14 Feb '21	Mon 15 Mar '21	46 days																									
147	9.2.8	Reinstatement of hard pavement / footpath	44 days	Mon 15 Feb '21	Tue 06 Apr '21	3 days																									
148	10	<b>Statutory Submissions</b>	<b>28 days</b>	<b>Sat 03 Apr '21</b>	<b>Fri 30 Apr '21</b>	<b>0 days</b>																									
149	10.1	Form FS314A with FS251 - Fire Services Installation Plans	7 days	Sat 03 Apr '21	Fri 09 Apr '21	0 days																									
150	10.2	FSD inspection	14 days	Sat 10 Apr '21	Fri 23 Apr '21	0 days																									
151	10.3	FSD acknowledgement	7 days	Sat 24 Apr '21	Fri 30 Apr '21	0 days																									



Critical Split ..... Task █ Milestone ◆ Summary  Critical █

Remarks: Health and safety requirements has all been included in this programme

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**APPENDIX B**  
**ACTION AND LIMIT LEVELS**

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## Appendix B - Action and Limit Levels

### **Contract No. ND/2019/06 Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products**

**Table B-1 Action and Limit Levels for Construction Noise**

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *

Noted:

If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

(\*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

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**APPENDIX C  
COPIES OF CALIBRATION  
CERTIFICATES**

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**TEST REPORT**

**APPLICANT:** Wellab Limited  
(EM&A Department)  
Room 1701, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	31950A
Date of Issue:	2019-08-14
Date Received:	2019-08-12
Date Tested:	2019-08-12
Date Completed:	2019-08-14
Next Due Date:	2020-08-13
Page:	1 of 1

**ATTN:** Mr. W. K. Tang

**Certificate of Calibration**

**Item for Calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

**Test Conditions:**

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

**Test Specifications**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

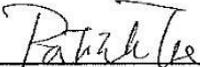
**Results:**

Reference Set Point, dB	Instrument Reading, dB
94	94.0
114	114.0

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
Laboratory Manager

## TEST REPORT

**APPLICANT:** Wellab Limited  
(EM&A Department)  
Room 1701, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	32049A
Date of Issue:	2019-09-16
Date Received:	2019-09-13
Date Tested:	2019-09-13
Date Completed:	2019-09-16
Next Due Date:	2020-09-15

Page: 1 of 1

**ATTN:** Mr. W. K. Tang

### Certificate of Calibration

**Item for calibration:**

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 977
Serial No.	: 45467
Microphone No.	: 62838
Equipment No.	: N-08-13

**Test conditions:**

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

**Test Specifications:**

Performance checking at 94 and 114 dB

**Methodology:**

In-house method, according to manufacturer instruction manual

**Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager

## TEST REPORT

**APPLICANT:** Wellab Limited  
(EM&A Department)  
Room 1701, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	32243A
Date of Issue:	2019-09-30
Date Received:	2019-09-27
Date Tested:	2019-09-27
Date Completed:	2019-09-30
Next Due Date:	2020-09-29

Page: 1 of 1

**ATTN:** Mr. W. K. Tang

### Certificate of Calibration

**Item for calibration:**

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

**Test conditions:**

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

**Methodology:**

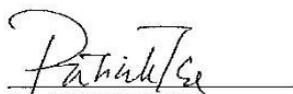
The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

**Results:**

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager

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**APPENDIX D  
ENVIRONMENTAL MONITORING  
SCHEDULES**

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**Contract No. NDO 04/2019**  
**Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas**  
**Impact Noise Monitoring for February 2020**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Feb
2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb
			Noise (CP-FLN-NMS1)			
9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
					Noise (CP-FLN-NMS1)	
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
	Noise (CP-FLN-NMS1)					
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	29-Feb
			Noise (CP-FLN-NMS1)			

**ND/2019/06 - Fanling North New Development Area, Phase 1: Reprovisioning of North District Temporary Wholesale Market for Agricultural Products**  
**Noise Monitoring Station**  
CP-FLN-NMS1 (Belair Monte)

**Contract No. NDO 04/2019**  
**Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas**  
**Tentative Impact Noise Monitoring for March 2020**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>1-Mar</b>	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar
		Noise (CP-FLN-NMS1)				
<b>8-Mar</b>	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
		Noise (CP-FLN-NMS1)				
<b>15-Mar</b>	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
	Noise (CP-FLN-NMS1)					
<b>22-Mar</b>	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
	Noise (CP-FLN-NMS1)					
<b>29-Mar</b>	30-Mar	31-Mar				
	Noise (CP-FLN-NMS1)					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

**ND/2019/06 - Fanling North New Development Area, Phase 1: Reprovisioning of North District Temporary Wholesale Market for Agricultural Products**

**Noise Monitoring Station**

CP-FLN-NMS1 Belair Monte (Existing)

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**APPENDIX E  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATION**

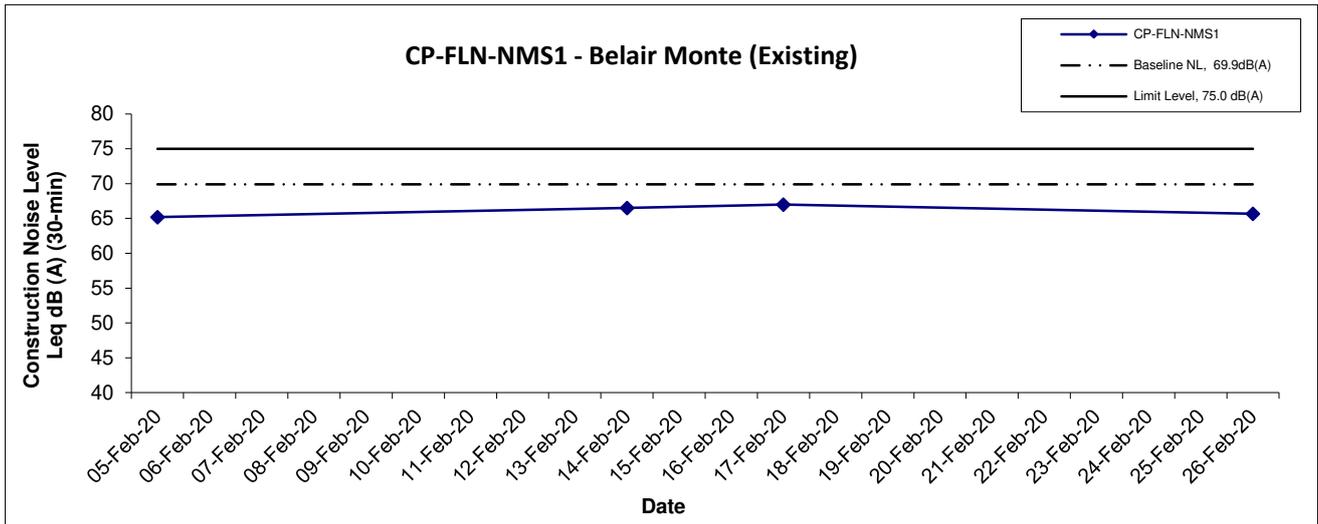
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**Appendix E - Noise Monitoring Results**

Location CP-FLN-NMS1 - Belair Monte (Existing)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
5-Feb-20	Cloudy	9:35	64.9	68.8	52.4	65.2	69.9	65.2 Measured ≤ Baseline
		9:40	64.7	68.7	53.9			
		9:45	65.1	68.8	52.5			
		9:50	66.1	69.9	58.0			
		9:55	65.6	69.8	53.3			
		10:00	64.5	68.7	53.7			
14-Feb-20	Cloudy	10:20	66.7	71.0	56.6	66.5	69.9	66.5 Measured ≤ Baseline
		10:25	67.4	70.6	56.7			
		10:30	67.3	70.6	55.4			
		10:35	65.2	69.3	54.5			
		10:40	65.6	68.9	58.0			
		10:45	66.5	69.4	56.8			
17-Feb-20	Sunny	9:30	65.2	68.7	54.9	67.0	69.9	67.0 Measured ≤ Baseline
		9:35	66.8	70.1	57.4			
		9:40	66.5	69.8	57.5			
		9:45	66.8	68.9	55.0			
		9:50	69.2	73.0	55.2			
		9:55	66.7	70.2	56.6			
26-Feb-20	Sunny	15:35	64.7	68.8	55.2	65.7	69.9	65.7 Measured ≤ Baseline
		15:40	66.6	70.4	56.2			
		15:45	65.6	69.6	54.3			
		15:50	65.8	69.5	53.7			
		15:55	64.6	68.2	55.8			
		16:00	66.3	70.1	55.6			

## Noise Levels



Title CEDD NDO 042019 ET Construction 1 Ph Dev Kwu Tung Fanling North Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. WMA20002	
	Date Feb 20	Appendix E	

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**APPENDIX F**  
**WEATHEER CONDITION**

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**APPENDIX F –****GENERAL WEATHER CONDITIONS DURING THE MONITORING PERIOD**

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
1 February 2020	16.0	72	0.0
2 February 2020	17.1	77	0.0
3 February 2020	18.1	78	Trace
4 February 2020	17.3	84	0.8
5 February 2020	17.5	83	1.0
6 February 2020	17.1	77	Trace
7 February 2020	18.7	82	0.0
8 February 2020	17.8	76	0.0
9 February 2020	16.5	77	Trace
10 February 2020	16.9	76	0.0
11 February 2020	17.6	86	0.8
12 February 2020	20.6	89	0.0
13 February 2020	19.6	94	41.6
14 February 2020	20.4	94	9.7
15 February 2020	21.0	95	Trace
16 February 2020	14.2	82	25.5

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
17 February 2020	13.6	53	0.0
18 February 2020	14.7	57	0.0
19 February 2020	16.3	69	0.0
20 February 2020	17.7	70	0.0
21 February 2020	18.9	73	0.0
22 February 2020	20.1	73	0.0
23 February 2020	19.4	71	0.0
24 February 2020	19.6	76	0.0
25 February 2020	21.8	84	Trace
26 February 2020	23.3	82	0.0
27 February 2020	20.5	84	0.4
28 February 2020	20.8	78	0.0
29 February 2020	22.5	80	0.0

\* The above information was extracted from the daily weather summary by Hong Kong Observatory.

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**APPENDIX G**  
**EVENT ACTION PLANS**

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**Appendix G: Event / Action Plan for Construction Noise**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC, ER and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss jointly with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the monitoring data submitted by the ET;</li> <li>2. Review the construction methods and proposed remedial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify the Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to ER and copy to the IEC and ET;</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC, ER and Contractor;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase the monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures with the ER and Contractor to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and Contractor the causes and actions taken for</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst the ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify the Contractor;</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to the ER and copy to the ET and IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problems still not under control;</li> <li>5. Stop the relevant</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	the exceedances; 7. Assess effectiveness of Contractor’s remedial actions and keep IEC informed of the results; 8. If exceedance stops, cease additional monitoring.		and instruct the Contractor to stop that portion of work until the exceedance is abated.	portion of works as determined by the ER until the exceedance is abated.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, ER – Engineer’s Representative

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**APPENDIX H  
SUMMARY OF EXCEEDANCE**

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**Appendix H: Exceedance Report****(A) Exceedance Report for Construction Noise**

<b>Environmental Monitoring</b>	<b>Parameter</b>	<b>No. of non-project related Exceedance</b>		<b>No. of Exceedance related to the Construction Activities of this Contract</b>	
		<b>Action Level</b>	<b>Limit Level</b>	<b>Action Level</b>	<b>Limit Level</b>
Noise	$L_{eq(30 \text{ min.})}$ dB(A)	0	0	0	0

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**APPENDIX I  
SITE AUDIT SUMMARY**

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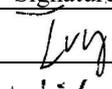
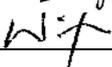
**Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas**

**ND/2019/06 – Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products**

**Weekly Site Inspection Record Summary**

Checklist Reference Number	200206
Date	6 February 2020 (Thursday)
Time	10:00-10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Water Quality</b>	
200206-R02	• Regular clear the channel at the site exit so that the wheel washing water can be directed to silt removal facilities.	D6
	<b>E. Waste / Chemical Management</b>	
200206-R01	• Provision of suitable area for temporary storage of chemical waste, if any.	E2i.
	<b>F. Landscape and Visual</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Ecology</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Permits/Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>I. Others</b>	
	• Follow-up on previous site audit conducted by previous Environmental Team (Fugro Technical Services Limited) on 23/1/2020, all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		6 February 2020
Checked by	Dr. Priscilla Choy		6 February 2020

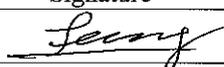
*Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas*

*ND/2019/06 – Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products*

**Weekly Site Inspection Record Summary**

Checklist Reference Number	200212
Date	12 February 2020 (Wednesday)
Time	14:00-15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Water Quality</b>	
200212-001	• Sand bag should be placed along the U-channel to prevent direct discharge into nearby watercourse from site.	D3
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Landscape and Visual</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Ecology</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Permits/Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>I. Others</b>	
	• Follow-up on previous audit section (Ref. No.:200206), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Kenneth Leung		13 February 2020
Checked by	Ms. Ivy Tam		13 February 2020

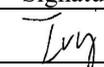
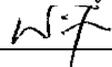
**Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas**

**ND/2019/06 – Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products**

**Weekly Site Inspection Record Summary**

Checklist Reference Number	200220
Date	20 February 2020 (Thursday)
Time	10:00-10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>C. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Water Quality</b>	
200220-O01	• Muddy water at the cut-off drain at the site entrance was observed overflow. The Contractor was reminded to review the capacity of the drain and rectify it ASAP.	D1, D2i.
	<b>E. Waste / Chemical Management</b>	
200220-R03	• Properly store the chemical waste containers at the chemical waste storage area before disposal.	E2i.
	<b>F. Landscape and Visual</b>	
200220-R02	• Properly clear the construction materials / wastes within the tree protection zone.	F1
	<b>G. Ecology</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Permits/Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>I. Others</b>	
	• Follow-up on previous audit section (Ref. No.:200212), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		20 February 2020
Checked by	Dr. Priscilla Choy		20 February 2020

*Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas*

*ND/2019/06 – Fanling North New Development Area, Phase 1: Re-provisioning of North District Temporary Wholesale Market for Agricultural Products*

**Weekly Site Inspection Record Summary**

Checklist Reference Number	200227
Date	27 February 2020 (Thursday)
Time	10:00-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Air Quality</b>	
200227-R01	• The excavated or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water.	B2
200227-R02	• Valid Non-road Mobile Machinery (NRMM) labels should be displayed on regulated machines (RO-04) and (EX-14).	B24
	<b>C. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Water Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Landscape and Visual</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Ecology</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Permits/Licences</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>I. Others</b>	
	• Follow-up on previous audit section (Ref. No.:200220), all identified environmental deficiency was observed improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ivy Tam		27 February 2020
Checked by	Dr. Priscilla Choy		27 February 2020

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**APPENDIX J  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
<b>Construction Dust Impact</b>							
S3.8	D1	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m <sup>2</sup> to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	*
S3.8	D2	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	*
S3.8	D3	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction Phase</p> <ul style="list-style-type: none"> <li>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;</li> <li>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible</li> </ul>	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<p>*</p> <p>*</p> <p>^</p> <p>*</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</p> <ul style="list-style-type: none"> <li>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period.</li> <li>• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</li> <li>• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</li> <li>• Cement or dry PFA delivered in bulk should be stored in a</li> </ul>					<p style="text-align: center;">^</p> <p style="text-align: center;">NA</p> <p style="text-align: center;">NA</p> <p style="text-align: center;">NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</p> <ul style="list-style-type: none"> <li>• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li> </ul>					<p>NA</p> <p>NA</p>
S3.8	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	^
<b>Noise Impact (Construction Phase)</b>							
S4.9	N1	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during</li> </ul>	Control construction airborne noise	Contractor	All construction sites	Construction phase	<p>^</p> <p>^</p> <p>^</p>

**App J - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**February 2020**

<b>EIA Ref.</b>	<b>EM&amp;A Log Ref</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the recommended Measures &amp; Main Concerns to address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to Implement the measures?</b>	<b>Implementation Status</b>
		the construction works; <ul style="list-style-type: none"> <li>• Mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>• Material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>					^  ^
S4.9	N2	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	^
S4.9	N3	Install movable noise barriers and full enclosure and acoustic mat, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	^
S4.9	N4	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	NA
S4.9	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	^
S4.9	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	^



EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>applications where the influent is pumped.</p> <ul style="list-style-type: none"> <li>• The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates.</li> <li>• The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction.</li> <li>• Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</li> <li>• All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.</li> <li>• Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in</li> </ul>					<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">NA</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</p> <ul style="list-style-type: none"> <li>• All open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</li> <li>• Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</li> <li>• Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.</li> <li>• All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of</li> </ul>					<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</p> <ul style="list-style-type: none"> <li>• Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</li> <li>• Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.</li> <li>• All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.</li> <li>• Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds.</li> </ul>					<p>NA</p> <p>^</p> <p>^</p> <p>^</p>
S5.7	W2	<p><u>Stream Diversion</u></p> <ul style="list-style-type: none"> <li>• In order to prevent sediment transport during riverbank</li> </ul>	Minimize water quality impact due to stream	Contractor	All streams that required diversion	Construction phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		works, deployment of silt curtain should be implemented, especially when construction works encroach or occur in close distance to water body. It is recommended to carry out all the riverbank works and diversion works within a cofferdam or diaphragm wall and the work areas on riverbed should be kept in dry condition.	diversion				
S5.7	W3	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> <li>For other inaccessible sites, site investigation is required when they are resumed and handed over to the Project Proponent to identify if contaminated groundwater is found.</li> <li>If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters.</li> <li>If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in</li> </ul>	Minimize water quality impact due to potential groundwater from contaminated area	Contractor	All identified groundwater-contaminated areas	Construction phase	<p>NA</p> <p>NA</p> <p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>the recharging wells.</p> <ul style="list-style-type: none"> <li>If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD.</li> </ul>					NA
S5.7	W4	<p><u>Sewage from Workforce</u></p> <p>Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures.</p>	Handling of site sewage	Contractor	All construction sites	Construction Phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
<b>Waste Management (Construction Waste)</b>							
S7.6	WM1	<p><u>Waste Reduction Measures</u></p> <p>Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> <li>• segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>• proper storage and site practices to minimize the potential for damage and contamination of construction materials;</li> <li>• plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;</li> <li>• sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc);</li> <li>• provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.</li> </ul>	Reduce waste generation	Contractor	All construction sites where practicable	Prior to the commencement of construction	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">NA</p> <p style="text-align: center;">^</p>
S7.6	WM2	Prepare Waste Management Plan and submit to the Engineer	Minimize waste generation	Contractor	All construction	Construction	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		for approval	during construction		sites	phase	
S7.6	WM3	<p><u>Good Site Practice</u></p> <p>The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> <li>• Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;</li> <li>• Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;</li> <li>• Provision of sufficient waste disposal points and regular collection for disposal;</li> <li>• Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;</li> <li>• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;</li> </ul>	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S7.6	WM4	<p><u>Storage of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> <li>Waste such as soil should be handled and stored well to ensure secure containment;</li> <li>Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away;</li> <li>Different locations should be designated to stockpile each material to enhance reuse;</li> </ul>	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	^  ^  ^
S7.6	WM5	<p><u>Collection and Transportation of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> <li>Remove waste in timely manner;</li> <li>Employ the trucks with cover or enclosed containers for waste transportation;</li> <li>Obtain relevant waste disposal permits from the appropriate authorities; and</li> <li>Disposal of waste should be done at licensed waste disposal facilities.</li> </ul>	Minimize waste impact from storage	Contractor	All construction sites	Construction phase	^  ^  ^  ^
S7.6	WM6	<p><u>Excavated and C&amp;D Material</u></p> <p>Wherever practicable, C&amp;D materials should be segregated from other wastes to avoid contamination and ensure acceptability at</p>	Minimize waste impacts from excavated and C&D	Contractor	All construction sites	Construction phase	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&amp;D materials:</p> <ul style="list-style-type: none"> <li>• Maintain temporary stockpiles and reuse excavated fill material for backfilling;</li> <li>• Carry out on-site sorting;</li> <li>• Deliver surplus artificial hard materials to Tuen Mun Area 38 recycling plant or its successor for recycling into subsequent useful products;</li> <li>• Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and</li> <li>• Implement a recording system for the amount of waste generated, recycled and disposed of for checking;</li> </ul> <p>Standard formwork should be used as far as practicable in order to minimize the arising of C&amp;D waste. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage.</p> <p>Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area.</p>	<p>material</p>				<p style="text-align: center;">^</p> <p style="text-align: center;">NA NA</p> <p style="text-align: center;">NA</p> <p style="text-align: center;">^</p> <p style="text-align: center;">NA</p> <p style="text-align: center;">^</p>

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S7.6	WM7	<p><u>Contaminated Soil</u></p> <p>As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.</p>	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	^
S7.6	WM8	<p><u>Chemical Waste</u></p> <p>If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	All construction sites	Construction phase	*
S7.6	WM9	<p><u>General Waste</u></p> <ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage</li> </ul>	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	NA



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		<p>Figure 11.9 should be implemented after land resumption to confirm and verify the findings of the EIA. The survey should be conducted by a professional archaeologist and prior to fieldwork commencement, the archaeologist should obtain a Licence to Excavate and Search for Antiquities from the Authority under the AM Ordinance. It should be noted that the scope of further archaeological survey is based on the current proposed alignment. Any additional works areas which have not been covered by the current archaeological impact assessment should be covered as soon as possible. Subject to the findings of the archaeological survey to be conducted after land resumption, additional mitigation measures would be designed and implemented before the commencement of construction works to mitigate the adverse impact.</p>			<p>in the areas within Areas D1-11, A3-5, A3-6, B1-1, and B1-7,</p>		
S11.6.1	CH2	<p><u>Undertaking Survey-cum-Rescue Excavation</u>                      A Survey-cum-Rescue Excavation should be conducted after land resumption and before the commencement of construction works to define the precise archaeological deposits extent and to preserve the archaeological resources by record. The excavation should be conducted by a professional archaeologist and prior to fieldwork commencement, the archaeologist should obtain a Licence to Excavate and Search for Antiquities from the Authority under the AM Ordinance.</p>	<p>To define the precise archaeological deposits extent and to preserve the archaeological resources as far as possible</p>	<p>Project Proponent/ Contractor/ Qualified Archaeologist</p>	<p>In KTN NDA, for Site 3 and In FLN NDA for Site 5.</p>	<p>After land resumption but before construction commencement of the zone</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S11.6.1	CH3	<p><u>Undertaking Preservation in-situ for Site 7</u></p> <p>Preservation in-situ of the cultivation deposits in Site 7 is proposed. If disturbance to the site by the design of the Central Park is unavoidable, further archaeological survey should be conducted after land resumption prior to the pre-construction stage to assess the feasibility to incorporate Site 7 into the design of the development plan of the proposed zone. Appropriate followup actions, including preservation of the significant archaeological deposits in-situ in the Central Park, would then be considered with the consent of AMO.</p> <p>The recommended mitigation measure of preservation in-situ with further archaeological survey should be conducted by a professional archaeologist and prior to fieldwork commencement, the archaeologist should obtain a Licence to Excavate and Search for Antiquities from the Authority under the AM Ordinance.</p>	<p>To preserve the archaeological resources as far as possible.</p>	<p>Project Proponent/ Contractor/ Qualified Archaeologist</p>	<p>Site 7 in FLN NDA</p>	<p>After land resumption prior to preconstruction stage of the proposed Central Park (Area C2-8, Zoning O)</p>	<p>NA</p>
S11.6.1	CH4	<p><u>Undertaking Induction Training</u></p> <p>Induction training should be provided to the construction Contractor before the commencement of the excavation works in Spots A, D, F to H. An induction will be conducted as part of the environmental health and safety induction programme to all site staff before they are deployed on site. The induction will</p>	<p>To preserve the archaeological resources as far as possible</p>	<p>Project Proponent/ Contractor/ Qualified Archaeologist</p>	<p>Spots A, D, F to H</p>	<p>Before the commencement of the excavation works and before site staff are deployed on site</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>include an introduction on the historical development of the Site, the possible archaeological remains that may be encountered during ground excavation works as well as the reporting procedures in case suspected archaeological remains are identified. A set of the presentation material (in the form of power point presentation) with content details will be prepared by an archaeologist and submitted to AMO for reference and record purpose. The first induction briefing will be video recorded and it will be used as induction briefing material for new site staff.</p>					
S11.6.1	CH5	<p><u>Undertaking Archaeological Impact Assessment before Construction at A1</u></p> <p>It is recommended that an Archaeological Impact Assessment to be conducted in the impacted area in Area B1-8 and B1-9 at A1 (Sheung Shui Wa Shan Site of Archaeological Interest) after land resumption and before construction when detail construction work information is available to determine the need for further archaeological follow up actions.</p>	<p>To define the precise archaeological deposits extent and to preserve the archaeological resources as far as possible</p>	<p>Project Proponent/ Contractor/ Qualified Archaeologist</p>	<p>Area B1-8 and B1-9 zoned as R4 and R3 in A1</p>	<p>After land resumption but before construction</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S11.6.1	CH6	<p><u>Undertaking Archaeological Impact Assessment before Construction within A1 but except Area B1-8 and B1-9</u></p> <p>Should there be any development work within the Sheung Shui Wa Shan Site of Archaeological Interest, it is recommended that an Archaeological Impact Assessment is required after land resumption and before construction when detail construction work information is available to determine the need for further archaeological follow up actions.</p>	<p>To define the precise archaeological deposits extent and to preserve the archaeological resources as far as possible.</p>	<p>Project Proponent/ Contractor/ Qualified Archaeologist</p>	<p>Area within A1 except Area B1-8 and B1-9 in R4 &amp;R3 zoning</p>	<p>After land resumption but before construction</p>	<p>NA</p>
S11.6.2	CH7	<p><u>Undertaking baseline condition survey and baseline vibration impact assessment</u></p> <p>In case any potential vibration impact on any nearby built heritage features are identified during the pre-construction stage of the Project, prior to commencement of construction works, a baseline condition survey and baseline vibration impact assessment should be conducted by a qualified building surveyor or a qualified structural engineer to define the vibration limit (a vibration limit at 7.5mm/s could be adopted for graded historic buildings) and to evaluate if construction vibration monitoring and structural strengthening measures are required during construction phase so as to ensure the construction performance meets with the vibration standard stated in the EIA report. The condition survey of graded historic building should be submitted to AMO for information.</p>	<p>To minimize the vibration impacts during preconstruction stage on any identified potential vibration impacted built heritage features</p>	<p>Project Proponent/ Contractor</p>	<p>G303 and G308</p>	<p>Preconstruction stage before commencement of construction works during Schedule 3 study</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S11.6.2	CH8	<p><u>Undertaking baseline condition survey and baseline vibration impact assessment</u></p> <p>In case any potential vibration impact on any nearby built heritage features are identified during the pre-construction stage of the Project, prior to commencement of construction works, a baseline condition survey and baseline vibration impact assessment should be conducted by a qualified building surveyor or a qualified structural engineer to define the vibration limit (a vibration limit at 7.5mm/s and 15mm/s could be adopted for graded historic buildings and historic buildings respectively) and to evaluate if construction vibration monitoring and structural strengthening measures are required during construction phase so as to ensure the construction performance meets with the vibration standard stated in the EIA report. The condition survey of graded historic building should be submitted to AMO for information.</p>	<p>To minimize the vibration impacts during preconstruction stage on any identified potential vibration impacted built heritage features</p>	<p>Project Proponent/ Contractor</p>	<p>KT57, FL05, FL18, and FL2</p>	<p>Preconstruction stage before commencement of construction works</p>	<p>NA</p>
S11.6.2	CH9	<p><u>Conducting Photographic and Cartographic Records Prior to Removal/Relocation of Impacted Built Heritages</u></p> <p>Prior to removal/relocation of the directly impacted historical buildings and cultural/historical landscape features, photographic and cartographic records should be conducted to preserve them by record. Liaison with and obtaining agreement from the descendants of these features will be carried out the Project</p>	<p>To preserve the directly impacted sites by record prior to their removal / relocation</p>	<p>Project Proponent/ Contractor</p>	<p>Ancillary structures of G303, HKT01, HKT02, Entrance Gate of HKT03, HKT04, KT01 to KT10, KT13,</p>	<p>Prior to Removal / Relocation of features before commencement of construction works during Schedule 3 study</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		Proponent.			KT36, KT39, KT40, KT41, KT43, KT45, KT47, KT50, KT54, KT62 to KT63, KT69, FL01, FL16, and FL35		
S11.6.2	CH10	<p><u>Conducting Photographic and Cartographic Records Prior to Removal/Relocation of Impacted Built Heritages</u></p> <p>Prior to removal/relocation of the directly impacted historical buildings and cultural/historical landscape features, photographic and cartographic records should be conducted to preserve them by record. Liaison with and obtaining agreement from the descendants of these features will be carried out by the Project Proponent.</p>	To preserve the directly impacted sites by record prior to their removal / relocation	Project Proponent/ Contractor	KT12 and KT61	Prior to Removal / Relocation of features before commencement of construction works	NA
S11.6.2	CH11	Relocation of Built Heritages Relocation of built heritages to a reasonable location nearby may be required.	To preserve the directly impacted sites by relocation	Project Proponent/ Contractor	HKT01, HKT02, Entrance Gate of HKT03	After the photographic and cartographic records and before commencement of construction works	NA

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S11.6.2	CH12	Drainage System and Access Route Design For the retained built heritage items in developable area, drainage system and access route would be designed to prevent the persevered flooding and maintain the accessibility to the built heritage.	To prevent the persevered flooding and maintain the accessibility to the built heritage	Contractor /Detailed Design consultant	The retained built heritage items	Pre-construction phase	NA
<b>Cultural Heritage (Construction Phase)</b>							
S11.6.1	CH13	<u>Inform Upon Archaeological Discovery</u> Pursuant to the Antiquities and Monuments Ordinance, the construction Contractor should inform the AMO immediately in case of discovery of antiquities or supposed antiquities in the course of excavation works in construction phase.	Special attention should be given to areas evaluated to have archaeological potential or significance.	Contractor	All soil excavation works	Immediately upon discovery during excavation works	NA
S11.6.2	CH14	<u>Watertable Monitoring</u> Since the construction works and development activities may induce change in the watertable. It is recommended the Contractor should ensure that the change of watertable induced by the construction works and development activities will not result in settlement of built heritage.	To minimize the potential impacts to the built heritage items by the change of watertable induced by the works during the Construction phase	Contractor	Within NDAs	Construction phase	NA
S11.6.2	CH15	<u>Conducting Construction Vibration Monitoring and Structural Strengthening Measures</u> Construction vibration monitoring and structural strengthening measures should be conducted during Construction phase based on the assessment result of baseline condition survey and baseline vibration impact assessment, so as to ensure the construction performance meets with the vibration standard	To minimize the potential impacts during Construction phase on any identified potential vibration impacted built heritage features	Contractor	Identified potential vibration impacted built heritage features	Construction phase, with details specified in baseline condition survey and baseline vibration impact	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		stated in the EIA report.				assessment	
<b><i>Landscape and Visual Impact (Detailed Design, Prior to Construction, Construction and Operation Phases)</i></b>							
S.12.9	LV1	<p>General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.</p> <p>With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites.</p>		Detailed design consultant/ Contractor	Throughout NDAs,	Prior to Construction, Construction & for all planting, this should be installed as the areas become available, to achieve early establishment	NA
S.12.9 MM1	LV2	<p>Minimum Topographical Change –To minimize landscape and visual impacts, the footprint and elevation of such elements should be optimized to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimize landform changes and land resumption, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate,</p>	Reduce topographical changes and minimize land resumption	Government / Detailed Design Consultant/ Contractor	Throughout NDAs, particularly for reservoirs	Prior to Construction	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		to support assimilation with the hillside setting.					
S.12.9 MM2	LV3	Detailed Design (Visual) –The footprint and massing of development components and the works area should also be kept to a practical minimum and the detailed design of development components for Construction phase should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example, natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components, including all roadwork, buildings and noise barriers. In addition, the design of structures should consider green roofs were feasible, following stated guidelines. All Noise barriers, particularly noise barriers but also any barriers proposed for ecological impact mitigation, should be kept to a practical minimum, and be of such a designed as to integrate as well as possible into the surrounding visual context and be as low	Improve visual amenity of the new buildings, NDAs in general and integrate as best possible into the surrounding landscape	Detailed Design Consultant	Throughout NDAs	Prior to Construction	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>as practical to minimize blocking views. Noise barrier design, including vertical, cantilever or curved, and noise enclosures including semi-enclosure and full enclosure, at grade and/ or elevated, should follow the guidelines stated. Construction time frame should also be considered and designs seek to keep it to a practical minimum.</p>					
S12.9 MM14.4	LV 4	<p>Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimize any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed.</p> <p>For example, for the stream at Siu Hang San Tsuen in FLN NDA, much of the stream is located underneath the viaduct for the proposed Fanling Bypass. In order to avoid impacts to the stream, the detailed final design of the viaduct should follow guidelines and ensure that no viaduct footings or other structures are placed in the stream.</p> <p>Bridges and box culverts should also be used to minimize the necessity of watercourse modification and protect the watercourses where necessary.</p>	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All watercourses, particularly the stream at Siu Hang San Tsuen that will flow under the Fanling Bypass Eastern Section	Prior to Construction and Construction Phase	NA

**Landscape and Visual (Construction)**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S.12.9 MM3	LV5	Open Space Provision - the principles adopted in the RODP planning ensure that public open space systems are incorporated. All requirements for open space areas stipulated in the planning documents for the formulation of the Preliminary Layout Plan should be adhered to.	Reprovision of open space. Enhance visual amenity of the area and improve the overall landscape character	Government Developer/ Detailed Design Consultant/ Contractor/	Onsite as stipulated in the planning documents for the formulation of the Preliminary Layout Plan	Prior to Construction and Construction Phas	NA
S.12.9 MM4	LV6	Tree Protection & Preservation – Existing trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to ETWB Technical Circular (Works) No. 29/2004. 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.  A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree	Protect and Preserve Trees	Government / Detailed Design Consultant/ Contractor	Onsite	Prior to Construction and Construction Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		protection measures for those trees to be retained					
S.12.9 MM5	LV7	<p>Tree Transplantation – Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible.</p> <p>A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.</p> <p>A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.</p>	Transplant Trees where suitable for transplantation	Government / Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA
S.12.9 MM6	LV8	Slope Landscaping – Site formation should be reduced as far as possible. Seeding of modified slopes should be done as	To avoid substantial slope cutting and fill slopes.	Government / Detailed Design	Onsite	Prior to Construction,	NA

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		<p>soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedlings and/ or shrubs should be planted where slope gradient and site conditions allow.</p> <p>In addition, landscape planting should be provided for the retaining structures associated with modified slopes where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.</p>	<p>To prevent erosion and subsequent loss of landscape resources and character.</p> <p>To ensure man-made slopes are as visually amenable as possible.</p>	<p>Consultant/ Contractor</p>		<p>Construction Phase &amp; Maintenance in Operation Phase</p>	
S.12.9 MM7	LV9	<p>Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006.</p> <p>Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots.</p> <p>Compensatory planting for shrubs should be considered in suitable locations. Native species such as <i>Melastoma</i></p>	<p>Compensate for trees and shrubs lost due to the Project.</p>	<p>Government / Detailed Design Consultant/ Contractor</p>	<p>Onsite where possible. Otherwise consider offsite locations</p>	<p>Prior to Construction, Construction Phase &amp; Maintenance in Operation Phase</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p><i>malabathricum, Diospyros vaccinioides, Gardenia jasminoides, Ixora chinensis, Ligustrum sinense, Litsea rotundifolia, Melastoma dodecandrum, Atalantia buxifolia, Rhodomyrtus tomentosa, Rhapsiolepis indica, and Rhododendron simsii</i> are suggested.</p>					
S.12.9 MM8	LV10	<p>Woodland Compensatory Planting –Specific Woodland compensatory planting is proposed for any areas of quality woodland that are unavoidably affected by the Project. The location and design of the woodland compensatory planting will principally be within habitats of lower value such as upland grassland. The proposed locations are identified, for example, on the foothills of Tai Shek Mo, and on the higher ground of Fung Kong Shan in KTN NDA; along Fanling Bypass; and a small area in the northern FLN NDA.</p> <p>The intention of the compensatory woodland will be to recreate areas of quality woodland, not necessarily to compensate for loss of trees on a like for like basis (See E18 &amp; E27 also).</p> <p>Native tree species are suggested for planting in the</p>					NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>appropriate locations, including <i>Ailanthus fordii</i>, <i>Bischofia javanica</i>, <i>Castanopsis fissa</i>, <i>Celtis sinensis</i>, <i>Cinnamomum burmannii</i>, <i>Cinnamomum camphora</i>, <i>Xanthoxylum avicennae</i>, <i>Hibiscus tiliaceus</i>, <i>Liquidambar formosana</i>, <i>Sapium discolor</i>, <i>Schefflera heptaphylla</i> and <i>Ilex rotunda</i>. In addition some understory vegetation may be planted including shrubs such as <i>Atalantia buxifolia</i>, <i>Diospyros vaccinioides</i>, <i>Gardenia jasminoides</i>, <i>Ixora chinensis</i>, <i>Ligustrum sinense</i>, <i>Litsea rotundifolia</i>, <i>Melastoma malabathricum</i>, <i>Melastoma dodecandrum</i>, <i>Rhodomyrtus tomentosa</i>, <i>Rhaphiolepis indica</i>, and <i>Rhododendron simsii</i>.</p> <p>The area allocated for compensatory woodland planting allows in part for the fact that it will take some time for the compensatory planting to achieve the landscape and ecological function and value of the area to be lost. In addition, it allows for the fact that not all of the areas identified for planting will prove to be plantable, by virtue of topography and ground conditions and, especially, because though the areas identified are largely grassland it is inevitable that these areas will already support some patches of trees and shrubs which would be inappropriate for further planting.</p>					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S.12.9 MM9	LV11	Vertical Greening – Planting of climbers to grow up vertical surfaces were appropriate (e.g. building edges, piers).	Soften hard surfaces and facilities	Government / Developer/ Detailed Design Consultant/ Contractor	On appropriate structures	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA
S.12.9 MM10	LV12	Green Roof – Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels. Provide greening.	Government / Developer/ Detailed Design Consultant/ Contractor	On appropriate buildings	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S.12.9 MM11	LV13	Screen Planting – Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Government / Detailed Design Consultant/ Contractor	Along roads, around suitable built structures, or around VSRs to contain their view out to the NDA structures.	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA
S.12.9 MM12	LV14	Road Greening –For viaducts, soft landscaping should be provided to soften the hard, straight edges (for climbers used to cover the vertical, hard surfaces of the piers – see MM9 Vertical Greening) and shade tolerant plants should be planted, where light is sufficient, to improve aesthetic value of areas under viaducts. Both at grade planting and use of elevated planters should be considered for the soft landscaping of viaducts, taking into account the preference to minimize the overall viaduct bulk and integrate architectural forms and textural finishes which improve aesthetics.  For at grade roads, planting should be considered along central	To soften the hard, straight edges and provide greening along roads.	Government / Developer/ Detailed Design Consultant/ Contractor	On viaducts or along roads	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		dividers and on road islands e.g. in the middle of roundabouts. (Roadside planting i.e. at the road edge and not in the central divider or road island, is considered part of Screen Planting)					
S.12.9 MM13 & EIA Annex 13	LV15	Marsh/Wetland Compensation –The proposed Long Valley Nature Park (LVNP) will be designed and implemented to enhance on- wetland areas within the LVNP. (See E4,E15 and E25 also) Also see LV16, LV17, and LV18 as wetland planting should be provided along the embankments and beds of modified/ reprovisioned watercourses.	Compensate for Marsh/ Wetland lost due to the Project.	Project Proponent/ Detailed Design Consultant/ Contractor/ Maintenance Authority	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S.12.9 MM14.1	LV16	<p>Reprovision of Natural Stream – Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/ivers from adverse impacts arising from construction works) and appropriate construction methods should be used.</p> <p>Two short stretches of the Ma Tso Lung Stream will be affected by Project in the KTN NDA; by the LMC Eastern Connection Road on the western border of Site F1-3 and further upstream by Site E-2.</p> <p>At both these locations, the stream will be reprovioned and maintain the flow between unaffected sections of the stream. The reprovioned stream will be provided with a natural bed and banks, as well as having an area of marsh/ pool next to it and trees and shrubs further from the banks. (See E2, E14 and E24 also)</p>	<p>Achieve a natural stream, similar to existing, including wetland planting provision for embankments</p>	<p>Government / Developer/ Detailed Design Consultant/ Contractor</p>	<p>Streams and channelized watercourses e.g. a Ma Tso Lung and Siu Han San Tsuen</p>	<p>Prior to Construction, Construction Phase &amp; Maintenance in Operation Phase</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S12.9 MM14.2	LV17	<p>Stream Buffer Planting –Providing a minimum 10 m buffer with planting (where there is a general presumption against any development taking place) along streams where they flow close to developments, confers a degree of protection to the stream course and its associated vegetation.</p> <p>For the stream at Ma Tso Lung in KTN NDA, the middle and upper sections will be designated as Green Belt zone where there is a general presumption against development as buffer to the stream.</p> <p>For the stream at Siu Hang San Tsuen in FLN NDA, within the NDA boundary much of the stream would be located underneath the viaduct for the proposed Fanling Bypass. To the south of the viaduct the stream flows through an Open Space area D1-3. In this Open Space zone a 10m buffer is proposed in which natural vegetation will be retained and enhanced and human activities will be limited in order to avoid direct impacts to the stream bed and to minimize potential indirect impacts to the stream and riparian corridor. (See E3 also)</p>	Protect natural streams	Government / Developer/ Detailed Design Consultant/ Contractor	Streams and channelized watercourses e.g. a Ma Tso Lung and Siu Han San Tsuen	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S12.9 MM14.3	LV18	<p>Enhancement Planting along Embankment - For channelized watercourses, if these are modified, the Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design, should be considered and appropriate mitigation measures included ensuring the new watercourses match the existing as far as possible. Measures can include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion). All measures must also ensure any necessary maintenance work can be carried out and that the channel meets all its requirements for water flow, etc.</p> <p>For example, a stretch of the Ma Wat River Channel in the south of FLN NDA will have to be diverted for the construction of the Fanling Bypass Eastern Section. This measure will be particularly relevant in this area.</p>	<p>Minimize the necessity of watercourse modification, protect watercourses where possible and enhance channelized watercourses</p>	<p>Government / Developer/ Detailed Design Consultant/ Contractor</p>	<p>Channelized watercourse, particularly the Ma Wat River Channel Diversion</p>	<p>Prior to Construction, Construction Phase &amp; Maintenance in Operation Phase</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S12.9 MM15	LV19	<p>Pond Replacement –Principles adopted in the design of the NDAs ensure that they incorporate ponds within the RODPs.</p> <p>All requirements for ponds stipulated in the planning documents for the formulation of the Preliminary Layout Plan (e.g. at Fung Kong Shan Park in E1-7 of KNT ND) should be adhered to.</p>	Reprovision for ponds lost due to the Project.	Project Proponent/ Detailed Design Consultant/ Contractor/ Maintenance Authority	E1-7 and C1-9 (LVNP) in KNT NDA and generally throughout NDA	Prior to Construction, Construction Phase Maintenance in Operation Phase	NA
S.12.9 MM16	LV20	<p>Screen Hoarding –Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non- reflective, recessive colours be used.</p> <p>Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).</p>	To screen undesirable views of the works site.	Contractor	Throughout NDAs	Construction Phase	NA
S.12.9 MM17	LV21	<p>Light Control – Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the Construction phase.</p> <p>Street and night time lighting shall also be controlled to minimize</p>	To minimize glare impact to adjacent VSRs	Government / Developer/ Contractor	Throughout NDAs	Construction and Operation Phases	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		glare impact to adjacent VSRs during the operation phase.					
<b>Ecology (Prior to Construction Phase or throughout the project)</b>							
S. 13.9	E1	Egretry Habitat Creation & Management Plan (EHCMP) and Woodland Planting and Management Plan (WPMP)	Compensate for loss of Man Kam To Road egretry. Compensate for loss of secondary woodland and hillside plantation of ecological significance.	Project Proponent/ Detailed Design Consultant (EHCMP and WPMP).	FLN area A1-7 (egretry compensation). KTN areas E1-8 and G1-3 (woodland compensation).	Detailed design phase	NA

**App J - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES**

**February 2020**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S. 13.9	E2	<p>Detailed design of development along lower reaches of Ma Tso Lung Stream and Ma Tso Lung San Tsuen Stream in OU zones F1-2 and F1-3 and detailed design of LMC Loop Eastern Connection Road with restoration of diverted stream and riparian corridor, permanent barrier and underpass on the at-grade section</p> <p>Compensation for the loss of seasonally wet grassland at Ma Tso Lung by habitat restoration and enhancement along diverted section of Ma Tso Lung Stream</p>	<p>Minimize impacts on Ma Tso Lung Stream and Ma Tso Lung San Tsuen Stream and riparian corridor of importance to species of conservation significance.</p>	<p>Project Proponent/ Detailed Design Consultant. (design of Ma Tso Lung Stream diversion and buffer zone habitat restoration measures)</p>	<p>KTN areas F1-2 and F1-3 and LMC Loop Eastern Connection Road.</p>	<p>Detailed design and construction phases.</p>	<p>NA</p>
S13.9	E3	<p>Detailed design, implementation and management of Siu Hang San Tsuen Stream to have 10m wide vegetated buffer in Open Space zone D1-3, Fanling Bypass to cross stream on viaduct.</p>	<p>Minimize impacts on Siu Hang San Tsuen Stream and stream fauna.</p>	<p>PlanD, Project Proponent/ Detailed Design Consultant/ Contractor/ Maintenance Authority</p>	<p>FLN area D1-3.</p>	<p>Detailed design, construction and operation phases.</p>	<p>NA</p>
S.13.9	E4	<p>Long Valley Nature Park (LVNP) designation, design and implementation.</p> <p>Enhancement of non-wetland habitats in LVNP. Planning for the</p>	<p>Compensate for wetland loss arising from the project and protection of Long Valley from adverse ecological impacts including</p>	<p>Project Proponent/ Detailed Design Consultant (Long Valley</p>	<p>Long Valley KTN area C1-9 and any suitable areas to be identified during the</p>	<p>Detailed design phase</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		advanced provision of alternative foraging habitat along main river channels for large waterbirds.	provision of additional/alternative habitat for large waterbirds using Ng Tung, Sheung Yue and Shek Sheung River channels.	Nature Park Habitat Creation & Management Plan)	planning stage		
S13.9	E5	Stringent planning control requirements in Long Valley north and west of Sheung Yue River, including Ho Sheung Heung egretty.	<p>Protect these wetland areas from indirect impacts to habitats and fauna especially breeding ardeids foraging in these areas and utilizing flight-lines from Ho Sheung Heung egretty.</p> <p>Avoid habitat loss and disturbance to fauna of conservation significance, especially nesting ardeids</p> <p>Maintenance of ecological linkages with Deep Bay ecosystem and avoidance of severance of these linkages, especially for waterbirds</p>	PlanD.	KTN areas C2-1 and C2-2 , Ho Sheung Heung egretty and areas north of Long Valley along the Ng Tung River to the Shenzhen River	Detailed design phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S13.9	E6	Planning for creation of Green Corridors along the Sheung Yue, Ng Tung and Shek Sheung Rivers, retention and provision of screen plantings where feasible; and detailed design of Open Space areas and development areas along river corridors.	Minimize disturbance to large waterbirds using Ng Tung, Sheung Yue and Shek Sheung River channels.  Maintain ecological linkages within NDA Project Area and between Project Area and Deep Bay ecosystem, especially for Long Valley and waterbirds.	Project Proponent/ Detailed Design Consultant/ Contractor/ Maintenance Authority	Area along Ng Tung, Sheung Yue and Shek Sheung River	Detailed design, construction and operational phases.	NA
S13.9	E7	Building setback and mounding in locations near Long Valley.  KTN area B3-12 (30m setback from road D3) and KTN area C1-1 (15m setback and mounding along northern and northeastern boundaries).	Minimization of disturbance impacts to fauna using Long Valley.	PlanD	KTN area B3-12 (30m setback from road D3) and KTN area C1-1 (15m setback and mounding along northern and northeastern boundaries).	Detailed design phase	NA
S13.9	E8	Preparation and implementation of Guidelines for building design measures to minimize mortality and light and glare impacts to fauna. Guidelines to address the following measures:	Minimize mortality and disturbance impacts on fauna, especially mammals	PlanD/ Project Proponent/ Developer/	Near Long Valley	Detailed design phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project.</p> <p>Measures to include the following:</p> <ul style="list-style-type: none"> <li>• Fritting, or the placement of ceramic lines or dots on glass, which creates a visual barrier to birds and reduces air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when the frits are applied on the outside surface. Frosted glass has similar effects;</li> <li>• Angled glass to be used only for smaller panes in buildings with a limited amount of glass;</li> <li>• The use of glass that reflects UV light (primarily visible to birds, but not to humans) to reduce collisions;</li> <li>• Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability;</li> <li>• Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK</li> </ul>	<p>and birds.</p>	<p>Detailed Design Consultant</p>			

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
	E9	Not used					NA
S13.8	E10	Review development footprint and layout of proposed developments in KTN areas D1-11a and G1-5 to avoid/minimize direct and indirect impacts on secondary woodland at Ho Sheung Heung and shrubland at Crest Hill.	Minimize loss of secondary woodland and shrubland of ecological value.	Project Proponent/Detail ed Design Consultant	KTN areas D1-11a and G1-5 to avoid/minimize direct and indirect impacts on secondary woodland at Ho Sheung Heung and Crest Hill	Detailed design phase	NA
S13.9	E11	No construction during ardeid breeding season (1 March to 31 July) along Sheung Yue River north or east of KTN D1-5 and east of D1-9 and C2-3, construction hours restricted to 09.00 to 17.30 during 1 March to 31 July on new pedestrian bridge over the Sheung Yue River, new pedestrian bridge over the tidal section of the Ng Tung River and existing bridge between KTN areas C2-2 and C1-8.  Review Design and construction methods for all bridges especially those on the Sheung Yue and tidal Ng Tung Rivers and adopt methods which minimize impacts on Long Valley and the rivers, and disturbance and fragmentation impacts on fauna.	Minimize disturbance impacts (including cumulative impacts with cycle track project) to flightlines of breeding ardeids	Project Proponent/Detail ed Design Consultant.Contr actor	Along and within Sheung Yue and Ng Tung Rivers, Long Valley, Long Valley and watercourse upstream areas including KTN area B3-12	Detailed design/ construction phase.	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>No overlap in construction of bridges over main river channels. Measures to ensure no hydrological disruption to Long Valley Watercourse and water supply to Long Valley to be designed at the detailed design stage for the rechannelisation of the Long Valley Watercourse and the development of areas through which it passes, including KTN area B3-12. Contingency plan to address any disruption to be included in LVNP HCMP. Avoid removal or interference with screen planting undertaken under the Construction of Cycle Tracks and Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung project.</p>					
<b>Ecology (Construction Phase)</b>							
S13.9	E12	<p>Compensatory egret habitat provision and establishment.</p> <p>Review condition and location of egretries before commencement of works. Formulate and implement additional mitigation measures as appropriate.</p> <p>Phasing of works near and within Man Kam To Road Egret habitat outside breeding season</p>	<p>Compensate for loss of Man Kam To Road egret habitat.</p> <p>Avoid mortality of breeding egrets</p>	<p>Project Proponent/ Detailed Design Consultant/ Contractor</p>	<p>FLN area A1-7 500m from Man Kam To Road Egret.</p>	<p>Construction phase.</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S13.9	E13	<p>Review design and construction methods for bridges, especially those on the Sheung Yue and tidal Ng Tung Rivers, and adopt measures which minimize impacts on rivers and disturbance and fragmentation impacts on fauna.</p> <p>No construction during ardeid breeding season (1 March to 31 July) along Sheung Yue River north and east of KTN area D1-5 and east of D1-9 and C2-3 and restriction of working hours on new pedestrian bridges over the Sheung Yue River and tidal Ng Tung River to 09.00 to 17.30 during the ardeid breeding season (1 March to 31 July)</p> <p>Provision of alternative foraging habitat along main river channels for large waterbirds.</p>	Minimize impacts on rivers and disturbance and fragmentation impacts on fauna	Project Proponent/ Detailed Design Consultant/ Contractor	Along and within the Sheung Yue, Ng Tung and Shek Sheung Rivers	Detailed design and construction phases..	NA
S13.9	E14	Buffer zone of 15-30m as appropriate on both sides (not less than 45m total width) of Ma Tso Lung Stream north of the point where it is crossed by the LMC Loop Eastern Connection Road, and Ma Tso Lung Stream diversion during construction of the LMC Loop Eastern Connection Road; development along lower reaches of Ma Tso Lung Stream and Ma Tso Lung San Tsuen Stream in OU zones in KTN areas F1-2 and F1-3 to be set back beyond buffer.	Minimize impacts direct and indirect impacts of habitat loss, disturbance, pollution and fragmentation on Ma Tso Lung Stream and marsh and riparian corridor of importance to species of conservation significance.	PlanD/ Project Proponent/ Developer/ Detailed Design Consultant/ Contractor. (Design of Ma Tso Lung Stream diversion	KTN areas H1-1, F12 and F1-3 and Lok Ma Chau Loop Eastern Connection Road.	Detailed design and construction phases.	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>Construction and maintenance of permanent 1.2m high solid faunal barrier at all at-grade sections of LMC Loop eastern connection Road north of junction with road D4 within 15-30m as appropriate of Ma Tso Lung Stream buffer and construction of faunal underpass beneath road.</p> <p>Compensation for the loss of seasonally wet grassland at Ma Tso Lung by habitat restoration and enhancement along diverted section of Ma Tso Lung Stream.</p>		and buffer zone habitat restoration measures)			
S.13.9	E15	Creation and enhancement of proposed Long Valley Nature Park and creation and enhancement of wetland and buffer planting within LVNP.	Compensate for wetland loss arising from the project	Project Proponent/ Contractor (LVNP Detailed Habitat Creation & Management Plan)	Long Valley, (KTN area C1-9).	Construction phase.	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S13.9	E16	<p>Creation of Green Corridors along the Sheung Yue, Ng Tung and Shek Sheung Rivers, retention and provision of screen plantings where feasible; provision of Open Space areas and development areas along river corridors;</p> <p>Design and erection of 2m high solid dull green site barrier fence between river channel and any active works area along or adjacent to Ng Tung, Sheung Yue and Shek Sheung Rivers.</p> <p>Ng Tung, Sheung Yue and Shek Sheung Rivers screen planting.</p>	<p>Minimize disturbance to waterbirds using Ng Tung, Sheung Yue and Shek Sheung River channels.</p>	<p>Detailed Design Consultant/ Contractor</p>	<p>Ng Tung, Sheung Yue and Shek Sheung Rivers</p>	<p>Detailed design and Construction phases.</p>	<p>NA</p>
S13.9	E17	<p>Design and erection of 2m high solid dull green site barrier fence between active works areas and all areas/habitats of ecological importance on edge of development areas, including along any roads adjacent to or penetrating into areas/habitats of ecological importance.</p> <p>Erection of a 2m high dull green site barrier fence at the edge of the works area or 30m from Ma Tso Lung Stream and tributaries, whichever distance is the greater.</p>	<p>Minimize dust, disturbance, mortality and other adverse ecological impacts on habitats, flora and fauna. Measures to minimize flight-line impacts to birds, especially breeding ardeids.</p>	<p>Contractor</p>	<p>Interface between areas/habitats/ fauna/ flora of ecological importance (e.g. KTN areas B1-3, C1-5, C1- 6, C1-9, C2-2, C2-4, C2-5, D1-8, E1-8, G1- 3, H1-1, Ma Tso Lung Stream and tributaries;</p>	<p>Construction phase.</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
					FLN areas A1-3, A1-7 and A1-9) and works areas; and around any works areas north of the Fanling Bypass and north of the Ng Tung River west of the western terminus of the Fanling Bypass. Riparian corridor of Ma Tso Lung Stream and tributaries.		
S13.9	E18	Compensatory woodland planting, management and maintenance.	Compensate for loss of secondary woodland and hillside plantation of ecological significance.	Project Proponent/ Contractor	KTN areas E1-8 and G1-3.	Construction phase.	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S13.9	E19	<p>Use opaque, non-transparent, non-reflective noise barriers for all construction sites.</p> <p>Unnecessary lighting should be avoided.</p>	<p>Minimize mortality impacts on birds.</p>	<p>Contractor</p>	<p>All construction sites</p>	<p>Construction phase.</p>	<p>NA</p>
S13.9	E20	<p>Pre-site clearance check for presence of flora or fauna of conservation significance and bat roosts. If any are found, measures should be proposed and implemented to avoid, minimize and/or compensate for impacts; including adjustments to design, timing of works, transplantation and translocation. Seek agreement of relevant authorities including AFCD in respect of proposed measures, then implement.</p> <p>Pre-site clearance check on all construction sites and pre – works commencement check on watercourses to be physically and/or hydrologically impacted by construction activities for presence of protected plant species/specimens of conservation significance. If any are found consider adjustments to avoid, minimize and/or compensate for impacts; including adjustments to design, timing of works,</p> <p>Pre-site clearance of construction sites in Crest Hill area, KTN areas D1-7, D1-11 and G1-5 (where Eurasian Hobby was</p>	<p>Minimize impacts to flora and fauna of conservation significance. Minimize impacts to protected fauna and flora species. Formulate and implement mitigation measures to avoid, minimize and/or compensate for impacts; including adjustments to design, timing of works, transplantation and translocation.</p>	<p>Government/ Developer/ Contractor/ Ecologist</p>	<p>All construction sites.</p>	<p>Prior to clearance of vegetation and structures.</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>recorded) and on Cheung Po Tau, FLN area A3-1 (where Grey Nightjar was recorded) for presence of any breeding birds/breeding sites. If any are found consider adjustments to avoid, minimize and/or compensate for impacts; including adjustments to design, timing of works, transplantation and translocation. Seek agreement of relevant authorities including AFCD in respect of proposed measures, then implement.</p> <p>Pre-site clearance check on all construction sites for presence of Chinese Bullfrog, translocation to suitable areas including LVNP.</p>					
S13.9	E21	<p>Pre-works commencement check on watercourses to be physically and/or hydrologically impacted by construction activities for presence of flora or fauna of conservation significance and bat roosts. If any are found consider adjustments to avoid, minimize and/or compensate for impacts; including adjustments to design, timing of works, transplantation and translocation. Seek agreement of relevant authorities including AFCD in respect of proposed measures, then implement.</p> <p>Pre-site clearance check on all construction sites for presence of reptile species of conservation significance, capture and translocate to receptor site; review translocation options in respect to species in Ma Tso Lung area and determine whether</p>	<p>Minimize impacts to flora and fauna of conservation significance. Minimize impacts to protected fauna and flora species. Consider and implement adjustments to avoid, minimize or compensate for impacts; including adjustments to design, timing of works, transplantation and translocation</p>	<p>Government/ Developer/ Contractor/ Ecologist</p>	<p>All construction sites.</p>	<p>Prior to clearance of vegetation and structures.</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>release locally or elsewhere is appropriate. Seek agreement of relevant authorities including AFCD in respect of proposed measures then implement</p> <p>Pre-works commencement check on watercourses to be physically and/or hydrologically impacted by construction activities for presence of Small Snakehead and <i>Sommaniathelphusa zanklon</i>. Capture any <i>Sommaniathelphusa zanklon</i> found and translocate to Ma Tso Lung Stream/ other suitable areas including LVNP</p>					
S13.9	E22	Prevention of dust, run-off and pollutants impacting Deep Bay catchment area and areas of ecological importance.	Avoid increase to pollution entering ecologically sensitive Deep Bay ecosystem.	Contractor	All construction sites.	Construction	NA
<b>Specific Mitigation Measures for Designated Projects</b>							
<b>DP12-Reprovision of temporary wholesale market in FLN NDA</b>							
<b>Landscape and Visual (Detailed Design, Prior to Construction, Construction and Operational Phases)</b>							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S.12.D9	LV1-DP12	<p>General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.</p> <p>With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites.</p>		Detailed design consultant/ Contractor	Throughout NDAs,	Prior to Construction, Construction & for all planting, this should be installed as soon as the areas become available, to achieve early establishment	NA
S.12.D9 MM1	LV2-DP12	<p>Minimum Topographical Change –To minimize landscape and visual impacts, the footprint and elevation of such elements should be optimized to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain.</p> <p>Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimize landform changes and land resumption, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside</p>	Reduce topographical changes and minimize land resumption	Government / Detailed Design Consultant/ Contractor	Throughout NDAs, particularly for reservoirs	Prior to Construction	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		setting.					
S.12.D9 MM2	LV3- DP12	<p>Detailed Design (Visual) –The footprint and massing of development components and the works area should also be kept to a practical minimum and the detailed design of development components for Construction phase should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example, natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components, including all roadwork, buildings and noise barriers. In addition, the design of structures should consider green roofs were feasible, following stated guidelines.</p> <p>All Noise barriers, particularly noise barriers but also any barriers proposed for ecological impact mitigation, should be kept to a</p>	<p>Improve visual amenity of the new buildings, NDAs in general and integrate as best possible into the surrounding landscape</p>	<p>Detailed Design Consultant</p>	<p>Throughout NDAs</p>	<p>Prior to Construction</p>	<p>NA</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>practical minimum, and be of such a designed as to integrate as well as possible into the surrounding visual context and be as low as practical to minimize blocking views. Noise barrier design, including vertical, cantilever or curved, and noise enclosures including semi-enclosure and full enclosure, at grade and/ or elevated, should follow the guidelines stated.</p> <p>Construction time frame should also be considered and designs seek to keep it to a practical minimum.</p>					
S.12.D9 MM4	LV4- DP12	<p>Tree Protection &amp; Preservation – Existing trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to ETWB Technical Circular (Works) No. 29/2004. 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.</p> <p>A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey</p>	Protect and Preserve Trees	Government / Detailed Design Consultant/ Contractor	Onsite	Prior to Construction and Construction Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.					
S.12.D9 MM5	LV5- DP12	<p>Tree Transplantation – Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.</p> <p>A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.</p>	Transplant Trees where suitable for transplantation	Government / Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA
S.12.D9	LV6-	Slope Landscaping – Site formation should be reduced as far as	To avoid substantial slope	Government /	Onsite	Prior to	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
MM6	DP12	<p>possible. Seeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedlings and/ or shrubs should be planted where slope gradient and site conditions allow.</p> <p>In addition, landscape planting should be provided for the retaining structures associated with modified slopes where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.</p>	<p>cutting and fill slopes.</p> <p>To prevent erosion and subsequent loss of landscape resources and character.</p> <p>To ensure man-made slopes are as visually amenable as possible.</p>	Detailed Design Consultant/ Contractor		Construction, Construction Phase & Maintenance in Operation Phase	
S.12.D9 MM7	LV7- DP12	<p>Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006.</p> <p>Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots.</p> <p>Compensatory planting for shrubs should be considered in</p>	Compensate for trees and shrubs lost due to the Project.	Government / Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		suitable locations. Native species such as <i>Melastoma malabathricum</i> , <i>Diospyros vaccinioides</i> , <i>Gardenia jasminoides</i> , <i>Ixora chinensis</i> , <i>Ligustrum sinense</i> , <i>Litsea rotundifolia</i> , <i>Melastoma dodecandrum</i> , <i>Atalantia buxifolia</i> , <i>Rhodomyrtus tomentosa</i> , <i>Rhaphiolepis indica</i> , and <i>Rhododendron simsii</i> are suggested.					
S.12.D9 MM11	LV8- DP12	Screen Planting – Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Government / Detailed Design Consultant/ Contractor	Along roads, around suitable built structures, or around VSRs to contain their view out to the NDA structures.	Prior to Construction, Construction Phase & Maintenance in Operation Phase	NA
<b>Landscape and Visual (Construction)</b>							

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S.12.D9 MM16	LV9- DP12	<p>Screen Hoarding –Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, nonreflective, recessive colours be used.</p> <p>Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).</p>	To screen undesirable views of the works site.	Contractor	Throughout NDAs	Construction Phase	NA
S.12.D9 MM17	LV10- DP12	<p>Light Control – Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the Construction phase.</p> <p>Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase.</p>	To minimize glare impact to adjacent VSRs	Government / Contractor	Throughout NDAs	Construction and Operation Phases	NA

- Implementation status:**
- ^ Mitigation measure was fully implemented
  - \* Observation/reminder was made during site audit but improved/rectified by the contractor
  - # Observation/reminder was made during site audit but not yet improved/rectified by the contractor
  - X Non-compliance of mitigation measure
  - Non-compliance but rectified by the contractor
- N/A Not Applicable at this stage as no such site activities were conducted in the reporting period

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**APPENDIX K  
WASTE GENERATION IN THE  
REPORTING MONTH**

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Monthly Summary Waste Flow Table  
(P5 Clauses 1.101 & 1.102)

Name of Department: CEDD

Contract No.:ND/2019/06

Monthly Summary Waste Flow Table for 2019 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in the other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastic (see Note 3)	Chemical Waste	Others, e.g. general refuse
	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000kg	in '000kg	in '000kg	in '000kg	in '000m <sup>3</sup>
Jan											
Feb											
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov	0	0	0	0	0.927	0	0	0	0	0	0.008
Dec	0	0	0	0	0.428	0	0	0	0	0	0.071
Total	0	0	0	0	1.355	0	0	0	0	0	0.079

Monthly Summary Waste Flow Table for 2020 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in the other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastic (see Note 3)	Chemical Waste	Others, e.g. general refuse
	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000m <sup>3</sup>	in '000kg	in '000kg	in '000kg	in '000kg	in '000m <sup>3</sup>
Jan	0	0	0	0	1.558	0	0	0	0	0	0.038
Feb	0	0	0	0	0.548	0	0	0	0	0	0.011
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	0.0	0.0	0.0	0.0	2.105	0.0	0.0	0.0	0.0	0.0	0.048

- Notes: (1) The performance targets are given in P5 Clause 1.102(14).  
 (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.  
 (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material  
 \*(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the works, together with a breakdown of the nature where the amount of C&D materials expected to be generated from the works is equal to or exceeding 50,000m<sup>3</sup>. [Delete Note (4) and the table above on the forecast, where inapplicable].

Note:  $volume(m^3) = \frac{weight(kg)}{density(kg/m^3)}$   
 density of inert materials: 2000kg/m<sup>3</sup>  
 density of general refuse: 1000kg/m<sup>3</sup>

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**APPENDIX L  
COMPLAINT LOG**

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**Appendix L - Complaint Log**

<b>Log Ref.</b>	<b>Location</b>	<b>Received Date</b>	<b>Details of Complaint</b>	<b>Investigation/ Mitigation Action</b>	<b>Status</b>
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**APPENDIX M  
SUMMARY OF SUCCESSFUL  
PROSECUTION**

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**Appendix M - Summary of Successful Prosecution**

<b>Date of Successful Prosecution</b>	<b>Details of the Successful Prosecution</b>	<b>Status</b>	<b>Follow Up</b>
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