



Our Ref. : TEEM/334/19/L/112/JT

Date : 16 July 2019

By Hand

Environmental Protection Department
Environmental Assessment Division
Metro Assessment Group, Kowloon Section (2)
27/F Southorn Centre, 130 Hennessy Road
Wan Chai, Hong Kong

Attn: Mr. Tse Kiu Chung

Dear Sir,

Contract No. SS D505
Environmental Permit No. EP-454/2013
Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-Vehicle
Depot at Yen Ming Road, West Kowloon Reclamation Area
Submission of Annual Environmental Impact Monitoring Report

We are writing, on behalf of Environmental Permit Holder, Food and Environmental Hygiene Department, to provide four hard copies and one electronic copy of Annual Environmental Impact Monitoring Report for your record in accordance with Section 8.3.5 to 8.3.7 of Environmental Monitoring and Audit Manual for EP-454/2013.

Should you have any questions, please do not hesitate to contact the undersigned at (852) 3610 8777 or our Ir Nelson Tam at (852) 3610 8701. Thank you.

Yours faithfully,

For and on behalf of
Telemax Environmental and Energy Management Limited



Ir Eagle MO
Managing Director

EM / NT / JT / WW

Encl.

- cc. ArchSD – Mr. Sing-hin SAT, Saadullah / Mr. WAN Koon Piu, Dick (by hand)
FEHD – Ms. May NG (by hand)
PTA – Ms. Clara PANG / Mr. Jess YEUNG (by email)
AEC – Ms. Grace KWOK / Mr. HO Tin Kit (by email)
CRBC – Mr. Vincent CHUNG / Mr. FU Kwok Kwan (by email)

Allied Environmental Consultants Limited

Acousticians & Environmental Engineers

19/F., Kwan Chart Tower, 6 Tonnochy Road, Wan Chai, Hong Kong
Tel.: (852) 2815 7028 Fax: (852) 2815 5399 Email: info@aechk.com



Our Ref: 1330/18-0022

16 July 2019

By Email

**Food and Environmental Hygiene Department
Planning & Development Section**

Room 101,
1/F, New Wan Chai Market
258 Queen's Road East, Wan Chai,
Hong Kong

Attn: Mr. Vincent TAM

Dear Madam,

**Contract No. SS D505
Environmental Permit No. EP-454/2013
Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-Vehicle
Depot at Yen Ming Road, West Kowloon Reclamation Area
Independent Environmental Checker for Construction Phase
Condition 3.4 – Submission of Annual EM&A Report for 2018 (Issue 3)**

Further to the receipt from Environmental Team (ET) of the captioned Annual EM&A Report for 2018 on 15th and 16th July 2019 via email, pursuant to Condition 3.4 of Environmental Permit, I hereby verify the captioned report (Issue 3).

Yours faithfully,
For ALLIED ENVIRONMENTAL CONSULTANTS LIMITED

Grace Kwok
Independent Environmental Checker
GK/cwh

c.c.:		
FEHD	Ms. May NG	Email
ArchSD	Mr. Alan NIP	Email
PTA	Ms. Clara PANG / Mr. Jim HUNG	Email
TEEM (ET Leader)	Mr. Nelson TAM	Email
CRBC (Main Contractor)	Mr. Vincent CHUNG, Project Manager / Mr. KK FU, Site Agent	Email



Telemax Environmental and Energy Management Limited

Unit 9-10, 16/F., Shatin Galleria, No. 18-24 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong
Tel.: (852) 3563 7003 Fax: (852) 3563 7018 www.telemaxeem.com

Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area

Annual Environmental Monitoring and Audit Review Report 2018

Prepared by:

Telemax Environmental and Energy Management Limited



COMMERCIAL-IN-CONFIDENCE





Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area

Annual Environmental Monitoring and Audit

Review Report 2018

Verified by : _____

A handwritten signature in black ink, appearing to read 'Grace Kwok', is written over a horizontal line.

Grace Kwok

Position: Independent Environmental Checker

Date: _____ 16th July 2019





Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area

Annual Environmental Monitoring and Audit

Review Report 2018

Prepared by:

Telex Environmental and Energy Management Limited

COMMERCIAL-IN-CONFIDENCE

Certified by:

A handwritten signature in black ink, appearing to read 'Nelson Tam', is written over a horizontal line.

Ir Nelson TAM
Environmental Team Leader





Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area

Annual Environmental Monitoring and Audit

Review Report 2018

Prepared by:

Telex Environmental and Energy Management Limited


COMMERCIAL-IN-CONFIDENCE

Author:




Jackson TSE
Assistant Engineer

Checked:



Ir Nelson TAM
Associate Director

Approved:



Ir Nelson TAM
Associate Director





Issue	Date	Prepared by	Checked by	Approved by	Remark
1	20 th May 2019	Jackson TSE (Assistant Engineer)	Kiwi Man (Assistant Consultant)	Ir Nelson TAM (Associate Director)	--
2	15 th July 2019	Jackson TSE (Assistant Engineer)	Ir Nelson TAM (Associate Director)	Ir Nelson TAM (Associate Director)	--
3	16 th July 2019	Jackson TSE (Assistant Engineer)	Ir Nelson TAM (Associate Director)	Ir Nelson TAM (Associate Director)	--





LIST OF CONTENTS

1.0	Executive Summary.....	1
2.0	Introduction.....	2
3.0	Project Information.....	3
4.0	Summary of EM&A Requirement.....	5
5.0	Implementation Status of Environmental Mitigation Measures.....	12
6.0	Monitoring Results.....	12
7.0	Non-compliance, Complaints, Notifications of Summons and Status of Prosecutions..	23
8.0	Solid and Liquid Waste Management Status.....	24
9.0	Tree Preservation and Planting.....	24
10.0	Review of the Validity of EIA Predictions and Identification of Shortcomings in the Recommendation.....	25
11.0	Comments, Recommendations and Conclusions.....	26

List of table

Table 1	Contact Details of Key Personnel
Table 2	Summary of Works Undertaken during the Construction Phase in 2018
Table 3	Summary of Future Works to be Undertaken in Subsequent Construction Phase
Table 4	Representative Noise Sensitive Receivers Identified for Construction
Table 5	Noise Monitoring Equipment
Table 6	Action and Limit Levels for Construction Noising Monitoring
Table 7	Event and Action Plan for Construction Noise Monitoring
Table 8	Noise Monitoring Results at NSR1
Table 9	Noise Monitoring Results at NSR7
Table 10	Statistics for Non-compliances, Complaints, Notifications of Summons and Successful Prosecutions
Table 11	Comparisons of the EIA Prediction with Measured Noise Levels during Baseline Monitoring and Impact Monitoring

Appendix

Appendix A	Project Layout and Noise Monitoring Locations
Appendix B	Organization Chart
Appendix C	Summary of Environmental Mitigation Measures – Implementation Schedule
Appendix D	Graphical Plot of Noise Monitoring Results at NSR1 and NSR7
Appendix E	Summary of Waste Flow Table in 2018
Appendix F	Section 3.3.5 of EM&A Manual
Appendix G	Section 6.2.6 of EM&A Manual
Appendix H	Section 6.2.9 to 6.2.13 of EM&A Manual
Appendix I	Section 5.4.3 of EIA Report
Appendix J	Section 5.6.8 of EIA Report
Appendix K	Section 5.8.2 of EIA Report
Appendix L	Section 5.6.9 of EIA Report
Appendix M	Section 5.6.18 of EIA Report
Appendix N	Section 5.4.2 of EIA Report
Appendix O	Section 5.6.7 of EIA Report
Appendix P	PC Certificate

1.0 Executive Summary

- 1.1 In December 2015, Telex Environmental and Energy Management Limited (TEEM) was appointed to conduct an environmental monitoring and audit (EM&A) program for the proposed Re-provisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area, hereafter referred as “FEHD Offices-cum-vehicle Depot Project” or “the Project”. The site clearance and tree felling works were undertaken during the period from 10th December 2015 to 7th February 2016. The construction works was commenced on 29th February 2016 and construction works were substantially completed on 22nd November 2018. The PC Certificate is shown in *Appendix P*.
- 1.2 In accordance with Section 3.3.5 of the EM&A Manual of the Project (*Appendix F*), impact environmental monitoring and noise monitoring for the Project have been carried out during the construction phase in 2018 at Sir Ellis Kadoorie Secondary School (West Kowloon) (NSR1) and Fu Cheong Estate Fu Yun House (NSR7).
- 1.3 Mitigation measures had been implemented to minimize the environmental issue due to the construction of the FEHD Offices-cum-vehicle Depot. The recommended mitigation measures in the EIA process and the EM&A programme were effective in protect the environment during the construction phase in 2018. Therefore, the environmental performance during the construction phase within the reporting period was considered satisfactory.
- 1.4 During the construction phase in 2018, there was no exceedance of the Limit Levels for the noise monitoring in non-examination period at the two NSRs. Examination sessions at Sir Ellis Kadoorie Secondary School (West Kowloon) (NSR1) was held in January 2018, March 2018, April 2018, June 2018, October 2018, there was no exceedance of the Limit Levels for noise monitoring during the corresponding examination sessions.
- 1.5 During the construction phase in 2018, a total of 4645.99 tonnes of inert C&D material were generated and disposed of as public fills and 2018.4 tonnes of non-inert C&D materials were generated and disposed of at landfills. Besides, 3.69 tonnes of metals were recycled.
- 1.6 During the construction phase in 2018, tree T21 within the Project site was preserved and protected according the Section 6.2.6 of the EM&A Manual (*Appendix G*). Environmental protection measures such as erection of fencing around the tree was

implemented accordingly during the construction phase in 2018.

- 1.7 During the construction phase in 2018, there were no complaint, inspection notice, notification of summons or prosecution was received.
- 1.8 During the construction phase in 2018, site inspections were conducted in a weekly basis since the Project construction works commenced on 29th February 2016. There was no major environmental deficiency and no non-conformance of implementation of environmental mitigation measures was identified. Weekly site inspection on the implementation of environmental mitigation measures will be further carried out in the subsequent stages throughout the entire construction phase of the Project.
- 1.9 The monitoring results and statistics of non-compliance indicated that the EIA process with its recommended mitigation and EM&A programme were effective for protection of the environment, there was no unacceptable environmental impact posed by the Project during the construction phase in 2018.

2.0 Introduction

In December 2015, Telex Environmental and Energy Management Limited (TEEM) was appointed to conduct an environmental monitoring and audit (EM&A) program for the proposed Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area, hereafter referred as “the Project”. The site clearance and tree felling works were undertaken during the period from 10th December 2015 to 7th February 2016. The construction works were commenced on 29th February 2016 and construction works were substantially completed on 22nd November 2018. This Annual Report reviewed the EM&A works during the construction phase in 2018. During the reporting period, all EM&A works were undertaken in accordance with the EM&A Manual and the requirements under the Environmental Permit EP-454/2013.

3.0 Project Information

Background and Contacts of Key Management

- 3.1 The project proponent is the reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area (FEHD) and the Works Agent is the Architectural Services Department (ArchSD).
- 3.2 The proposed office-cum-vehicle depot building will be a five-story building comprising various facilities for vehicle washing and repair operation, parking of vehicles as well as offices. It will occupy a site area of about 8,278 m².
- 3.3 The FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot is categorized as a designated project under the Environmental Impact Assessment Ordinance (EIAO) and therefore a detailed Environmental Impact Assessment (EIA-216/2013) has been conducted in year 2013 and an Environmental Permit number EP-454/2013 was issued by Environmental Protection Department on November 2013.
- 3.4 The subject site is located at Yen Ming Road, West Kowloon Reclamation Area given in Appendix A. The subject site is bounded to the north by Nam Cheong Station, to the east by CLP Tak Kok Tsui Substation, to the south by Yun Fat Building, and to the west by Cheung Sha Wan Wholesales Fish and Food Markets. Sir Ellis Kadoorie Secondary School (West Kowloon) and Fu Cheong Estate Fu Yun House, being the nearest educational and residential establishment, are located at around 100m and 270m from the site boundary respectively.
- 3.5 Key personnel and contact particulars are summarized in **Table 1**.

Table 1 Contact Details of Key Personnel

Role	Department / Company	Names	Contact Number
Project Proponent	Food and Environmental Hygiene Department	Mr. Vincent Tam	2309 2049
Works Agent	Architectural Services Department	Mr. Alan Nip	2867 3655
Architect's representative	P&T Architects and Engineers (Architectural)	Mr. Jim Hung	2832 3016
Main Contractor	China Road and Bridge Corporation	Mr. Vincent Chung	2283 1688
Environmental Team Leader	Telemax Environmental and Energy Management Ltd.	Ir Nelson Tam	3610 8701
Independent Environmental Checker	Allied Environmental Consultants Ltd.	Ms. Grace Kwok	2815 7028

WWorks Progress during the Course of the Project

- 3.6 The major works undertaken and/or completed during the construction phase in 2018 are summarized below in **Table 2**.

Table 2 Summary of Works Undertaken during the Construction Phase in 2018

Works Undertaken / On-going Works	Duration
Piling works	Dec 2015 – Feb 2017
Pile Caps works	Mar 2016 – Aug 2017
Superstructure works	Apr 2017 – Aug 2018
Internal Finishing Works	Dec 2017 – Dec 2018

- 3.7 Since the construction works were substantially completed on 22nd November 2018, some dismantling of formworks and falsework will be undertaken and/or completed after completion are summarized below in **Table 3**.

Table 3 Summary of Works to be Undertaken After Completion

Future Works to be Undertaken	Duration
General housekeeping	From Dec 2018 to Feb 2019 & May to Jun 2019
Dismantling of formworks and falsework	From Dec 2018 to Feb 2019
Painting works	From Dec 2018 to Jan 2019 & May 2019
Plastering works	From Dec 2018 to Jan 2019 & May 2019
Backfilling works	From Dec 2018 to Jan 2019
Screeding works	From Dec 2018 to Jan 2019
Drilling	Dec 2018
Hammering	Dec 2018
Erection of bamboo scaffold, block wall, brick wall metal frame and formwork	Dec 2018
Steel fixing	Dec 2018
Concrete surfacing	Dec 2018
Defects rectification works	Jun 2019
Outstanding landscaping works	Jun 2019

4.0 Summary of EM&A Requirements

According to the environmental findings detailed in the Environmental Impact Assessment (EIA) report and the EM&A Manual of the FEHD Offices-cum-vehicle Depot Project, the EM&A requirements of the noise, air quality, water quality, waste management, landscape and visual impacts are summarized as follows:

Environmental Audit

- 4.1 Site inspections should be conducted regularly to ensure that appropriate environmental protection and pollution control mitigation measures for noise, air quality, water quality, waste management and landscape and visual aspects are properly implemented for the construction works activities associated with the Project, as they are one of the most effective tools to enforce the environmental protection requirements at the works sites and works areas.
- 4.2 Regular site inspections should be carried out and led by the Architect's Representative and attended by the Contractor and Environmental Team (ET) at least once every week. The areas of inspection should not be limited to the environmental conditions, pollution control and mitigation measures within the works sites and works areas. It should also review the environmental conditions of that location that are beyond the boundary of the works sites and works areas likely to be affected directly or indirectly by the construction site activities. The ET Leader should make reference to the following information when conducting site inspection:
- The EIA and EM&A recommendations on the environmental protection and pollution control mitigation measures;
 - On-going results of the EM&A programme;
 - The works progress and programme;
 - Proposals of individual works methodologies (which should include the proposal of the associated pollution control measures);
 - Contract specifications on environmental protection and pollution prevention control;
 - The relevant environmental protection and pollution control legislation; and
 - Previous site inspection findings that were undertaken by the ET and/or others.

- 4.3 The Contractor should keep the Architect's Representative and ET updated with all the relevant environmental related information on the construction contract to carry out the site inspections. The inspection findings and associated recommendations for improvements to the environmental protection and pollution control and outcome of the improvement should be recorded and followed up by the Contractor in an agreed timeframe.
- 4.4 The Architect's Representative, ET and Contractor should also carry out ad hoc site inspections if significant environmental problems are identified. Inspections may also be required subsequent to the receipt of environmental complaints, or as part of the investigation work, as specified in the Event and Action Plans for the EM&A programme.
- 4.5 During the construction phase in 2018, site inspections were conducted on a weekly basis since the Project construction works commenced on 29th February 2016. There was no major environmental deficiency and no non-conformance of implementation of environmental mitigation measures was identified. Weekly site inspection on the implementation of environmental mitigation measures will be further carried out in the subsequent stages throughout the entire construction phase of the Project.

Noise

a) Environmental Impact Hypothesis Tested

- 4.6 According to the approved EIA Report, three noise impact hypotheses for the Project were studied and the assessment results are summarized as below;
- i) Construction Noise during Project Construction Phase

The construction noise impacts owing to the Project construction phase were estimated by calculating the cumulative Sound Power Levels (SWLs) for the construction activities. With the consideration of the on-site Power Mechanical Equipment (PME) and their operation frequency during different construction stages (i.e. foundation, superstructure, finishes, etc.), the estimated total SWLs are summarized in **Table 5-10** under Section 5.4.3 of the approved EIA Report (**Appendix I**).

The prediction of construction noise under unmitigated and mitigated scenarios at representative NSRs at different Assessment Years were assessed and compared. The estimated Project construction noise impacts under the unmitigated and mitigated scenarios are summarized in *Table 5-14* to *Table 5-15* under Section 5.6.8 (*Appendix J*) and in *Table 5-24* to *Table 5-25* under Section 5.8.2 of the approved EIA Report (*Appendix K*). The predicted construction noise levels at NSR1 – Sir Ellis Kadoorie Secondary School (West Kowloon) and NSR7 – Fu Cheong Estate Fu Yun House were both close to 65 dB(A) according to *Table 5-24* under Section 5.8.2 of the approved EIA Report (*Appendix K*).

From the view of marginal compliance with the assessment criteria during examination period, i.e. 65 dB(A), construction noise monitoring should be conducted at designated locations at NSR1 and NSR7 during the construction phase of the Project as stipulated in the Section 3.3.5 of the EM&A Manual of the Project (*Appendix F*).

ii) Fixed Plant Noise during the Project Operation Phase

Fixed plant noise from was considered as part of the potential noise sources during the Project operation phase. Two kinds of operation noise, (a) workshop vehicle repair activities; and (b) mechanical ventilation and air conditioning equipment were expected to be the major fixed plant noise owing to the operation of the Project development.

Using the maximum allowable SWLs emitted from the plant room, the Sound Pressure Levels (SPL) at representative NSRs were calculated based on consideration on distance attenuation, tonality correction, impulsiveness correction, noise shielding effect as well as façade correction. The corresponding noise impacts at representative NSRs owing to identified fixed plant noise sources are summarized in *Table 5-16* under Section 5.6.9 of the approved EIA Report (*Appendix L*).

iii) Off-site Traffic Noise during the Project Operation Phase

During the Project Operation Phase, the off-site traffic from the Depot during one AM peak at 0700-0800 and one PM peak 1500-1600 were identified in accordance with the approved EIA Report Section 5.6.13 (*Appendix M*).



Furthermore, two scenarios, “With Project” and “Without Project”, were compared in order to determine the magnitude of traffic noise contribution owing to the Project development operation. In total of eight cases under two scenarios during the AM and PM peaks using year 2017 and 2032 traffic forecast respectively, were assessed. The off-site traffic noise assessment results are summarized in *Table 5-21* and *Table 5-22* under Section 5.6.18 of the approved EIA Report (*Appendix M*).

Based on the assessment results, the operation of the FEHD Depot would introduce insignificant traffic noise impact less than 1.0 dB(A) to all representative NSRs for short-term period and in the long run.

4.7 From the view on the assessment results of the three environmental hypotheses tested in the Project EIA study, noise control measures are required to be implemented during both the Project construction and operation phases. During the construction phase, with the implementation of noise mitigation measures, adverse construction noise impact is not anticipated. Notwithstanding, noise monitoring at NSR1 and NSR7 should be conducted as part of the EM&A procedures in accordance with Section 3.3.5 of the EM&A Manual of the Project (*Appendix F*). During the operation phase, with the implementation of the mitigation measures for both workshop vehicle repair activities and MVAC installation, adverse impact to the NSRs due to the fixed plant noise would not be anticipated. On the other hand, noise mitigation measure is not necessary for the off-site traffic noise.

b) Monitoring Locations

4.8 In accordance with Section 3.3.5 of the EM&A Manual of the Project (*Appendix F*), the designated locations for the construction noise monitoring are listed in *Table 4* and shown in *Appendix A*.

Table 4 Representative Noise Sensitive Receivers Identified for Construction

NSR ID	Monitoring Location	NSR Type
NSR1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Educational Premises
NSR7	Fu Cheong Estate Fu Yun House	Residential Premises

*NSR = Noise Sensitive Receivers



- 4.9 The monitoring location NSR1 is located at the playground area nearby the main block of Sir Ellis Kadoorie Secondary School (West Kowloon) the monitoring location NSR4 is located at the pedestrian nearby the Fu Yun House, Fu Cheong Estate.

c) Monitoring Methodology and Equipment

- 4.10 The construction noise level should be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). The $L_{eq(30min)}$ should be used as the monitoring parameter for the time period from 0700 to 1900 hours on normal weekdays. The supplementary information for data auditing and statistical results, such as L_{10} and L_{90} , should be should be obtained and recorded for reference.
- 4.11 Impact noise monitoring was conducted at the designated noise monitoring location between 0700-1900 hours using a sound level meter which complies with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1).
- 4.12 Monitoring of $L_{eq(30min)}$ should be carried out at each station at 0700-1900 hours on normal weekdays at a frequency of once a week when construction are underway. The L_{eq} , L_{10} and L_{90} should be recorded at the specified intervals. The meter shall be mounted on a tripod at a height of 1.2m above ground with the microphone positioned at G/F adjacent the NSRs facing the works area.
- 4.13 Noise measurements shall not be made in the presence of fog, rain, and wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed will be checked with a portable anemometer capable of measuring the wind speed in m/s. Noise measurements shall be made when construction activities are underway.
- 4.14 The noise monitoring instrumentation details are given in **Table 5**. Copies of calibration certificates were attached in the appendices of the Monthly EM&A Reports.

Table 5 Noise Monitoring Equipment

Item	Equipment	Model Number	Serial Number	Period In Use
1	Integrating Sound Level Meter	AWA5661	304042	Jan 18 – Dec 18
2	Calibrator	ND9	507258	Jan 18 – Sep 18
3	Calibrator	100B	039507	Oct 18 – Dec 18

d) Environmental Quality Performance Limits (Action and Limit Levels)

4.15 Accordingly to the EM&A requirement only noise impact of the construction stage requires impact monitoring. Corresponding Action and Limit Level is set up to provide an appropriate framework for the interpretation of monitoring results. The noise impact monitoring data shall be checked against the Action and Limit Levels as listed in **Table 6**.

Table 6 Action and Limit Levels for Construction Noising Monitoring

Time Period	Action Level	Limit Level, L_{eq} 30mins, dB(A)
0700-1900 hours on normal weekdays	When one documented complaint is received	70 dB(A) for school
		65 dB(A) during examination period.
		75 dB(A) for residential premises

e) Event and Action Plans

4.16 In case of non-compliance with the construction noise criteria, the contractor shall undertake corresponding actions in accordance with the Event and Action Plan given in EM&A Manual and shown in **Table 7**.

Table 7 Event and Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	Architect's Representative	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify the IEC and Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IEC and Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the Architect's Representative accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to the IEC. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Notify the IEC, Architect's Representative, EPD and Contractor. 2. Identify sources. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IEC, Architect's Representative and EPD the causes and action taken for the exceedances. 7. Assess the effectiveness of the Contractor's remedial action and keep the IEC, EPD and Architect's Representative informed of the results. 8. If exceedance stops, crease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst the Architect's Representative, ET and Contractor on the potential remedial action. 2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the Architect's Representative accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial action to the IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problems still not under control. 5. Stop the relevant portion of works as determined by the Architect's Representative until the exceedance is abated.

Note (1): ET – Environmental Team, IEC – Independent Environmental Checker; (2) Each step of action should be undertaken within 1 working day unless otherwise specified.

5.0 Implementation Status of Environmental Mitigation Measures

The Contractor implemented environmental mitigation measures to minimize the environmental impacts due to construction activities. Summary of environmental mitigation measures implementation schedule for construction stage and their status for the Project construction are given in *Appendix C*.

6.0 Monitoring Results

- 6.1 Impact noise monitoring was conducted at Sir Ellis Kadoorie Secondary School (NSR1) and Fu Cheong Estate Fu Yun House (NSR7) throughout the construction phase in 2018.
- 6.2 Noise monitoring results in terms of $L_{eq(30min)}$, $L_{10(30min)}$ and $L_{90(30min)}$ measured at Sir Ellis Kadoorie Secondary School (NSR1) and Fu Cheong Estate Fu Yun House (NSR7) are summarized in *Table 8* and *Table 9* respectively and the corresponding graphical plot are given in Appendix E. The measured noise levels L_{10} and L_{90} represent sound levels that are exceeded 10% and 90% of the time respectively. Normally, L_{10} measurements can be considered as the average peak levels, whilst L_{90} levels can be considered as the average background noise levels. No exceedance was found during the reporting period at both NSR1 and NSR7 according to the monitoring results.

Table 8 Noise Monitoring Results at NSRI

NSR 1	Sir Ellis Kadoorie Secondary School (West Kowloon)						
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	Leq,30min (dB(A))	Limit Level (dB(A))
4/1/2018	07:00-19:00	Fine	<5	66.6	59.2	64.5	70.0
6/1/2018	07:00-19:00	Cloudy	<5	66.4	57.4	64.3	70.0
12/1/2018 (Exam)	07:00-19:00	Sunny	<5	66.2	56.6	64.2	65.0
18/1/2018 (Exam)	07:00-19:00	Fine	<5	65.5	56.5	63.6	65.0
24/1/2018	07:00-19:00	Sunny	<5	66.1	56.8	63.9	70.0
30/1/2018	07:00-19:00	Cloudy	<5	66.3	57.5	64.2	70.0
5/2/2018	07:00-19:00	Fine	<5	66.3	58.3	64.1	70.0
10/2/2018	07:00-19:00	Sunny	<5	66.1	58.5	64.0	70.0
14/2/2018	07:00-19:00	Sunny	<5	66.0	58.4	64.0	70.0
20/2/2018	07:00-19:00	Cloudy	<5	66.2	59.8	64.1	70.0
22/2/2018	07:00-19:00	Cloudy	<5	66.0	59.2	63.9	70.0
28/2/2018	07:00-19:00	Bright	<5	66.3	59.2	64.2	70.0

NSR 1	Sir Ellis Kadoorie Secondary School (West Kowloon)						
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	L _{eq,30min} (dB(A))	Limit Level (dB(A))
6/3/2018	07:00-19:00	Cloudy	<5	66.7	60.3	64.5	70.0
12/3/2018	07:00-19:00	Sunny	<5	66.8	60.5	64.7	70.0
17/3/2018	07:00-19:00	Cloudy	<5	66.4	59.8	64.3	70.0
23/3/2018 (Exam)	07:00-19:00	Cloudy	<5	66.4	60.4	64.1	65.0
29/3/2018 (Exam)	07:00-19:00	Cloudy	<5	66.1	57.6	64.0	65.0
4/4/2018	07:00-19:00	Sunny	<5	66.6	60.3	64.4	70.0
10/4/2018 (Exam)	07:00-19:00	Fine	<5	66.2	60.0	64.1	65.0
16/4/2018 (Exam)	07:00-19:00	Cloudy	<5	66.0	58.4	64.0	65.0
21/4/2018	07:00-19:00	Fine	<5	66.6	60.0	64.5	70.0
27/4/2018	07:00-19:00	Sunny	<5	66.3	59.2	64.2	70.0
3/5/2018	07:00-19:00	Sunny	<5	66.3	59.9	64.2	70.0
9/5/2018	07:00-19:00	Cloudy	<5	66.5	60.7	64.4	70.0
15/5/2018	07:00-19:00	Sunny	<5	66.5	60.2	64.4	70.0



NSR 1	Sir Ellis Kadoorie Secondary School (West Kowloon)						
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	L _{eq,30min} (dB(A))	Limit Level (dB(A))
21/5/2018	07:00-19:00	Fine	<5	66.4	60.0	64.3	70.0
26/5/2018	07:00-19:00	Sunny	<5	66.4	60.7	64.3	70.0
1/6/2018	07:00-19:00	Sunny	<5	66.2	60.1	64.0	70.0
7/6/2018 (Exam)	07:00-19:00	Overcast	<5	66.2	60.5	64.1	65.0
13/6/2018 (Exam)	07:00-19:00	Overcast	<5	66.1	59.9	63.9	65.0
19/6/2018 (Exam)	07:00-19:00	Fine	<5	66.2	60.4	64.1	65.0
25/6/2018	07:00-19:00	Sunny	<5	66.1	60.4	64.0	70.0
30/6/2018	07:00-19:00	Sunny	<5	66.3	60.0	64.1	70.0
6/7/2018	07:00-19:00	Sunny	<5	66.0	59.2	63.9	70.0
12/7/2018	07:00-19:00	Fine	<5	66.1	60.3	64.1	70.0
18/7/2018	07:00-19:00	Overcast	<5	65.3	58.6	63.2	70.0
24/7/2018	07:00-19:00	Fine	<5	66.5	60.6	64.4	70.0
30/7/2018	07:00-19:00	Fine	<5	66.0	59.7	64.0	70.0
4/8/2018	07:00-19:00	Fine	<5	65.8	60.6	63.8	70.0
10/8/2018	07:00-19:00	Overcast	<5	65.5	59.4	63.5	70.0
16/8/2018	07:00-19:00	Cloudy	<5	66.0	60.3	64.0	70.0





NSR 1	Sir Ellis Kadoorie Secondary School (West Kowloon)						
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	L _{eq,30min} (dB(A))	Limit Level (dB(A))
22/8/2018	07:00-19:00	Overcast	<5	65.9	59.9	63.8	70.0
28/8/2018	07:00-19:00	Overcast	<5	65.9	60.3	64.0	70.0
3/9/2018	07:00-19:00	Sunny	<5	66.2	61.0	64.1	70.0
8/9/2018	07:00-19:00	Cloudy	<5	66.0	60.7	63.9	70.0
14/9/2018	07:00-19:00	Cloudy	<5	66.0	60.4	64.0	70.0
20/9/2018	07:00-19:00	Sunny	<5	66.6	60.8	64.5	70.0
26/9/2018	07:00-19:00	Cloudy	<5	66.4	60.5	64.4	70.0
2/10/2018	07:00-19:00	Sunny	<5	66.6	60.4	64.6	70.0
8/10/2018	07:00-19:00	Sunny	<5	66.2	60.5	64.2	70.0
13/10/2018	07:00-19:00	Sunny	<5	66.1	60.2	64.1	70.0
19/10/2018	07:00-19:00	Fine	<5	66.2	60.4	64.2	70.0
25/10/2018 (Exam)	07:00-19:00	Fine	<5	65.8	59.7	63.9	65.0
31/10/2018 (Exam)	07:00-19:00	Fine	<5	65.7	59.4	63.7	65.0
6/11/2018	07:00-19:00	Sunny	<5	66.6	60.8	64.6	70.0
12/11/2018	07:00-19:00	Cloudy	<5	66.3	60.4	64.2	70.0
17/11/2018	07:00-19:00	Sunny	<5	66.1	60.1	64.1	70.0
23/11/2018	07:00-19:00	Cloudy	<5	66.2	60.4	64.0	70.0
29/11/2018	07:00-19:00	Fine	<5	66.2	59.9	64.3	70.0





NSR 1		Sir Ellis Kadoorie Secondary School (West Kowloon)					
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	L _{eq,30min} (dB(A))	Limit Level (dB(A))
5/12/2018	07:00-19:00	Cloudy	<5	66.1	58.6	64.1	70.0
11/12/2018	07:00-19:00	Sunny	<5	65.8	58.3	63.8	70.0
17/12/2018	07:00-19:00	Sunny	<5	66.2	60.1	64.2	70.0
22/12/2018	07:00-19:00	Fine	<5	66.1	59.9	64.0	70.0
28/12/2018	07:00-19:00	Fine	<5	66.0	59.6	63.9	70.0
Average L _{eq(30min)} for Exam Period in dB(A)						64.0	65
Average L _{eq(30min)} for Non-Exam Days in dB(A)						64.1	70

#Exam = Monitoring period with examination session at NSR1 on examination days



Table 9 Noise Monitoring Results at NSR7

NSR 7	Fu Cheong Estate Fu Yun House						
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	L _{eq,30min} (dB(A))	Limit Level (dB(A))
4/1/2018	07:00-19:00	Fine	<5	73.0	65.0	70.8	75.0
6/1/2018	07:00-19:00	Cloudy	<5	72.6	64.6	70.5	75.0
12/1/2018	07:00-19:00	Sunny	<5	72.8	64.2	70.7	75.0
18/1/2018	07:00-19:00	Fine	<5	72.5	64.3	70.3	75.0
24/1/2018	07:00-19:00	Sunny	<5	73.3	65.2	71.3	75.0
30/1/2018	07:00-19:00	Cloudy	<5	71.5	63.9	69.5	75.0
5/2/2018	07:00-19:00	Fine	<5	73.0	66.6	70.8	75.0
10/2/2018	07:00-19:00	Sunny	<5	72.9	65.5	70.9	75.0
14/2/2018	07:00-19:00	Sunny	<5	73.4	66.3	71.3	75.0
20/2/2018	07:00-19:00	Cloudy	<5	72.4	65.2	70.4	75.0
22/2/2018	07:00-19:00	Cloudy	<5	73.5	65.4	71.3	75.0
28/2/2018	07:00-19:00	Bright	<5	73.0	64.7	70.9	75.0
6/3/2018	07:00-19:00	Cloudy	<5	73.3	65.6	71.2	75.0
12/3/2018	07:00-19:00	Sunny	<5	73.3	65.4	71.3	75.0
17/3/2018	07:00-19:00	Cloudy	<5	73.2	65.5	71.2	75.0
23/3/2018	07:00-19:00	Cloudy	<5	72.7	64.7	70.7	75.0
29/3/2018	07:00-19:00	Cloudy	<5	73.8	66.4	71.7	75.0
4/4/2018	07:00-19:00	Sunny	<5	73.2	65.3	71.2	75.0
10/4/2018	07:00-19:00	Fine	<5	73.4	66.1	71.3	75.0
16/4/2018	07:00-19:00	Cloudy	<5	72.6	65.2	70.6	75.0
21/4/2018	07:00-19:00	Fine	<5	72.6	64.4	70.7	75.0
27/4/2018	07:00-19:00	Sunny	<5	73.0	65.6	71.0	75.0
3/5/2018	07:00-19:00	Sunny	<5	72.6	64.4	70.5	75.0
9/5/2018	07:00-19:00	Cloudy	<5	72.5	65.7	70.5	75.0
15/5/2018	07:00-19:00	Sunny	<5	73.0	65.2	70.8	75.0
21/5/2018	07:00-19:00	Fine	<5	73.2	64.5	71.1	75.0
26/5/2018	07:00-19:00	Sunny	<5	72.7	65.0	70.6	75.0
1/6/2018	07:00-19:00	Sunny	<5	72.7	64.2	70.5	75.0
7/6/2018	07:00-19:00	Overcast	<5	72.5	65.0	70.5	75.0



NSR 7		Fu Cheong Estate Fu Yun House					
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	Leq,30min (dB(A))	Limit Level (dB(A))
13/6/2018	07:00-19:00	Overcast	<5	73.0	65.1	70.9	75.0
19/6/2018	07:00-19:00	Fine	<5	73.0	65.3	70.8	75.0
25/6/2018	07:00-19:00	Sunny	<5	73.4	66.0	71.2	75.0
30/6/2018	07:00-19:00	Sunny	<5	72.2	65.7	70.2	75.0
6/7/2018	07:00-19:00	Sunny	<5	72.4	64.4	70.4	75.0
12/7/2018	07:00-19:00	Fine	<5	72.6	65.5	70.5	75.0
18/7/2018	07:00-19:00	Overcast	<5	72.2	66.1	70.1	75.0
24/7/2018	07:00-19:00	Fine	<5	73.2	66.5	71.1	75.0
30/7/2018	07:00-19:00	Fine	<5	72.4	65.6	70.4	75.0
4/8/2018	07:00-19:00	Fine	<5	72.8	65.0	70.7	75.0
10/8/2018	07:00-19:00	Overcast	<5	73.1	66.3	71.0	75.0
16/8/2018	07:00-19:00	Cloudy	<5	73.0	65.7	71.1	75.0
22/8/2018	07:00-19:00	Overcast	<5	72.7	64.8	70.6	75.0
28/8/2018	07:00-19:00	Overcast	<5	71.9	64.5	69.8	75.0
3/9/2018	07:00-19:00	Sunny	<5	74.0	66.1	72.0	75.0
8/9/2018	07:00-19:00	Cloudy	<5	73.3	65.7	71.2	75.0
14/9/2018	07:00-19:00	Cloudy	<5	73.1	65.4	70.9	75.0
20/9/2018	07:00-19:00	Sunny	<5	73.4	66.6	71.3	75.0
26/9/2018	07:00-19:00	Cloudy	<5	72.8	65.2	70.7	75.0
2/10/2018	07:00-19:00	Sunny	<5	73.6	66.3	71.7	75.0
8/10/2018	07:00-19:00	Sunny	<5	73.8	65.9	71.7	75.0
13/10/2018	07:00-19:00	Sunny	<5	73.8	66.3	71.7	75.0
19/10/2018	07:00-19:00	Fine	<5	73.2	65.5	71.0	75.0
25/10/2018	07:00-19:00	Fine	<5	73.0	65.8	70.9	75.0
31/10/2018	07:00-19:00	Fine	<5	73.1	65.9	71.1	75.0
6/11/2018	07:00-19:00	Sunny	<5	72.8	65.7	70.8	75.0
12/11/2018	07:00-19:00	Cloudy	<5	73.1	66.0	71.1	75.0
17/11/2018	07:00-19:00	Sunny	<5	73.5	66.1	71.5	75.0
23/11/2018	07:00-19:00	Cloudy	<5	72.4	65.4	70.4	75.0
29/11/2018	07:00-19:00	Fine	<5	73.0	65.8	71.0	75.0





NSR 7		Fu Cheong Estate Fu Yun House					
Date	Monitoring	Weather Condition	Wind Speed (ms ⁻¹)	L _{10,30min} (dB(A))	L _{90,30min} (dB(A))	L _{eq,30min} (dB(A))	Limit Level (dB(A))
5/12/2018	07:00-19:00	Cloudy	<5	72.0	65.1	69.9	75.0
11/12/2018	07:00-19:00	Sunny	<5	72.0	65.2	70.0	75.0
17/12/2018	07:00-19:00	Sunny	<5	72.5	66.2	70.4	75.0
22/12/2018	07:00-19:00	Fine	<5	73.4	66.5	71.3	75.0
28/12/2018	07:00-19:00	Fine	<5	73.4	65.8	71.3	75.0
Average L _{eq(30min)} in dB(A)						70.9	75.0

6.3 For those noise monitoring results among non-examination periods, the minimum and maximum noise level measured in a single 30-min period at Sir Ellis Kadoorie Secondary School (West Kowloon) (NSR1) was 63.2 dB(A) and 64.7 dB(A) respectively; while the minimum and maximum noise level measured in a single 30-min period at Fu Cheong Estate Fu Yun House (NSR7) was 69.5 dB(A) and 72.0 dB(A) respectively. Therefore, there was no exceedance of the Limit Level during the non-examination period, i.e. no greater than 70.0 dB(A) and 75.0 dB(A) for NSR1 and NSR7 respectively.

6.4 Examination at Sir Ellis Kadoorie Secondary School (West Kowloon) (NSR1) was held in January 2018, March 2018, April 2018, June 2018 and October 2018. As to minimize the potential noise impacts on NSR1 owing to Project construction activities, the contractor suspended on-site piling works during the examination periods. Among the examination periods, the minimum and maximum noise level measured in a single 30-min period at NSR1 was 63.6 dB(A) and 64.2 dB(A) respectively. Therefore, there was no exceedance of the Limit Level during the examination period, i.e. no greater than 65.0 dB(A) for NSR1. The detailed breakdown of examination schedule at NSR1 and the corresponding measured noise levels were summarized in the Monthly EM&A Report for January 2018, March 2018, April 2018, June 2018 and October 2018.



A Review on the Monitoring Results

- 6.5 Reviewing the noise measurements results as well as the conditions of surrounding environment, the following two aspects are identified as the major influencing factors on the monitoring results,
- ➔ On-site factor: Piling and Pile Cap works carried out within the Project site;
 - ➔ Off-site factor: Construction noise from a nearby on-going construction site.
- 6.6 The construction works undertaken in the Project Site was given in **Table 2** and they were identified as the major on-site influencing factors affecting the monitoring results. During the construction phase in 2018, specifically the Foundation Stage, piling works was identified as the major potential noise source from the Project in accordance with Section 5.4.2 of the approved EIA Report (**Appendix N**).
- 6.7 Meanwhile, there was a residential project development at top of Nam Chong station effectively close to NSR7 and the project was under construction in 2018. The noise impacts from the abovementioned construction site would further affect monitoring results.

a) Schedule of Piling & Pile Cap Works as an On-site Influencing Factor

- 6.8 By analyzing the site daily operation records, it is confirmed that the Project piling and pile cap works was the major potential noise source during the construction phase in 2018, thus, the schedule of piling works could be an influencing factor on the corresponding noise levels during the monitoring period.
- 6.9 During the examination period, no piling works were carried out on-site, the measured noise levels at NSR1 during the examination and non-examination periods serve as the supporting evidence on this effective implementation of mitigation measure. The overall annual average $L_{eq,30min}$ during examination periods at NSR1, i.e. 64.0 dB(A), was lower than that during non-examination periods, i.e. 64.1 dB(A); while the maximum single 30-min measured noise levels during examination periods and during non-examination periods at NSR1 were 64.2 dB(A) and 64.7 dB(A) respectively.
- 6.10 Monitoring results suggested that the implemented suspension of piling and pile cap works during examination periods could effectively lessen the noise impacts to NSR1, complying with corresponding assessment criteria.

b) Noise Impacts from Other Construction Site at NSR7

- 6.11 It is observed that the measured noise levels at NSR7 were always higher than those at NSR1 during the construction phase in 2018. Under both unmitigated and mitigated scenarios, according to Section 5.6.8 and Section 5.8.2 of the EIA Report (*Appendix J and Appendix K*), the “Cumulative” cases (*Table 5-14 / Table 5-24*) would have comparable predicted construction noise levels at NSR1 with corresponding “Due to Project ONLY” cases (*Table 5-15 / Table 5-25*). However, at NSR7, the predicted “Cumulative” cases would significantly higher noise levels than the predicted “Due to Project ONLY” cases.
- 6.12 Consider the distance between NSR1 (100m) and NSR7 (270m) from the Project site, along with the prediction noise levels in accordance with the EIA Study, it would be expected that the contribution of construction noise from the Project would be more significant at NSR1 than NSR7. However, given the fact that there was an on-going construction site for Nam Cheong station development located closer to NSR7 than the Project site, the noise levels at NSR7 could be further influenced by the Nam Cheong station construction activities. *Appendix A* shows the Project layout along with the locations of NSR1, NSR7 and Nam Cheong station development
- 6.13 The generally higher measured noise levels at NSR7 than NSR1 in 2018 could be explained by the construction activities of another development project from a closer distance. The observed trends (i.e. higher levels and not tally with Project construction activity schedule) of measured noise levels at NSR7 might be more significantly affected by the schedule of construction activities at Nam Cheong station development project, instead of the Project.

7.0 Non-compliance, Complaints, Notifications of Summons and Status of Prosecutions

The cumulative statistics for non-compliances, complaints, notifications of summons and status of prosecutions for the Project since the date of commencement of construction works (i.e. 29th February 2016) are summarized in **Table 10**.

Table 10 Statistics for Non-compliances, Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics			
	Non-compliances	Complaints	Notifications of Summons	Successful Prosecutions
29/2/2016 - 31/12/2018	0	2	0	0

Record on Non-compliance of Action and Limit Levels

- 7.1 During the construction phase in 2018, there was no non-compliance of Action and Limit levels for the noise level. No actions nor follow-up procedures for non-compliance were taken during the construction phase in 2018.

Record on Environmental Complaints Received

- 7.2 During the construction phase in 2018, there was no environmental complaint received and recorded.

Record on Notifications of Summons and Successful Prosecution

- 7.3 During the construction phase in 2018, no notifications of summons nor successful prosecution were received. No actions nor follow-up procedures were required during the construction phase in 2018.

8.0 Solid and Liquid Waste Management Status

- 8.1 As advised by the Contractor, during the construction phase in 2018, a total of 4645.99 tonnes of inert C&D materials were generated and disposed of as public fills and 2018.4 tonnes of non-inert C&D materials were generated and disposed of at landfills. Summary of waste flow table during the construction phase of the Project in 2018 is given in *Appendix E*.
- 8.2 The Contractor was advised to maintain on site waste sorting and recording system and maximize reused / recycle of C&D wastes.

9.0 Tree Preservation and Planting

- 9.1 According to the Section 6.2.6 of the EM&A Manual (*Appendix G*), tree T21 within the Project site was preserved and protected during the construction phase in 2018.
- 9.2 Erection of fencing around the T21 was provided and regular visual checking of the tree condition was conducted during the construction phase in 2018.
- 9.3 In accordance with the Section 6.2.9 to 6.2.13 of the EM&A Manual (*Appendix H*), planting of trees at various areas of the Project site should be completed before the completion of the construction work. The planting of these trees will be provided in the upcoming stages of the Project.

10.0 Review of the Validity of EIA Predictions and Identification of Shortcomings in the Recommendation

10.1 During the construction phase in 2018, the monitoring results did not show major variations due to the construction activities being carried out and weather condition. The EM&A data was compared with the EIA predictions as summarized in **Table 11**.

Table 11 Comparisons of the EIA Prediction with Measured Noise Levels during Baseline Monitoring and Impact Monitoring

NSR	Name	Maximum Predicted Unmitigated Construction Noise Level, dB(A)	Maximum Predicted Mitigated Construction Noise Level, dB(A)	Measured Average $L_{eq}(30min)$ during Baseline Monitoring, dB(A)	Measured Maximum $L_{eq}(30min)$ during Impact Monitoring, dB(A)
NSR 1	Sir Ellis Kadoorie Secondary School (West Kowloon)	69	63	64.2	64.7 [#]
NSR 7	Fu Cheong Estate Fu Yun House	66	65	64.1	72.0

denotes for # results for non-examination periods

10.2 The maximum construction noise level measured during the construction phase in 2018 at NSR1 and NSR7 were above the corresponding maximum predicted mitigated construction noise level as given in the Section 5.8.2 of the approved Project EIA Report (**Appendix K**). However, the prediction of construction noise levels involved the uncertainty in the construction noise impacts from Nam Cheong station development, also known as Phase 2A, as indicated in the Section 5.6.7 of the EIA Report (**Appendix O**). Such a discrepancy between the maximum predicted mitigated noise level and the

maximum impact measurement values was more significant at NSR7 than that at NSR1 (7 dB(A)). Given that the Nam Cheong station development is located closer to NSR7, the construction noise impact from Nam Cheong station development is expected to be more significant at NSR7 than at NSR1, leading to the greater prediction discrepancy at NSR7.

- 10.3 Nevertheless, the maximum $L_{eq(30min)}$ measured noise levels at both NSRs complied with the relevant Limit Levels, including the examination periods at NSR1. The monitoring results and the non-compliance indicated that the EIA process with its recommended mitigation and EM&A programme were effective for protection of the environment and there were no unacceptable impacts posed by the Project.

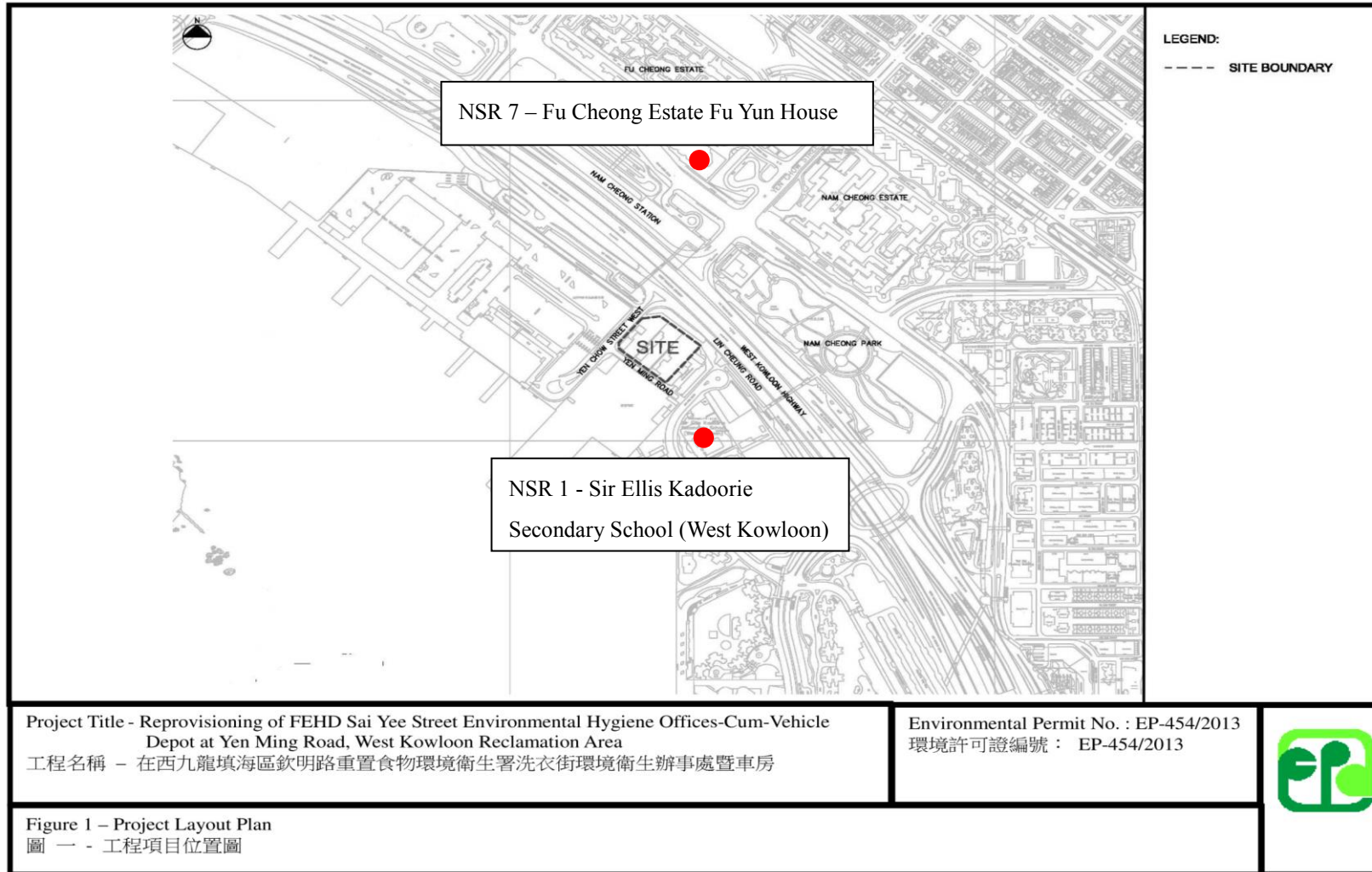
11.0 Comments, Recommendations and Conclusions

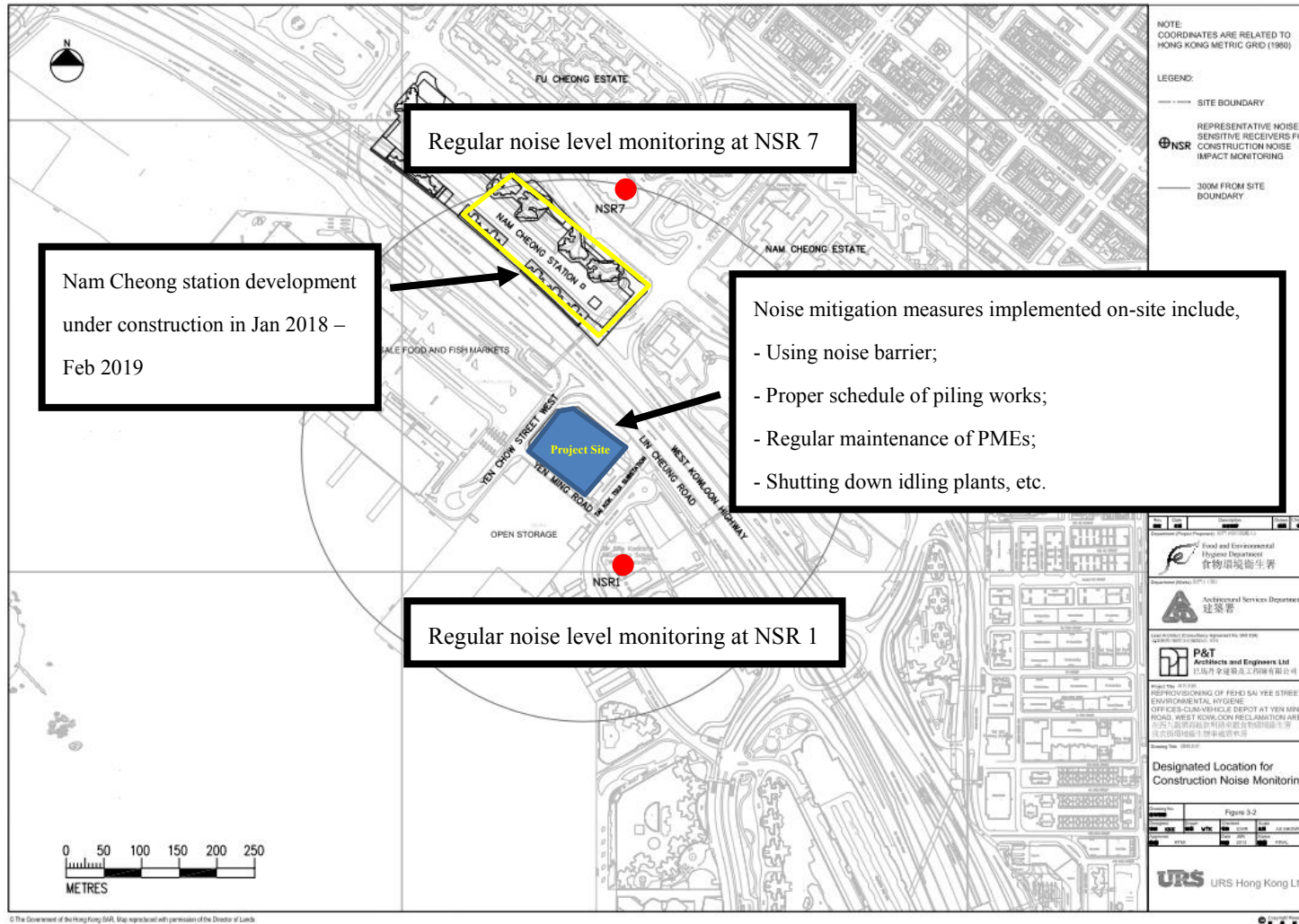
- 11.1 Site clearance and tree felling works were undertaken during the period from 10th December 2015 to 7th February 2016. The construction works was commenced on 29th February 2016 and construction works were substantially completed on 22nd November 2018.
- 11.2 EM&A programme for the Re-provisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area was commenced on 29th February 2016, i.e. the construction phase and will be continued in the operation phase.
- 11.3 The recommended mitigation measures are summarized in Appendix C. The mitigation measures had been implemented to minimize the environmental impacts due to the construction phase of the Project in 2018. The recommended mitigation measures in the EIA process and the EM&A programme were effective in protecting the environment. As such, the environmental performance during the construction phase in 2018 was considered satisfactory.
- 11.4 Noise monitoring had been undertaken during the construction phase in 2018 in accordance with the EM&A Manual.

- 11.5 During the construction phase in 2018, there was no exceedance of the Limit Levels for noise monitoring in both non-examination period at NSR1 and NSR7. Examination was held in January 2018, March 2018, April 2018, June 2018 and October 2018 at NSR1, no exceedance of Limit Levels during the examination periods with proper implementation of piling works schedule on-site.
- 11.6 During the construction phase in 2018, a total of 4645.99 tonnes of inert C&D material were generated and disposed of as public fills and 2018.40 tonnes of non-inert C&D materials were generated and disposed of at landfills. Besides, 3.69 tonnes of metals were recycled.
- 11.7 During the construction phase in 2018, tree T21 within the Project site was preserved and protected according to the Section 6.2.6 of the EM&A Manual (**Appendix G**). Environmental protection measures such as erection of fencing around the tree was implemented accordingly during the construction phase in 2018.
- 11.8 During the construction phase in 2018, there were no complaint, inspection notice, notification of summons or prosecution was received.
- 11.9 During the construction phase in 2018, site inspections were conducted in a weekly basis since the Project construction works commenced on 29th February 2016. There was no major environmental deficiency and no non-conformance of implementation of environmental mitigation measures was identified. Weekly site inspection on the implementation of environmental mitigation measures will be further carried out in the subsequent stages throughout the entire construction phase of the Project.
- 11.10 The monitoring results and statistics of non-compliance indicated that EIA process with its recommended mitigation and EM&A programme were effective for protection of the environment and there was no unacceptable environmental impact posed by the Project during the construction phase in 2018.



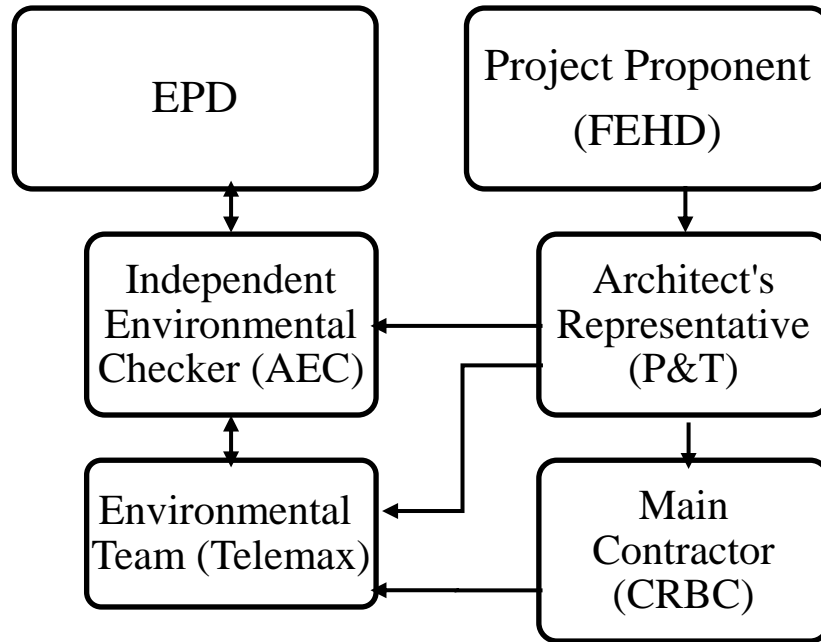
Appendix A Project Layout and Noise Monitoring Locations







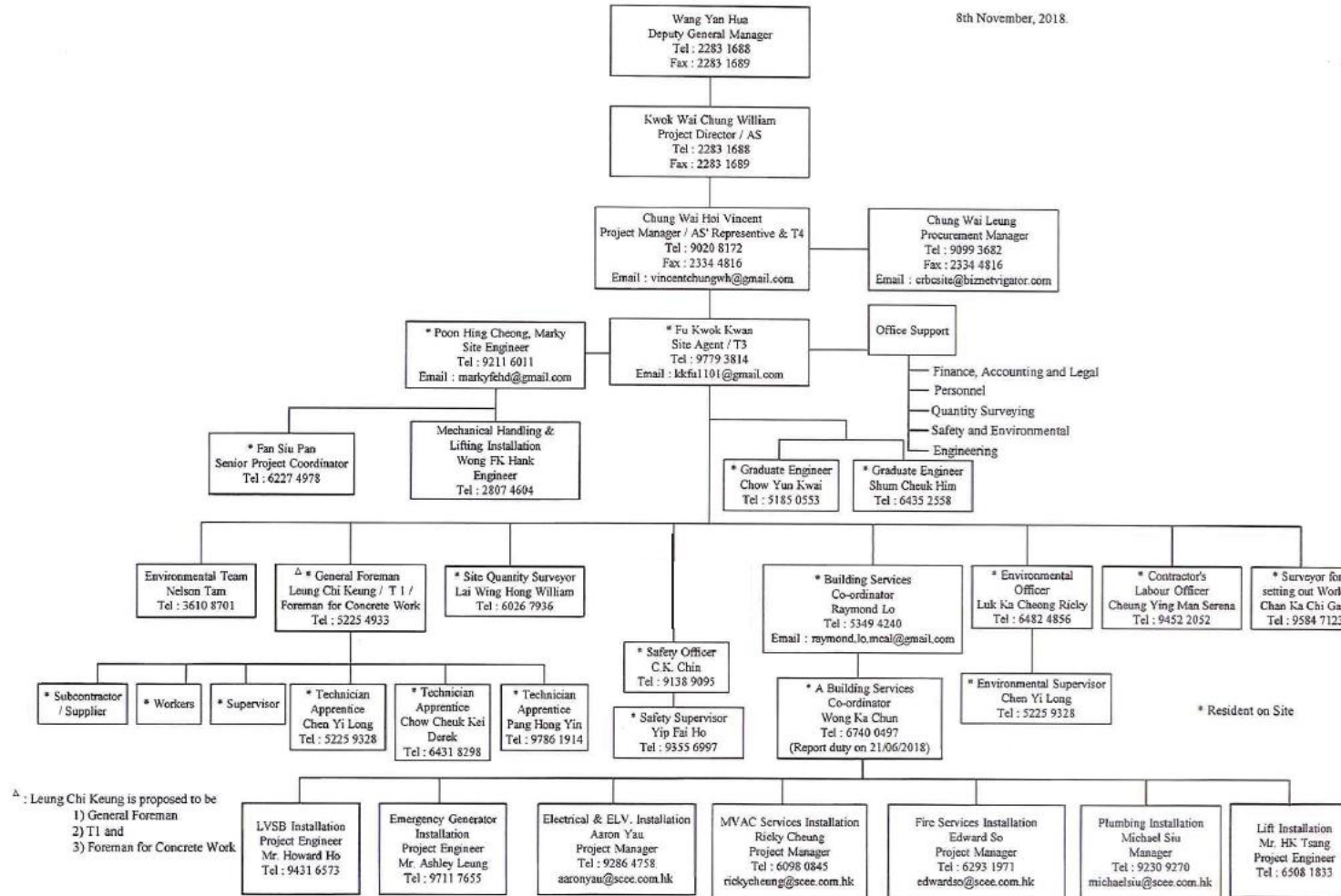
Appendix B Organization Chart





Reprovisioning of FEHD Sai Yee Street Environmental Hygiene Offices-cum-Vehicle Depot at Yen Ming Road, West Kowloon Reclamation Area
Contract No.: SS D505 (Programme No. 182GK)

8th November, 2018.



△ : Leung Chi Keung is proposed to be
 1) General Foreman
 2) T1 and
 3) Foreman for Concrete Work





Appendix C Summary of Environmental Mitigation Measures – Implementation Schedule

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
Air Quality										
4.12.2	2.3.1	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> ● Use of regular watering, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather; ● Use of frequent watering for particularly dusty construction areas close to ASRs; ● Side enclosure and covering of any practicable owing to frequent usage, watering should be applied to aggregate fines; ● Open temporary stockpiles should be avoided or covered. Prevent placing dusty material storage piles near ASRs; ● Tarpaulin covering of all dust vehicle loads transported to, from and between site locations; ● Establishment and use of vehicle wheel and body washing facilities at the exit points of the site; ● Imposition of speed controls for vehicle on unpaved site roads. 8 km/hr is the recommended limit; ● Routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs; ● Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA), if applicable, should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3-sides; and ● Loading, unloading, transfer, handling or storage of large amount of cement or dry PFA should be carried out in a totally enclosed system 	To minimise dust impacts	All works sites	Contractor and Sub-contractors	Air Pollution Control Ordinance		✓		Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
		or facility, and may vent or exhaust should be fitted with the an effective fabric filter or equivalent air pollution control system.								
4.11.4	/	<p>Control of Odour Emission</p> <ul style="list-style-type: none"> 3-sides enclosed washing bays and maintenance workshops, served with mechanical ventilations to maintain all the time with proper negative air pressure. Deodorisation system such as active carbon filters or chemical scrubber (or equivalent) will be applied at the ventilation duct prior to discharging to the atmosphere, having odour removal efficiency of 85% or above at normal operation, and under regular and proper maintenance and replacement. 	To avoid air pollutants and minimal odour from emitting to the adjacent atmosphere	Washing bays and maintenance workshops	FEHD and Depot Designer	EIAO-TM	✓		✓	N/A
4.17.3	2.4.4	Commissioning test requirement should be incorporated in the specification during commissioning period order to ensure the odour removal efficiency (at least 85%) of the proposed odour removal unit.	To avoid air pollutants and minimal odour from emitting to the adjacent atmosphere	Washing bays and maintenance workshops	Depot Designer and Contractor	EIAO-TM	✓	✓		N/A (commissioning test will be conducted in 2019)
4.17.4	2.4.5	Monitoring test on odour removal efficiency of the odour removal unit should be carried out quarterly in the first year of operation. Development of monitoring and investigation plan, as well as work procedure, prior to operation of the unit is recommended.	To ensure and maintain odour removal efficiency of the unit	Washing bays and maintenance workshops	FEHD	EIAO-TM			✓	N/A
Noise										
5.7.3	3.4.2	<p>Selection and Programming of Construction Processes</p> <ul style="list-style-type: none"> Carefully arrange the timing and sequencing of the various construction activities according to the actual site work situation; Limit the quantity of PME to be operated concurrently and their proportion of usage were recommended in the Project and 	To limit the amount of concurrent activities and where applicable, to avoid parallel operation of noisy PME in order to minimise the total noise generated	All works sites	Contractor and Sub-contractors	EIAO, Noise Control Ordinance		✓		Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
		incorporated in the Noise Impact Assessment; <ul style="list-style-type: none"> The proposed quantity of PMEs and their proportion of usage should be confirmed feasible by the Engineer; In the case during school examination, more stringent construction noise criteria should be imposed, the potentially most disruptive construction activities should be avoided, and arranged to be conducted during school holidays as far as practicable. 								Y
5.7.4 to 5.7.6	3.4.5	The use of Sound Power Levels (SWLs) for typical PME provided in the GW-TM and that for equivalent “quiet” plants: <ul style="list-style-type: none"> Loader, wheeled (Back-hoe)Excavator, Tracked Generator Mobile Crane 	To minimise noise impacts	All works sites	Contractor and Sub-contractors	EIAO, Noise Control Ordinance		✓		Y
5.7.7 to 5.7.9	3.4.6	The use of temporary noise barriers if applicable <ul style="list-style-type: none"> Movable barriers with skid footing and a small cantilevered upper portion Noise jacket/muffler Applicable PME with temporary noise barriers: excavator and mobile crane Selection of insulation material: acoustic mats 	To minimise noise impacts	All works sites	Contractor and Sub-contractors	EIAO, Noise Control Ordinance		✓		Y
5.7.10	3.4.7	Implementation of further good site practices: <ul style="list-style-type: none"> Only well-maintained plant should be operated on-site and plants should be operated on-site and plants should be serviced regularly during the construction period; 	To minimise noise impacts	All works sites	Contractor and Sub-contractors	EIAO, Noise Control Ordinance		✓		Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
		<ul style="list-style-type: none"> Mobile plant, if any, should be sited as far from NSRs as possible; Plant known to emit noise strongly in one direction should, wherever possible, be properly oriented so that the noise is directed away from the nearby NSRs; Use of site hoarding as a noise barrier to screen noise at low level NSRs; Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum; and Any material stockpiles and other structures should be effectively utilised, wherever practicable, to screen the noise from on-site construction activities 								Y Y Y Y Y
5.7.11 to 5.7.12	3.4.9	<p>Control on vehicle repair activities</p> <ul style="list-style-type: none"> The Workshop Vehicle Repair Activities should be carried out under the covered area of the Transport Workshop Section on the G/F as the building of FEHD Depot itself provides screening effect to the NSRs The workshop vehicle repair activities should not be carried out during night-time period 	To minimise noise impacts arising from workshop vehicle repair activities	Transport Workshop Section	FEHD	EIAO, Noise Control Ordinance			✓	N/A N/A
5.7.13	3.4.9	Acoustic treatment, such as acoustic louvres, silencers, enclosures could be applied to achieve noise attenuation on the use of MVAC and other Building Service Equipment so that the SWL of the equipment shall not exceed the specified "maximum allowable SWL" in various plant rooms.	To minimise noise impacts due to the MVAC installations	Plant Rooms	FEHD and Depot Designer	EIAO, Noise Control Ordinance	✓		✓	N/A





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status	
							D	C	O		
Water Quality and Sewerage											
6.10.2	4.4.1	<p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures with best management practices should include the following:</p> <ul style="list-style-type: none"> At the establishment of works site, perimeter cut-off drains to direct off-site water around the Site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels) both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided to divert the stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction; Dikes or embankments for flood protection should be implemented around the boundaries of earthworks areas. Temporary ditches should be provided to facilitate the run-off discharge into an appropriate watercourse, through a silt / sediment trap. Silt / sediment traps should also be incorporated in the permanent drainage channels to enhance deposition rates; The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt / sand traps should be 5 minutes under maximum flow conditions. The sizes may vary depending upon the flow rate, but for a flow rate of 0.1m³/s, a sedimentation basin of 30m³ would be required and for a flow rate of 0.5m³/s the basin would be 150m³. The detailed design of the sand / silt traps should be undertaken by the Contractor prior to the commencement of construction; The construction works should be programmed to minimise surface excavation works during rainy seasons (April to September), as soon as possible after the earthworks have been completed, or 	To control water quality impact from construction site runoff	All works sites	Contractor and Sub-contractors	Water Pollution Control Ordinance		✓			Y
										Y	
										Y	
										Y	





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status		
							D	C	O			
		<p>alternatively, within 14 days of the cessation of earthworks where practicable. 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;</p> <ul style="list-style-type: none"> The overall slope of works sites should be kept to a minimum to reduce the erosive potential of surface water flows, and all trafficked areas and access roads should be protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during the prolonged periods of inclement weather and the reduction of surface sheet flows; All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure their proper and efficient operation at all times particularly following rainstorms. Deposited silts and grits should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet season is inevitable, they should be dug and backfilled in short sections wherever practicable. The water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silts or debris into any drainage system; 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 run-off being directed into foul sewers; 								Y		
												Y
												Y
												Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status		
							D	C	O			
		<ul style="list-style-type: none"> ● Precautions to be taken at any time of the year when rainstorms are likely actions to be taken when a rainstorm is imminent or forecasted and 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 run-off during storm events; ● All vehicles and plant should be cleaned before leaving the Site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities / bay should be provided at the exit of the Site where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basic to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-washing bay to prevent vehicle tracking of soil and silty water to public roads and drains; ● Oil interceptors should be provided in the drainage system downstream of any oil / fuel pollution sources. 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 oil interceptors to prevent flushing during heavy rain; ● The construction solid waste, debris and rubbish on-site should be collected handled and disposed of properly to avoid causing any water quality impacts; and ● 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 the nearby WSRs. 								Y		
												Y
												Y
												Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
6.10.4	4.4.1	<p>Control of Effluent Discharge from the Site</p> <ul style="list-style-type: none"> ● Application to the EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. ● All the run-off and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the Technical Memorandum. ● Minimum distance of 100m should be maintained between the discharge points of construction site effluent and the existing seawater intakes. ● No new effluent discharges in nearby typhoon shelters should be allowed. ● The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., would minimise water consumption and reduce the effluent discharge volume. 	To control water quality impact from effluent discharge from construction site	All work sites	Contractor and Sub-contractors	Water Pollution Control Ordinance		✓		Y Y Y Y Y
6.10.5	4.4.1	Portable chemical toilets and sewage holding tanks are recommended for the handling of 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.	To control water quality impact from sewage of workforce	All work sites	Contractor and sub-contractors	Water Pollution Control Ordinance Waste Disposal (Chemical Waste) (General) Regulation		✓		Y
6.10.7	4.4.1	Any maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	To control water quality impact from accidental chemical spillage	All work sites	Contractor and Sub-contractors	Water Pollution Control Ordinance, Waste Disposal (Chemical Waste) (General Regulation		✓		Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
6.10.8	4.4.1	All sewage arising from the Project should be collected and diverted to the public sewerage system via proper connections to minimise water quality impact from the operation of the Project and ensure compliance with Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Water under the WPCO.	To control water quality impact from sewage effluent discharge	The Offices-cum-Vehicle Depot	FEHD	Water Pollution Control Ordinance			✓	N/A
6.10.9 and 6.10.10	4.4.1	To prevent the potential contaminated wastewater from entering the existing public sewerage systems, run-offs from the covered areas including the vehicle washing bays and vehicle parking space will be properly treated prior to the discharge into the sewerage system. The treated effluent for discharging into the public sewerage system should comply with the effluent standards as stated in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters under the WPCO.	To control water quality impact from sewage effluent discharge	The Offices-cum-Vehicle Depot	FEHD	Water Pollution Control Ordinance			✓	N/A
6.10.11	4.4.1	There is a need to apply to the EPD for a discharge licence for discharge of the operational effluent from the Project under the WPCO. The discharge quality must meet the requirements specified in the discharge licence.	To control water quality impact from sewage effluent discharge	The Offices-cum-Vehicle Depot	FEHD	Water Pollution Control Ordinance			✓	N/A





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
Waste Management and Land Contamination										
7.5.17	5.12	<p>The requirements as stipulated in the ETWB TC(W) No. 19/2005 “Environmental Management on Construction Sites” and the other relevant guidelines should be included in the Particular Specification for the Contractor as appropriate.</p> <p>Contractor should be required to implement the recommended waste management measures through establishing a Waste Management Plan (WMP) in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction. The WMP should be submitted to the Project/Site Engineer prior to the construction commencement of the Project for approval and include the followings:</p> <ul style="list-style-type: none"> ● Waste management policy; ● Record of generated waste; ● Waste reduction target; ● Waste reduction programme; ● Role and responsibility of waste management team; ● Benefit of waste management; ● Analysis of waste materials; ● Reuse, recycling and disposal plans; ● Transportation process of waste products; and ● Monitoring and action plan. <p>The waste management hierarchy below should be strictly followed. This hierarchy should be adopted to evaluate the waste management options in</p>	To keep trace of the generation minimization, reuse and disposal of C&D materials	All works sites	FEHD and Depot Designer; and Contractor and Sub-contractors	ETWB TC(W) No. 19/2005	✓	✓		Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
		order to minimize the extent of waste reduction and cost reduction. The records of quantities of waste generated, recycled and disposed (location) should be properly documented.								
7.6.1	5.2.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimize the C&D Materials arising. The use of more durable formwork or plastic facing for construction works should also be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should be carefully planned in order to avoid over-ordering and wastage. The Contractor should recycle as many C&D materials as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	To minimize, reuse and disposal of C&D materials	All works sites	Contractor and Sub-contractors	ETWB TC(W) No. 19/2005		✓		Y
7.5.19 to 7.5.21	5.2.1	A trip-ticket system should be established in accordance with DevB TC(W) No. 6/2010 and Waste Disposal (Charges for Disposal of Construction Waste) Regulation in order to monitor the disposal of inert C&D Materials at public fill and the remaining C&D Waste to landfills, and control fly-tipping. A trip-ticket system should be included as one of the contractual requirements and implemented by the Contractor. The Project/Site Engineer should regularly audit the effectiveness of the system. A recording system for the amount of waste generated, recycled and disposed (locations) should be established. The future Contractor should also provide proper training to workers regarding the appropriate concepts of site cleanliness and waste management procedures, e.g. waste reduction, reuse and recycling all the time.	To monitor disposal of waste and control fly-tipping	All work sites	Contractor and Sub-contractors	DevB TC(W) No. 6/2010		✓		Y
7.6.1	5.2.1	Recommendations for good site practices:	To implement good site practice for handling,	All works sites	Contractor and Sub-contractors	Waste Disposal Ordinance, Land		✓		





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
		<ul style="list-style-type: none"> All waste containers shall be in a secure area on hardstanding. Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures. Provision of sufficient waste disposal points and regular collection of waste. Appropriate of sufficient waste disposal points and regular collection of waste by either covering trucks or by transporting wastes in enclosed containers. Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Separation of chemical wastes for special handling and appropriate treatment. The site and surroundings shall be kept tidy and litter free. No waste shall be burnt on-site Make provisions in contract documents to allow and promote the use of recycled aggregates where appropriate. Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads. 	sorting reuse and recycling of wastes			(Miscellaneous Provisions) Ordinance, ETWB TC(W) No. 31/2004				Y Y Y Y Y Y Y Y Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
7.6.1	5.2.1	Recommendations for waste reduction measures: <ul style="list-style-type: none"> ● Sorting of demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.). ● Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. ● Encourage collection of aluminum cans by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the workforce. ● Proper storage and site practices to minimize the potential for damage or contamination of construction materials. ● Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste. 	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste	All works sites	Contractor and Sub-contractors	Waste Disposal Ordinance, Land (Miscellaneous Provisions) Ordinance		✓		Y Y Y Y
7.6.1	5.2.1	Waste haulier must hold a valid permit for the collection of waste as stipulated in their permits, Removal of waste should be done in a timely manner.	To implement on-site facilitating reuse and recycling of materials as well as proper disposal of waste	All works sites	Contractor and Sub-contractors	Waste Disposal Ordinance, Land (Miscellaneous Provisions) Ordinance		✓		Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
6.10.6 and 7.6.1	5.2.1	<p>Measures for chemical waste during construction:</p> <p>The Contract should register with the EPD as chemical waste producers when chemical waste is produced. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste as follows:</p> <ul style="list-style-type: none"> ● Register as a Chemical Waste Producers to the EPD; ● Suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; ● Having a capacity of <450L unless the specifications have been approved by the EPD; ● Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations; ● Clearly labelled and used solely for the storage of chemical wastes; ● Enclosed with at least 3 sides; ● Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container of 20% by volume of the chemical waste stored in the area, whichever is greatest; ● Adequate ventilation; ● Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and ● Incompatible materials are adequately separated. 	To properly store the chemical waste within works sites and works areas	All works sites	Contractor and Sub-contractors	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes		✓		Y Y Y Y Y Y Y Y Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
7.6.1	5.2.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilizing them. Night soil should be regularly collected by licensed collectors.	To ensure proper disposal of sewage sludge	All works sites	Main Contractor	-		✓		Y
7.6.1	5.2.1	Chemical waste during the operation of the workshop <ul style="list-style-type: none"> The requirements stipulated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes should be followed in handling of chemical waste as in construction phase. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which would be collected by a licensed collector to a licensed facility for final treatment and disposal. The recommendations proposed for the mitigation of impacts from chemical waste in construction phase should also be followed. 	To avoid environmental impacts in handling, storage and disposal of chemical waste	The Offices-cum-Vehicle Depot	FEHD	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, Waste Disposal (Chemical Waste) (General) Regulation		✓	N/A N/A N/A	
7.6.1	5.2.1	General refuse during the operation of the workshop: <ul style="list-style-type: none"> Provide recycling bins at designated areas for proper recycling of papers, aluminum cans and plastics bottles Separation from other waste types and collected by licensed collectors at daily basis to minimize the potential impacts from odour and vermin. 	To separate the general refuse from other waste types and proper disposal of the refuse	The Offices-cum-Vehicle Depot	FEHD	-		✓	N/A N/A	





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
7.8	5.2.1	To implement the Preventive and Precautionary Plan <ul style="list-style-type: none"> Storage of Chemicals and Chemical Wastes Emergency Procedures Spillage/leakage of Liquid Chemical/Waste at Storage Area Spillage/Leakage at Repairing and Maintenance Areas Record of Incidents Procedures for Disposal of Wastes 	To avoid land contamination	The Offices-cum-Vehicle Depot	FEHD	-			✓	N/A N/A N/A N/A N/A N/A
Landscape and Visual										
8.8.4	6.2.3	Proper Control of Construction Activities <ul style="list-style-type: none"> Cautiously arrangement of the operation or placement of the construction plant and machinery, and the transportation or storage of material to reduce and confined the potential adverse impacts in certain areas in the Site. Minimise the height of temporary structures such as hoardings and site offices, and restore the temporary construction site locally to the existing condition in order to minimise any negative impacts and associated uncomfortable views. Check the site boundaries regularly to ensure the working area does not exceed and causes further damage to the surrounding area. In case of nighttime construction is conducted, control of nighttime lighting on the works areas to prevent undesired light pollution to the surrounding area, such as viewers from roads, should be implemented. 	To minimise the disturbances to VSRs	All works sites	Contractor and Sub-contractors	-		✓		Y Y Y Y





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
8.8.5 to 8.8.6	6.2.4 to 6.2.5	Temporary Landscape Treatment <ul style="list-style-type: none"> ● Provision of temporary landscape treatment during construction phase, such as temporary planting around the site office, applying aesthetic treatments on site hoardings and/or façade of site office ● Provision of green roof of site office 	To lessen the visual disturbance to the surroundings arising from construction activities	All works sites	Contractor and Sub-contractors	-		✓		Y Y
8.8.7	6.2.6	Tree Preservations <ul style="list-style-type: none"> ● Erection of fencing around the trees ● Avoidance of placing any construction materials close to the trees ● Apply mulching beyond root collar ● Conduct visual checking/monitoring in regular basis 	To reduce the significant adverse impacts to the visual quality and trees	All works sites	Contractor and Sub-contractors	-		✓		Y Y Y
8.8.8	6.2.8	Proper arrangement of materials for operational activities, including vehicle repair, maintenance, operation and parking, carried out within the office-cum-vehicle depot building.	To reduce the significant adverse impacts to the visual quality of the VSRs	The Offices-cum-Vehicle Depot building and car parks	FEHD	-			✓	N/A
8.8.9 to 8.8.14	6.2.9 to 6.2.14	Landscape design <ul style="list-style-type: none"> ● Ground Floor Planting – Pedestrian Zone ● Vertical Greening ● Roof Gardens ● Hard Landscape Features 	To soften the hard concrete structure of the proposed depot-cum0office building; To enable more functional outdoor space to accommodate a range of passive uses; To enhance the aesthetics of views by the staff working in the Depot; and to create an inviting and comfortable	The Offices-cum-Vehicle Depot	FEHD and its Designer	Annex 10 of EIAO-TM, ETWB TC(W) No. 3/2008	✓		✓	N/A N/A N/A N/A





EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
							D	C	O	
		Planting of these trees should be completed before the completion of construction work of the Project. Approval on tree felling would be obtained from the relevant government departments including Lands Department. If it is required, monitoring of the compensatory planting after establishment should be conducted according to the tree felling approval conditions as required by the approval authorities.	landscape							N/A

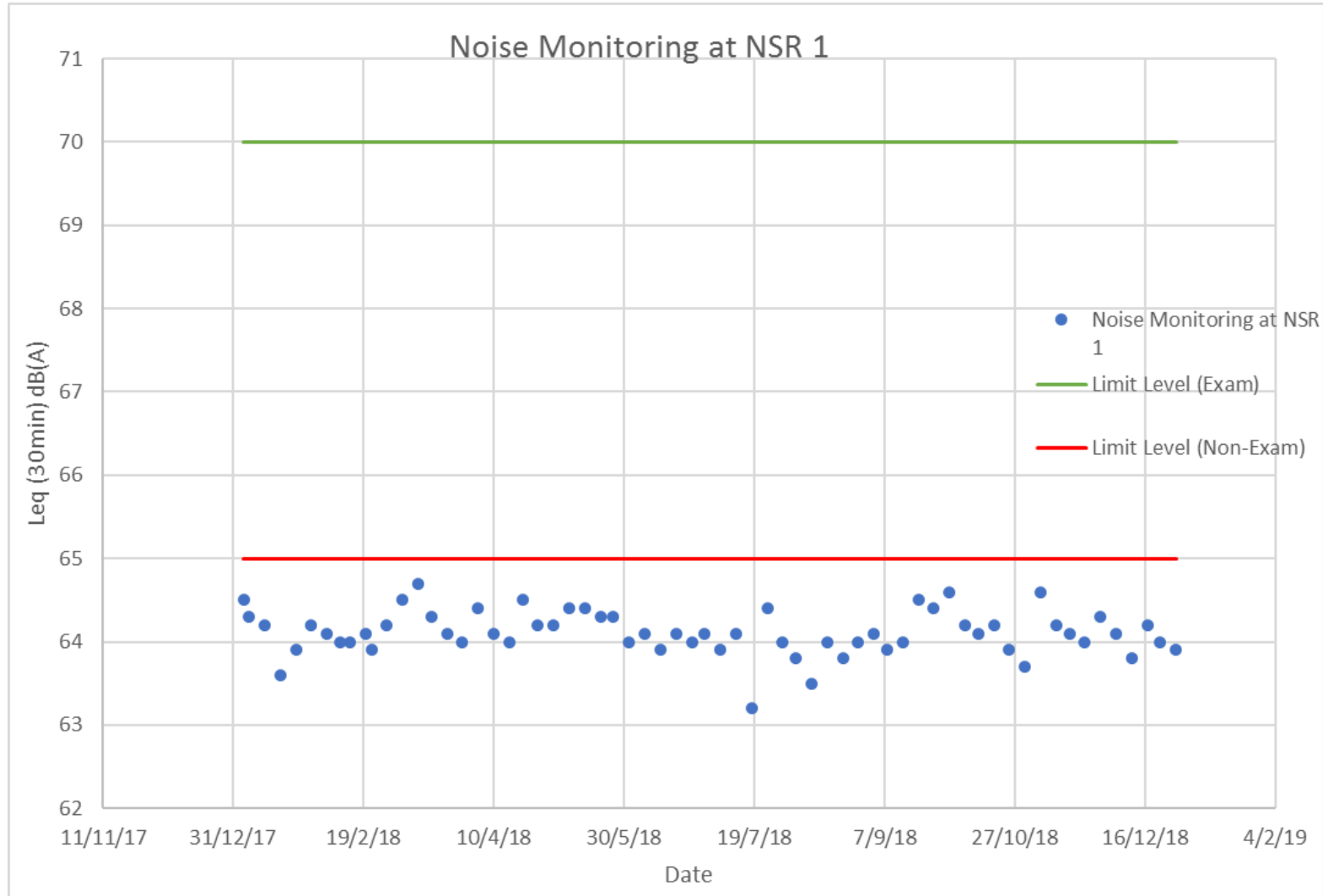
Remarks:

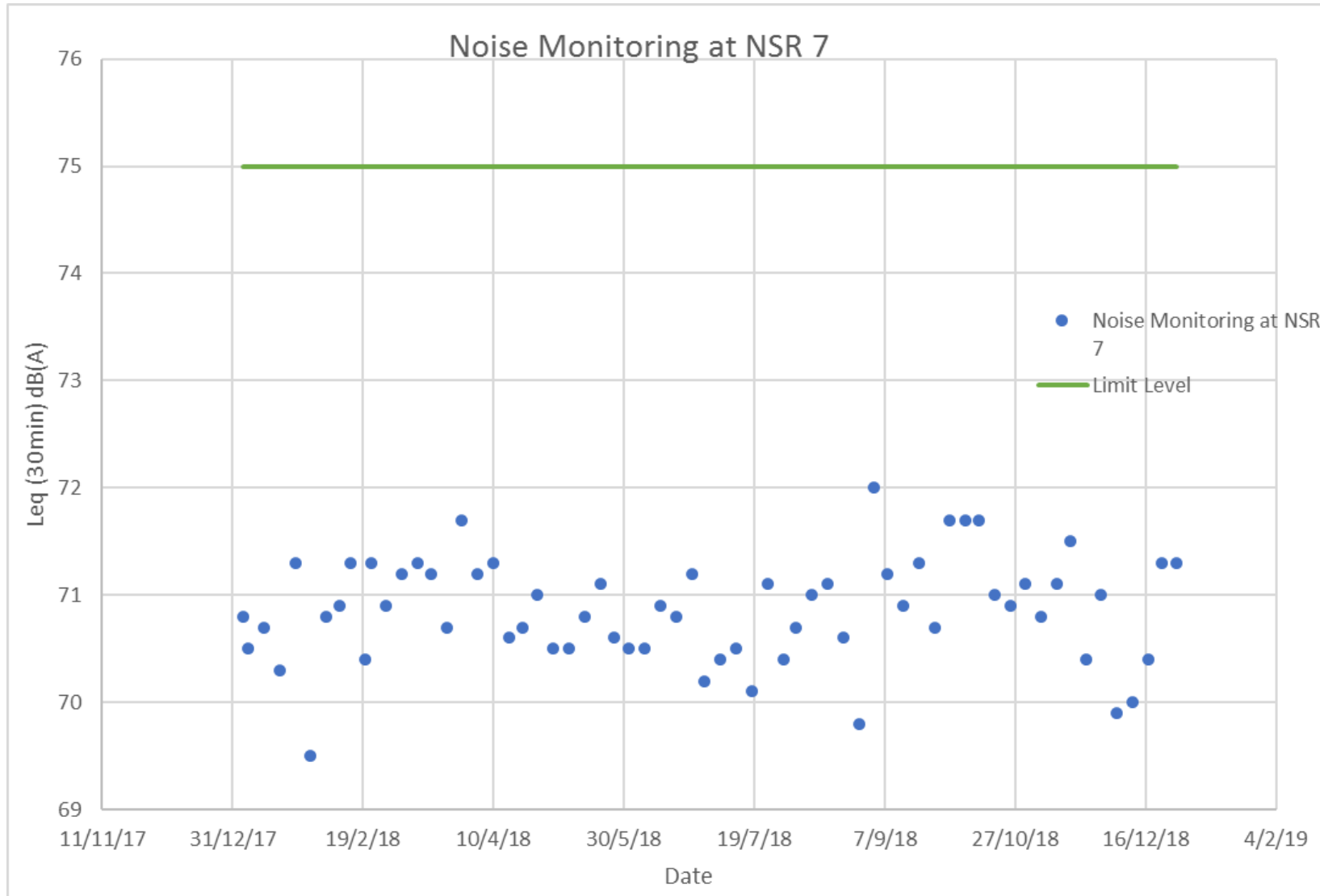
- Y Implemented mitigation measures in the reporting period
- N/A Not applicable in the reporting period
- X Non-compliance of mitigation measure





Appendix D Graphical Plot of Noise Monitoring Results at NSR1 and NSR7







Appendix E Summary of Waste Flow Table in 2018

**MA P3 Construction Waste Management Plan
MA 11 Construction Waste Reduction**

Project: FEHD Sai Yee Street Environmental Hygiene Offices-cum-vehicle Depot, Yen Ming Road, West Kowloon Reclamation Area
Record by: China Road and Bridge Corporation
Year of Record: 2018

Overall Summary Waste Flow Table

DD.MM.YY	Total Quantity Generated	Total Quantity Generated (Excluded Excavated Material)	Actual Quantities of Inert C&D Materials Generated Monthly									Actual Quantities of C&D Materials Generated Monthly					
			Excavated Materials			Non-excavated Materials						Metals (steel bar / metal strip) ⁽¹⁾	Metals (aluminum can) ⁽¹⁾	Paper / cardboard packaging ⁽¹⁾	Plastics ^{(1) & (4)}	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
			Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Landfill	Disposed in Sorting Facilities						
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	
	a1	a2	b	b	b	c	d	e	f	g	h	i	j	k	l	m	n
Jan-18	286.71	74.17	212.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.17
Feb-18	96.60	72.29	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.29
Mar-18	254.50	132.29	122.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132.29
Apr-18	163.58	123.87	39.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	123.87
May-18	382.01	257.18	124.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	257.18
Jun-18	393.51	229.20	164.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	229.20
Jul-18	398.20	255.05	143.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	255.05
Aug-18	1822.02	220.44	1601.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	220.44
Sep-18	781.30	170.83	610.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	170.83
Oct-18	906.88	242.15	664.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	242.15
Nov-18	723.24	154.12	569.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.69	0.00	0.00	0.00	0.00	154.12
Dec-18	459.53	90.50	369.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.50
Total	6668.08	2022.09	4645.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.69	0.00	0.00	0.00	0.00	2018.40

Total C&D waste generated 6668.08 tonnes a1=b+c+d+e+f+g+h+i+j+k+l+m+n
 Total C&D waste generated (excluded excavated materials) 2022.09 tonne a2=c+d+e+f+g+h+i+j+k+l+m+n
 Total recycled C&D waste 3.69 tonne a3=c+d+e+i+j+k+l
 % of recycled C&D waste for BEAM Plus MA11 0.18% % a4=a3/a2 x 100%

- Notes:
- (1) metal, paper & plastic were collected by recycler
 - (2) The performance target of waste recycling are specified in the Contract.
 - (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
 - (5) Broken concrete for recycling into aggregates.
 - (6) Excavated materials/waste will NOT be considered as part of construction waste. It should be excluded in the calculation.
 - (7) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.





Appendix F Section 3.3.5 of EM&A Manual



3.3.3 The noise measurements should not be conducted in the presence of fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed should be checked with a portable wind speed meter capable of measuring wind speeds in m/s.

3.3.4 The ET is responsible for the provision of the monitoring equipment and should ensure that sufficient noise measuring equipment and associated instrumentation are available for conducting the baseline monitoring, regular impact monitoring and ad-hoc monitoring. All equipment and associated instrumentation should be labelled clearly.

Monitoring Locations

3.3.5 According to the assessment results provided in the EIA report, construction noise monitoring should be conducted at designated locations as listed in **Table 3-2** and shown in **Figure 3-2**.

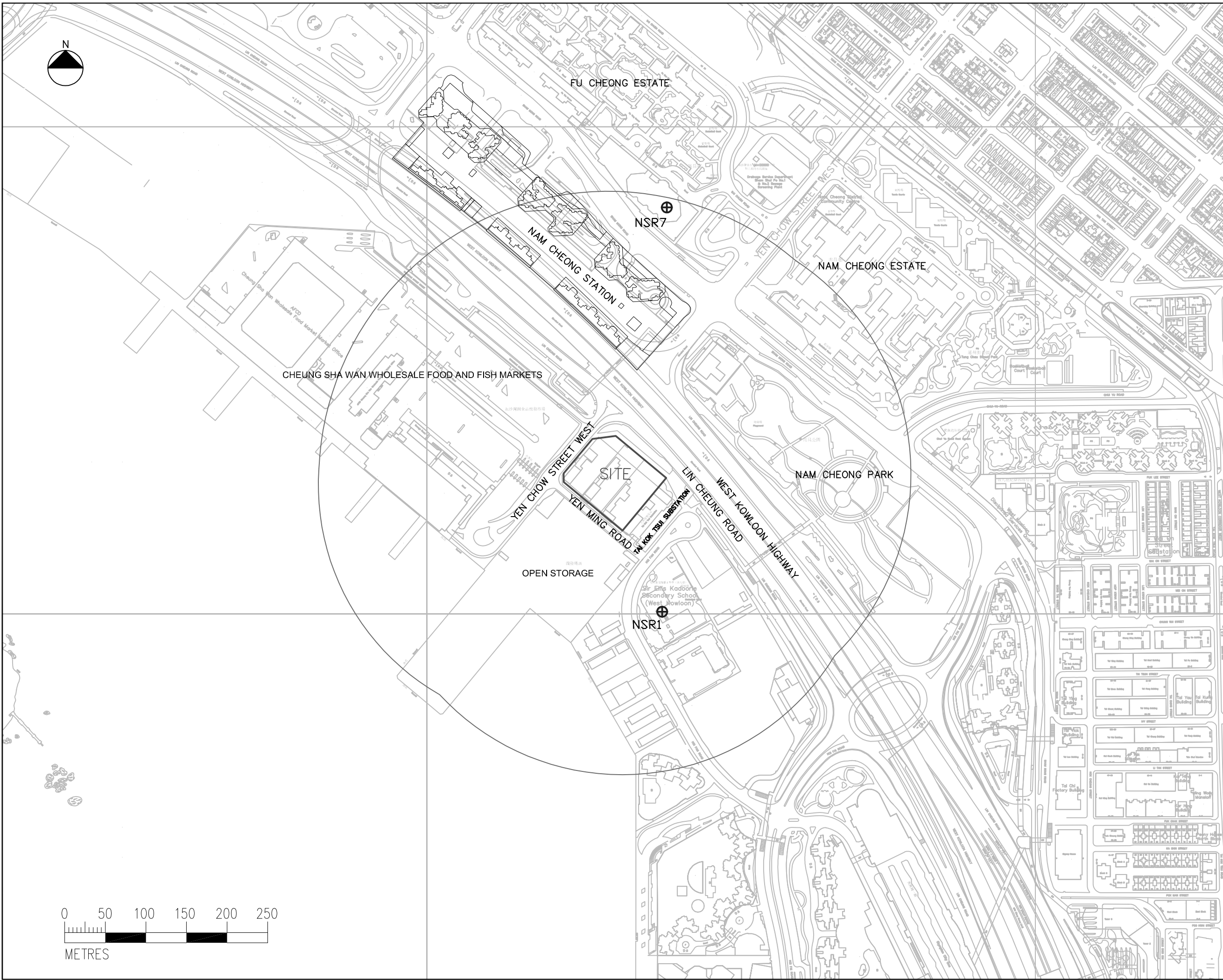
Table 3-2 Representative Noise Sensitive Receivers Identified for Construction Noise Impact Monitoring

NSR	Monitoring Location
1	Sir Ellis Kadorie Secondary School (West Kowloon)
7	Fu Cheong Estate Fu Yun House

3.3.6 If changes to the monitoring locations of the NSRs are considered necessary, the ET should propose alternative monitoring locations and seek the agreement from the IEC and EPD on such proposal. The alternative locations should be selected based on the following criteria:

- Close to the major construction works activities that are likely to have noise impacts;
- Close to the NSRs as defined in the EIAO-TM; and
- Ensure minimal disturbance and safe working condition to the occupants during the monitoring in the vicinity of the NSRs.

3.3.7 The monitoring stations should normally be at a point 1m from the exterior of the facade of the NSR and be at a position 1.2m above ground. If there is difficulty in accessing to the normal monitoring position, an alternative position should be chosen, and a correction to the measurement results should be made. For reference, a correction of +3dB(A) should be made to the free-field measurements. The ETL should seek for the agreement with the IEC and EPD on the alternative monitoring position and corrections adopted. Once the positions for the monitoring stations are chosen, the baseline and impact monitoring should be carried out at the same positions.



NOTE:
COORDINATES ARE RELATED TO
HONG KONG METRIC GRID (1980)

- LEGEND:
- SITE BOUNDARY
 - ⊕ NSR
REPRESENTATIVE NOISE SENSITIVE RECEIVERS FOR CONSTRUCTION NOISE IMPACT MONITORING
 - 300M FROM SITE BOUNDARY

Rev.	Date	Description	Drawn	Checked
Department (Project Proponent) 部門 (項目倡議人):				
 Food and Environmental Hygiene Department 食物環境衛生署				
Department (Works) 部門 (工程):				
 Architectural Services Department 建築署				
Lead Architect (Consultancy Agreement No. 9AX 034): 建築顧問 (顧問合約編號 9AX 034)				
 P&T Architects and Engineers Ltd 巴馬丹拿建築及工程師有限公司				
Project Title 項目名稱: REPROVISIONING OF FEHD SAI YEE STREET ENVIRONMENTAL HYGIENE OFFICES-CUM-VEHICLE DEPOT AT YEN MING ROAD, WEST KOWLOON RECLAMATION AREA 在西九龍填海區欽明路重置食物環境衛生署洗衣街環境衛生辦事處暨車房				
Drawing Title 圖則名稱: Designated Location for Construction Noise Monitoring				
Drawing No. 圖則編號: Figure 3-2				
Designed 設計: KKK	Drawn 繪圖: WTK	Checked 校核: ICWR	Scale 比例: AS SHOWN	
Approved 批准: HTMI	Date 日期: JUN 2013	Status 現況: FINAL		

URS URS Hong Kong Ltd



Appendix G Section 6.2.6 of EM&A Manual



the works areas to prevent undesired light pollution to the surrounding area, such as viewers from roads, should be implemented.

Temporary Landscape Treatment

- 6.2.4 Provision of temporary landscape treatment during construction phase, such as temporary planting around the site office, applying aesthetic treatments on site hoardings and/or façade of site office, as well as providing green roof of site office, would lessen the visual disturbance to the surroundings arising from construction activities.
- 6.2.5 Examples of aesthetic treatments on site hoardings and green roof of site office can be referred to **Figure 6-1**.

Tree Preservation

- 6.2.6 There will be 1 nos. of tree to be retained on the site and thus the measures should be implemented during construction phase, such as erection of fencing around the trees avoidance of placing any construction materials close to the trees, apply mulching beyond root collar and also conduct visual checking/ monitoring in regular basis.

- 6.2.7 The following mitigation measure should be proposed during the operation phase:

Proper Arrangement of Materials during Operation

- 6.2.8 The majority of operational activities, including vehicle repair, maintenance, operation and parking, will be carried out within the office-cum-vehicle depot building. Some vehicles parking will occur in the uncovered car parks facing Lin Cheong Road. Given that most of the vehicles at the said uncovered car parks are light vehicles such as staff shuttle buses, 4-seats cars, instead of Refuse Collection Vehicles, it will not cause any significant adverse impacts to the visual quality of the VSRs.

Landscape Design

- 6.2.9 In order to soften the hard concrete structure of the proposed office-cum-vehicle depot building, ground floor planting, façade greening and roof gardens have been incorporated into the landscape design. The design enables more functional outdoor space to accommodate a range of passive uses as well as to enhance the aesthetics of views by the staff working in the building. Soft and hard landscape areas are arranged in a relaxed, contemporary style to create an inviting and comfortable landscape.

Ground Floor Planting – Pedestrian Zone

- 6.2.10 Tree planting with upright columnar form are proposed along the north fence wall to soften the edges and provide visual interest at the streetscape level and to maximise the amount of green space accessible to the public. It also enhances the streetscape amenity for pedestrians passing by from the MTR station, and enables screening of views from VSRs into vehicle maintenance depot. Similar trees planting will be taken along the west building façade to soften its edges and to enhance the main entrance. Feature trees are proposed at the northwest and southwest comers of the building to



Appendix H Section 6.2.9 to 6.2.13 of EM&A Manual



the works areas to prevent undesired light pollution to the surrounding area, such as viewers from roads, should be implemented.

Temporary Landscape Treatment

- 6.2.4 Provision of temporary landscape treatment during construction phase, such as temporary planting around the site office, applying aesthetic treatments on site hoardings and/or façade of site office, as well as providing green roof of site office, would lessen the visual disturbance to the surroundings arising from construction activities.
- 6.2.5 Examples of aesthetic treatments on site hoardings and green roof of site office can be referred to **Figure 6-1**.

Tree Preservation

- 6.2.6 There will be 1 nos. of tree to be retained on the site and thus the measures should be implemented during construction phase, such as erection of fencing around the trees avoidance of placing any construction materials close to the trees, apply mulching beyond root collar and also conduct visual checking/ monitoring in regular basis.
- 6.2.7 The following mitigation measure should be proposed during the operation phase:

Proper Arrangement of Materials during Operation

- 6.2.8 The majority of operational activities, including vehicle repair, maintenance, operation and parking, will be carried out within the office-cum-vehicle depot building. Some vehicles parking will occur in the uncovered car parks facing Lin Cheong Road. Given that most of the vehicles at the said uncovered car parks are light vehicles such as staff shuttle buses, 4-seats cars, instead of Refuse Collection Vehicles, it will not cause any significant adverse impacts to the visual quality of the VSRs.

Landscape Design

- 6.2.9 In order to soften the hard concrete structure of the proposed office-cum-vehicle depot building, ground floor planting, façade greening and roof gardens have been incorporated into the landscape design. The design enables more functional outdoor space to accommodate a range of passive uses as well as to enhance the aesthetics of views by the staff working in the building. Soft and hard landscape areas are arranged in a relaxed, contemporary style to create an inviting and comfortable landscape.

Ground Floor Planting – Pedestrian Zone

- 6.2.10 Tree planting with upright columnar form are proposed along the north fence wall to soften the edges and provide visual interest at the streetscape level and to maximise the amount of green space accessible to the public. It also enhances the streetscape amenity for pedestrians passing by from the MTR station, and enables screening of views from VSRs into vehicle maintenance depot. Similar trees planting will be taken along the west building façade to soften its edges and to enhance the main entrance. Feature trees are proposed at the northwest and southwest comers of the building to

provide a strong vertical visual highlight.

- 6.2.11 An approximately 630m² of tree and shrub planting and groundcovers are proposed for pedestrian zone planting. A mix of native and ornamental species is proposed in **Appendix 6-1**.

Vertical Greening

- 6.2.12 Extensive vertical greening with area of about 330m² would be introduced to the Depot to screen views of the parking structure and enhance the visual amenity of the building facades. Climbing plants, such as *Lonicera japonica*, *Pyrostegia venusta*, *Quisqualis indica*, *Tristellateia australasiae*, are recommended to maximize the coverage and screening of parking levels. Planters located on each level of parking will provide sufficient space for the climbers to spread across grills incorporated into the architectural facades.

Roof Gardens

- 6.2.13 A multi-layered landscape is created using varying levels of planting, paving and landscape features in order to complement the strong architectural lines. Trees, shrubs and groundcovers with different textures, colours, and fragrances provide a rich overlay to the terraces providing year round visual interest for users of the roof landscape as well as for those viewing the roof garden from their workspaces. An area of about 1,400m² of shrub species are proposed to be provided either in built-in planters or large feature pots. Trees will be planted either in planters or in ornamental pots. A mix of native and ornamental shrubs and groundcovers will be planted to articulate the spatial arrangements as well as to further add to the visual amenity. A mix of local natural stone materials and recycled products will be explored for the paving and landscape features for both the pedestrian and roof areas. Recommended tree and shrub species are listed in **Appendix 6-1**.

Hard Landscape Features

- 6.2.14 Other than the soft landscape, hard landscape features such as natural locally materials and recycled products for paving, sitting out areas, as well as vertical green fence wall along existing footpath on Lin Cheung Road would be explored provide contemporary landscape for users. This improves the visual quality of the office interior and exterior spaces and integrates the themes on both soft and hard landscape characters. Examples of landscape finishes can be referred to **Appendix 6-2**.
- 6.2.15 **Appendix 6-3** shows the conceptual master landscape design for this Project.
- 6.2.16 In the event of complaints or non-compliances, the ET, Architect's Representative and Contractor should review the effectiveness of these mitigation measures, design alternatives or additional mitigation measures as appropriate. The Contractor should propose the corrective action to the Architect's Representative for approval, and implement them accordingly.

Appendix 6-1

List of Recommended Species

Pedestrian Zone

Tree Species suitable for Pedestrian Zone Planting	
Proposed Number = 26	
<i>Ailanthus fordii</i> (Ailanthus)* <i>Bauhinia purpurea</i> (Hong Kong orchid tree)* <i>Cassia surattensis</i> (Sunshine Tree) <i>Grevillea robusta</i> (Silky Oak)	<i>Melaleuca quinquenervia</i> (Paper-bark tree) <i>Plumeria rubra</i> (Red Frangipani)* <i>Terminalia mantaly</i> (Madagascar Almond)*

* Denotes species recommended in the Sham Shui Po Greening Master Plan

Shrub Species suitable for Pedestrian Zone Planting	
Total Area = 627.4m ²	
<i>Alpinia zerumbet</i> 'Variegata'* <i>Calliandra haematocephala</i> * <i>Canna indica</i> * <i>Gordonia axillaris</i> * <i>Grevillea banksii</i> * <i>Ixora chinensis</i> * <i>Juniperus chinensis</i> * <i>Lantana camara</i> 'Flava'*	<i>Ligustrum sinense</i> * <i>Melastoma candidum</i> * <i>Michelia figo</i> * <i>Murraya paniculata</i> * <i>Phyllanthus myrtifolius</i> * <i>Rhododendron pulchrum</i> * <i>Syngonium podophyllum</i> *

* Denotes species recommended in the Sham Shui Po Greening Master Plan

Green Roof

Tree/Large Shrub Species suitable for Green Roof Planting	
Proposed Number = 22	
<i>Cassia surattensis</i> (Sunshine Tree) <i>Lagerstroemia indica</i> (Crape-myrtle)	<i>Osmanthus fragrans</i> (Sweet Osmanthus) <i>Plumeria rubra</i> (Red Frangipani)*

* Denotes species recommended in the Sham Shui Po Greening Master Plan

Shrub/Groundcover Species suitable for Green Roof Planting	
Total Area = 1423.7m ²	
<i>Alpinia zerumbet</i> 'Variegata'* <i>Asparagus densiflorus</i> 'Sprengeri' <i>Belamcanda chinensis</i> <i>Calliandra haematocephala</i> * <i>Canna indica</i> * <i>Crinum asiaticum</i> var. <i>sinicum</i> <i>Cuphea hyssopifolia</i> <i>Duranta erecta</i> <i>Gordonia axillaris</i> *	<i>Lantana montevidensis</i> <i>Leucophyllum frutescens</i> <i>Ligustrum sinense</i> * <i>Melastoma candidum</i> * <i>Michelia figo</i> * <i>Murraya paniculata</i> * <i>Phyllanthus myrtifolius</i> * <i>Pittosporum tobira</i> <i>Portulaca grandiflora</i>

<i>Grevillea banksii</i> * <i>Hymenocallis littoralis</i> <i>Ixora chinensis</i> * <i>Juniperus chinensis</i> * <i>Lagerstroemia indica</i> <i>Lantana camara</i> 'Flava'*	<i>Rhaphiolepis indica</i> <i>Rhododendron pulchrum</i> * <i>Rhodomyrtus tomentosa</i> <i>Scaevola taccada</i> <i>Schefflera arboricola</i> 'Variegata' <i>Syngonium podophyllum</i> * <i>Tradescantia pallida</i>
---	--

* Denotes species recommended in the Sham Shui Po Greening Master Plan

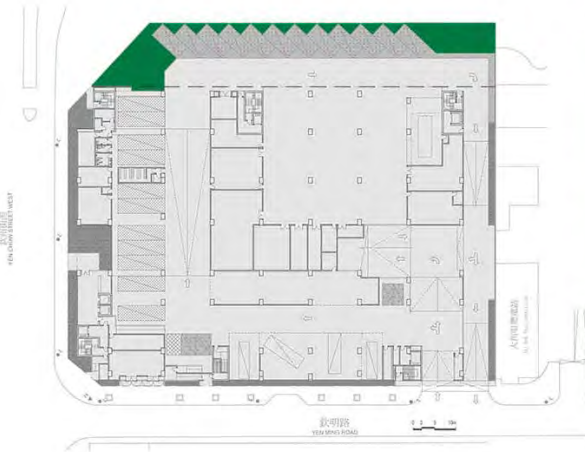
Vertical Greening

Climber Species suitable for Vertical Greening Planting	
<i>Lonicera japonica</i> <i>Pyrostegia venusta</i>	<i>Quisqualis indica</i> <i>Tristellateia australasiae</i>

* Denotes species recommended in the Sham Shui Po Greening Master Plan

2.0 Architectural Design / Landscape Design

1. Streetscape



Ophiopogon japonica 'Variegata'
花葉沿階草
300(H) x 200(W)



Asparagus densiflorus cv. Sprengeri
天冬
200(H) x 200(W)



Gardenia jasminoides
梔子 / 水橫枝
600(H) x 300(W)



Schefflera arboricola cv. Trinette
黃金鵝掌藤
600(H) x 350(W)



Rhapsis humilis
細葉棕竹
500(H) x 500(W)

2. Ornamental



Zephyranthes candida
蔥蓮
300(H) x 200(W)



Hymenocallis littoralis
蜘蛛蘭
500(H) x 500(W)



Rhodomyrtus tomentosa
桃金娘
300(H) x 350(W)



Gordonia axillaris
大頭茶
1000(H) x 350(W)



Melastoma sanguineum
毛柃
600(H) x 350(W)

3. Gardenesque



Duranta erecta
假連翹
300(H) x 350(W)



Lantana camara
馬纓丹
500(H) x 500(W)



Codiaeum variegatum
變葉木
300(H) x 350(W)



Catharanthus roseus
長春花
250(H) x 200(W)



Hymenocallis littoralis
蜘蛛蘭
500(H) x 500(W)



Tradescantia spathacea
蚌花
300(H) x 300(W)



Rhododendron mucronatum
白杜鵑
500(H) x 500(W)



Philodendron selloum
春羽
1000(H) x 800(W)



Phyllanthus myrtifolius
錫蘭葉下珠
500(H) x 500(W)



Rhapsis humilis
細葉棕竹
500(H) x 500(W)

4. Lawn



Zoysia japonica
朝鮮草
Turf Size: 450 x 300

Note: All proposed species for green roof planting and vertical greening are recommended in the "Lists of Potentially Suitable Plant Species for Skyrise Greening in Hong Kong."

At-Grade Tree Planting



Sapium sebiferum (Native)
烏柏



Lagerstroemia speciosa
大花紫薇

Ornamental Tree on Green Roof



Gordonia axillaris (Native)
大頭茶



Elaeocarpus hainanensis
水石榕



Hibiscus tiliaceus (Native)
黃槿

Street Tree



Terminalia mantaly
小葉欖仁

Native Woodland Tree



Ailanthus fordii
福氏臭椿

Note: All proposed species for green roof planting and vertical greening are recommended in the "Lists of Potentially Suitable Plant Species for Skyrise Greening in Hong Kong."



2.0 Architectural Design / Landscape Design

Shrubs



Codiaeum variegatum
變葉木
300(H) x 350(W)



Duranta erecta
假連翹
300(H) x 350(W)



Gardenia jasminoides
梔子 / 水橫枝
600(H) x 300(W)



Gordonia axillaris
大頭茶
1000(H) x 350(W)



Lantana camara
馬纓丹
500(H) x 500(W)



Melastoma sanguineum
毛柃
600(H) x 350(W)



Phyllanthus myrtifolius
錫蘭葉下珠
500(H) x 500(W)



Rhaps humilis
細葉棕竹
500(H) x 500(W)



Rhododendron mucronatum
白杜鵑
500(H) x 500(W)



Rhodomyrtus tomentosa
桃金娘
300(H) x 350(W)



Schefflera arboricola cv. Trinette
黃金鵝掌藤
600(H) x 350(W)

Note: All proposed species for green roof planting and vertical greening are recommended in the "Lists of Potentially Suitable Plant Species for Skyrise Greening in Hong Kong."

Groundcovers



Asparagus densiflorus cv. Sprengeri
天冬
200(H) x 200(W)



Catharanthus roseus
長春花
250(H) x 200(W)



Hymenocallis littoralis
蜘蛛蘭
500(H) x 500(W)



Ophiopogon japonica 'Variegata'
花葉沿階草
300(H) x 200(W)



Philodendron selloum
春羽
1000(H) x 800(W)

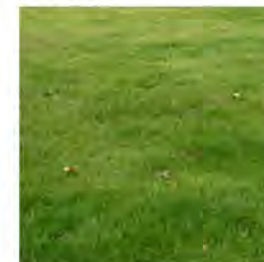


Tradescantia spathacea
蚌花
300(H) x 300(W)



Zephyranthes candida
蔥蓮
300(H) x 200(W)

Grass



Zoysia japonica
朝鮮草
Turf Size: 450 x 300

Climbers



Epipremnum aureum
黃金葛
2000(L) x 100(W)



Pyrostegia venusta
炮仗花
2000(L) x 100(W)



Tristellateia australasiae
三星果
2000(L) x 100(W)



Lonicera japonica
忍冬
2000(L) x 100(W)

Shrub, Groundcover & Grass Schedule



Appendix I Section 5.4.3 of EIA Report



percussive piling noise limits set out within the PP-TM, the assessment of this type of noise are thus not to be included in this EIA Report, and it is upon the authority to make final judgment in granting of CNP and this report make no binding effect to the authority in executing of NCO. However, other auxiliary PME for the piling works, other than the hydraulic hammer driving rig for steel pile, including mobile crane, generator for welder and generator will be included in construction noise impact assessment to reflect construction noise from these PMEs.

- 5.4.3 The key PME to be used for the construction works activities are shown in **Table 5-10**. In order to provide a realistic assessment of the works activities, the percentages of time that PME will be operating on site have also been considered when calculating the cumulative Sound Power Levels (SWL) for the construction activities. The noise levels at the NSRs have been assessed on a monthly basis in respect to the individual noise levels induced by the construction works activities, assuming they are operating cumulatively.

Table 5-10 PME identified as Major Noise Sources

PME ^[1]	TM or other ref.	No. of PME	SWL in dB(A)	On time %	Total SWL ^[2]
1-1 Site Mobilisation and Hoarding					
Loader, wheeled (Back-hoe) (All)	CNP 081	1	112	50	115.3
Excavator, Tracked (All)	CNP 081	1	112	50	
Lorry, with crane, 5.5 tonne <GVH <= 38 tonne (All)	Other ref. ^[3]	1	105	50	
Generator (All)	CNP 103	1	95	100	
Breaker, mini-robot mounted (Act 1)	Other ref. ^[3]	1	115	50	
Air Compressor, air flow < 10m ³ /min (Act 1)	CNP 001	1	100	50	
Concrete Lorry Mixer (Act 2)	CNP 044	1	109	100	
Poker, Vibratory, hand-held, electric (Act 2)	Other ref. ^[3]	2	102	100	
2-1 Piling (Driven H Pile)					
Mobile Crane (All)	CNP 048	3	112	100	116.8
Generator, portable (All)	Other ref. ^[3]	1	100	50	
Generator (All)	CNP 103	1	95	100	
Driven H-Pile Rig	(Controlled under PP-TM)				
3-1 Superstructure (Pile Cap Construction)					
Excavator, Tracked (Act 1)	CNP 081	2	112	50	114.3
Lorry, with crane, 5.5 tonne	Other ref. ^[3]	2	105	50	

PME ^[1]	TM or other ref.	No. of PME	SWL in dB(A)	On time %	Total SWL ^[2]
<GVH <= 38 tonne (Act 1)					
Mobile Crane (Act 1)	CNP 048	1	112	50	
Concrete Lorry Mixer (Act 2)	CNP 044	1	109	50	
Poker, Vibratory, hand-held, electric (Act 2)	Other ref. ^[3]	2	102	100	
Bar Bender and cutter, electric (All)	CNP 021	1	90	70	
3-2 Superstructure (Superstructure and Concreting)					
Lorry, with crane, 5.5 tonne <GVH <= 38 tonne (All)	Other ref. ^[3]	2	105	50	111.7
Concrete Lorry Mixer (All)	CNP 044	1	109	50	
Concrete Pump (All)	CNP 047	1	109	50	
Poker, Vibratory, hand-held, electric (All)	Other ref. ^[3]	2	102	100	
Tower Crane, electric (All)	CNP 049	1	95	100	
Bar bender and cutter, electric (All)	CNP 021	3	90	50	
3-3 Finishes					
Drill, hand-held, battery (All)	Other ref. ^[3]	3	89	50	106.9
Jig-saw, hand-held, wood, electric (All)	Other ref. ^[3]	1	99	50	
Saw, wire (All)	Other ref. ^[3]	2	101	50	
Lorry, with crane, 5.5 tonne <GVH <= 38 tonne (All)	Other ref. ^[3]	2	105	50	

Notes:

[1] The grouping of PMEs in sub-construction task is reflected in brackets. "(ALL)" denotes that the PME would be adopted for all sub-construction tasks in that construction activity. "(Act 1)", "(Act 2)", etc. denotes that the PME would be adopted for particular sub-construction task of a construction activity only.

[2] Total SWL reflects the predicted total SWL in consideration of the number of PMEs, their on-time percentage and accounts for the inventory grouping (sub-construction tasks) contributing to the highest noise level.

[3] PME referenced to the document "Sound power levels of other commonly used PME".

5.4.4 The proposed plant inventory involves the use of Specified Powered Mechanical Equipment (SPME), as detailed in **Section 5.2.2**, including hand-held breaker, concrete lorry mixer and hand-held poker vibrator. As such, should construction



Appendix J Section 5.6.8 of EIA Report



5.6.5 The approved EIA report of the XRL project with EPD Register No. AEIAR-143/2009 has been referenced. The following NSRs are in the vicinity of both XRL and proposed FEHD project:

- Cheong Chit House, Nam Cheong Estate
- Cheong Yat House, Nam Cheong Estate
- Fu Yun House, Fu Cheong Estate

5.6.6 According to the predicted construction noise levels in Appendix 5-8 of AERIA-143/2009, construction noise impact due to the XRL project at the above corresponding NSRs during different works stages are updated with XRL construction schedule provided in **Table 5-13** above. Corresponding section of Appendix 5-8 of AEIAR-143/2009, the location of noise sensitive receivers in the AEIAR-143/2009, correspondence showing updated construction schedule of XRL project, and the corresponding potential construction noise impact due to XRL project to relevant NSRs considered in this assessment are provided in **Appendix 5-9**.

5.6.7 For the uncertainty in detailed construction noise impact from Nam Cheong Station development, construction plant inventory of Nam Cheong Station development was assumed, with construction schedule assumed lasting from before 2012 towards end 2019 to represent the worst case scenario. The assumed plant inventory is also provided in **Appendix 5-8**. Predicted construction noise levels of cumulative construction noise impact from the proposed FEHD depot development together with XRL construction and the Nam Cheong Station development, as well as construction noise impact from the proposed FEHD development alone are provided.

5.6.8 The predicted construction noise levels shown in **Tables 5-14 and 5-15** indicate that construction activities of the Project, if unmitigated, would result in exceedance of the daytime construction noise criteria during normal working hours at Sir Ellis Kadoorie Secondary School (West Kowloon), Tai Kok Tsui Catholic Primary School (Hoi Fan Road) and Fu Cheong Estate Fu Yun House (**NSR N1, N2 and N7 respectively**). Mitigation measures are therefore considered to reduce the construction noise impact to acceptable levels.

Table 5-14 Predicted Cumulative Construction Noise Levels at Selected NSRs during Normal Daytime Working Hours under the Unmitigated Scenario

NSR ID	Descriptions	Land Use	ANL, dB(A)	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Education Institute	65 ^[1]	69	72	66
N2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	Education Institute	65 ^[1]	65	68	61
N3	Hampton Place	Residential	75	61	64	58
N4	Nam Cheong Estate Block 6 Cheong Chit House	Residential	75	63	66	60

NSR ID	Descriptions	Land Use	ANL, dB(A)	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N5	Nam Cheong Estate Block 5 Cheong Yat House	Residential	75	63	66	60
N6	Nam Cheong Estate Block 4 Cheong Shun House	Residential	75	62	65	60
N7	Fu Cheong Estate Fu Yun House	Education / Homes for the Aged	65 ^[1]	66	67	65
N8	Planned Residential Development on Nam Cheong Station	Residential	75	68	71	64

Notes:

1. Construction noise standard for schools is 70 dB(A) at normal school days and is reduced to 65 dB(A) during examination period. The more conservative 65 dB(A) standard is applied in this construction noise impact assessment.
2. Noise levels exceeding the construction noise standards are **bold**.

Table 5-15 Predicted Construction Noise Levels at Selected NSRs during Normal Daytime Working Hours under the Unmitigated Scenario due to the Project ONLY

NSR ID	Descriptions	Land Use	ANL, dB(A)	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Education Institute	65 ^[1]	69	72	65
N2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	Education Institute	65 ^[1]	65	68	61
N3	Hampton Place	Residential	75	60	64	57
N4	Nam Cheong Estate Block 6 Cheong Chit House	Residential	75	61	65	58
N5	Nam Cheong Estate Block 5 Cheong Yat House	Residential	75	62	65	58
N6	Nam Cheong Estate Block 4 Cheong Shun House	Residential	75	60	64	57

NSR ID	Descriptions	Land Use	ANL, dB(A)	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N7	Fu Cheong Estate Fu Yun House	Education / Homes for the Aged	65 ^[1]	61	64	57
N8	Planned Residential Development on Nam Cheong Station	Residential	75	68	71	64

Notes:

1. Construction noise standard for schools is 70 dB(A) at normal school days and is reduced to 65 dB(A) during examination period. The more conservative 65 dB(A) standard is applied in this construction noise impact assessment.
2. Noise levels exceeding the construction noise standards are **bold**.

Operation Phase

Fixed Plant Noise

5.6.9 During the operational phase, noise impact due to the identified fixed plant noise sources including (a) workshop vehicle repair activities and (b) MVAC installation has been assessed. Based upon the assumptions discussed in **Sections 5.5.3 to 5.5.6**, the predicted operational noise levels at the representative NSRs are shown in **Table 5-16**. Detailed calculations of fixed plant noise impact assessment are in **Appendix 5-10**.

Table 5-16 Summary of Predicted Operational Levels at NSRs

NSR ID	Name	Daytime & Evening Time (D) / Nighttime (N)	Predicted Maximum Noise Level /Leq, 30mins dB(A)	EIAO-TM Noise Criteria / Leq,30mins /dB(A)
1	Sir Ellis Kadoorie Secondary School (West Kowloon)	D	54.4	65
		N	N/A	N/A
2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	D	48.4	62
		N	N/A	N/A
3	Hampton Place	D	46.6	65
		N	43.7	55
4	Nam Cheong Estate Block 6 Cheong Chit House	D	53.7	65
		N	49.4	55
5	Nam Cheong	D	53.4	65



Appendix K Section 5.8.2 of EIA Report



5.8 ASSESSMENT OF NOISE IMPACTS WITH THE APPLICATION OF MITIGATION MEASURES

Construction Phase

5.8.1 Construction noise calculations have been carried out with the incorporation of different noise mitigation measures as discussed in **Section 5.7**, as far as practicable according to the actual construction condition and limitation. Mitigation measures adopted in this assessment include:

- the use of quiet plants for PME (QPME);
- temporary noise barriers for PME, as well as noise jacket and mufflers to cover the noisy part of PME and at the engine exhaust of mobile plants respectively;
- limiting of number of plants operated concurrently.

5.8.2 Construction noise levels at the selected NSRs (which are predicted to be the worst affected by the associated construction works) under the mitigated scenario are summarized in **Tables 5-24 and 5-25**. Detailed calculations of the construction noise impact assessment and complete PME inventory are provided in **Appendix 5-11**.

Table 5-24 Predicted Cumulative Construction Noise Levels at Selected NSRs during Normal Daytime Working Hours under the Mitigated Scenario

NSR ID	Descriptions	Land Use	Limit	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Education Institute	65 ^[1]	63	64	64
N2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	Education Institute	65 ^[1]	59	60	60
N3	Hampton Place	Residential	75	55	56	56
N4	Nam Cheong Estate Block 6 Cheong Chit House	Residential	75	60	60	59
N5	Nam Cheong Estate Block 5 Cheong Yat House	Residential	75	59	59	59
N6	Nam Cheong Estate Block 4 Cheong Shun House	Residential	75	58	59	59
N7	Fu Cheong Estate Fu Yun House	Education / Homes for the Aged	65 ^[1]	65	64	64
N8	Planned Residential Development on Nam Cheong Station	Residential	75	61	62	62

Note:

1. Construction noise standard for schools is 70 dB(A) at normal school days and is reduced to 65 dB(A) during examination period. The more conservative 65dB(A) standard is applied in this construction noise impact assessment.

Table 5-25 Predicted Construction Noise Levels at Selected NSRs during Normal Daytime Working Hours under the Mitigated Scenario due to the Project ONLY

NSR ID	Descriptions	Land Use	Limit	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Education Institute	65 ^[1]	63	63	63
N2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	Education Institute	65 ^[1]	58	59	59
N3	Hampton Place	Residential	75	54	55	55
N4	Nam Cheong Estate Block 6 Cheong Chit House	Residential	75	55	56	56
N5	Nam Cheong Estate Block 5 Cheong Yat House	Residential	75	55	56	56
N6	Nam Cheong Estate Block 4 Cheong Shun House	Residential	75	54	55	55
N7	Fu Cheong Estate Fu Yun House	Education / Homes for the Aged	65 ^[1]	54	55	55
N8	Planned Residential Development on Nam Cheong Station	Residential	75	61	62	62

Note:

1. Construction noise standard for schools is 70dB(A) at normal school days and is reduced to 65 dB(A) during examination period. The more conservative 65dB(A) standard is applied in this construction noise impact assessment.

5.8.3 In view of the results listed on **Tables 5-24 and 5-25**, it can be noted that the predicted construction noise levels with noise mitigation measures at the NSRs shall comply with the corresponding construction noise limits.

5.8.4 It is noted that predicted construction noise levels at nearby educational institutions, such as Fu Cheong Estate Fu Yun House and Sir Ellis Kadoorie Secondary School complies with corresponding assessment criteria during normal school days, i.e. 70dB(A), but only marginally comply with the assessment criteria of examination period, i.e. 65dB(A). Although this predicted overall construction noise level has taken into account concurrent construction works in the vicinity and the contribution due to the Project itself is minimal with the implementation of mitigation measures, it is recommended that more detailed construction work programme should be considered before actual construction work is undertaken by the contractor, and applicable noise mitigation measures should be implemented according to the actual site condition and constraints, in order to minimise the potential cumulative construction noise impact with concurrent projects. In particular, the Contractor shall keep close liaison with the nearby educational institutions, and special arrangement on PME operations should be determined during school examination periods.

Operation Phase



Appendix L Section 5.6.9 of EIA Report



NSR ID	Descriptions	Land Use	ANL, dB(A)	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N7	Fu Cheong Estate Fu Yun House	Education / Homes for the Aged	65 ^[1]	61	64	57
N8	Planned Residential Development on Nam Cheong Station	Residential	75	68	71	64

Notes:

1. Construction noise standard for schools is 70 dB(A) at normal school days and is reduced to 65 dB(A) during examination period. The more conservative 65 dB(A) standard is applied in this construction noise impact assessment.
2. Noise levels exceeding the construction noise standards are **bold**.

Operation Phase

Fixed Plant Noise

5.6.9 During the operational phase, noise impact due to the identified fixed plant noise sources including (a) workshop vehicle repair activities and (b) MVAC installation has been assessed. Based upon the assumptions discussed in **Sections 5.5.3 to 5.5.6**, the predicted operational noise levels at the representative NSRs are shown in **Table 5-16**. Detailed calculations of fixed plant noise impact assessment are in **Appendix 5-10**.

Table 5-16 Summary of Predicted Operational Levels at NSRs

NSR ID	Name	Daytime & Evening Time (D) / Nighttime (N)	Predicted Maximum Noise Level /Leq, 30mins dB(A)	EIAO-TM Noise Criteria / Leq,30mins /dB(A)
1	Sir Ellis Kadoorie Secondary School (West Kowloon)	D	54.4	65
		N	N/A	N/A
2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	D	48.4	62
		N	N/A	N/A
3	Hampton Place	D	46.6	65
		N	43.7	55
4	Nam Cheong Estate Block 6 Cheong Chit House	D	53.7	65
		N	49.4	55
5	Nam Cheong	D	53.4	65

NSR ID	Name	Daytime & Evening Time (D) / Nighttime (N)	Predicted Maximum Noise Level /Leq, 30mins dB(A)	EIAO-TM Noise Criteria / Leq,30mins /dB(A)
	Estate Block 5 Cheong Yat House	N	49.8	55
6	Nam Cheong Estate Block 4 Cheong Shun House	D	51.8	65
		N	47.1	55
7	Fu Cheong Estate Fu Yun House	D	52.0	65
		N	48.8	55
8	Planned Residential Development on Nam Cheong Station	D	58.2	65
		N	54.9	55

5.6.10 The maximum allowable Sound Power Level (SWL) of each of the equipment in the plant rooms would be 90 dB(A), which should not be exceeded in order to achieve the noise criteria.

5.6.11 Results in **Table 5-16** show that the predicted maximum noise levels at the identified NSRs due to workshop vehicle repair activities and the MVAC installations would comply with both daytime and nighttime EIAO-TM noise criteria.

Off-site Traffic Noise

5.6.12 The inbound and outbound routings of the off-site traffic of the proposed depot have been agreed with the Government in the Traffic Impact Assessment (TIA) report (endorsed by Transport Department). The agreed inbound and outbound vehicle routing plans are shown in **Appendix 5-7**.

5.6.13 The peak flows of the off-site traffic from the Depot would be at 0700 to 0800hour and 1500 to 1600hour during AM and PM respectively. By comparing of the noise levels between “with project” and “without project” during AM and PM peaks off-site traffic of the Depot, the highest noise contribution generated by the Depot could be assessed.

5.6.14 In order to assess the off-site traffic noise short-term and long-term contribution generated by the Depot, the assessment years for the off-site traffic noise are 2017 and 2032, which are the tentative commencement of occupation year and 15 years after operation respectively.

5.6.15 The traffic forecast at AM peak (0700 – 0800) and PM peak (1500 – 1600) for two scenarios including “with project” and “without project” were provided by the Project Traffic Consultant and endorsed by TD. The traffic forecasts for year 2017 and year 2032 are shown in **Table 5-17** and **Table 5-18** respectively. Relevant correspondence showing the endorsement of the traffic forecast data by the Authority is presented in **Appendix 5-7**. Alignment of the road carriageways is shown in **Appendix 5-7**.



Appendix M Section 5.6.13 of EIA Report



NSR ID	Name	Daytime & Evening Time (D) / Nighttime (N)	Predicted Maximum Noise Level /Leq, 30mins dB(A)	EIAO-TM Noise Criteria / Leq,30mins /dB(A)
	Estate Block 5 Cheong Yat House	N	49.8	55
6	Nam Cheong Estate Block 4 Cheong Shun House	D	51.8	65
		N	47.1	55
7	Fu Cheong Estate Fu Yun House	D	52.0	65
		N	48.8	55
8	Planned Residential Development on Nam Cheong Station	D	58.2	65
		N	54.9	55

5.6.10 The maximum allowable Sound Power Level (SWL) of each of the equipment in the plant rooms would be 90 dB(A), which should not be exceeded in order to achieve the noise criteria.

5.6.11 Results in **Table 5-16** show that the predicted maximum noise levels at the identified NSRs due to workshop vehicle repair activities and the MVAC installations would comply with both daytime and nighttime EIAO-TM noise criteria.

Off-site Traffic Noise

5.6.12 The inbound and outbound routings of the off-site traffic of the proposed depot have been agreed with the Government in the Traffic Impact Assessment (TIA) report (endorsed by Transport Department). The agreed inbound and outbound vehicle routing plans are shown in **Appendix 5-7**.

5.6.13 The peak flows of the off-site traffic from the Depot would be at 0700 to 0800hour and 1500 to 1600hour during AM and PM respectively. By comparing of the noise levels between “with project” and “without project” during AM and PM peaks off-site traffic of the Depot, the highest noise contribution generated by the Depot could be assessed.

5.6.14 In order to assess the off-site traffic noise short-term and long-term contribution generated by the Depot, the assessment years for the off-site traffic noise are 2017 and 2032, which are the tentative commencement of occupation year and 15 years after operation respectively.

5.6.15 The traffic forecast at AM peak (0700 – 0800) and PM peak (1500 – 1600) for two scenarios including “with project” and “without project” were provided by the Project Traffic Consultant and endorsed by TD. The traffic forecasts for year 2017 and year 2032 are shown in **Table 5-17** and **Table 5-18** respectively. Relevant correspondence showing the endorsement of the traffic forecast data by the Authority is presented in **Appendix 5-7**. Alignment of the road carriageways is shown in **Appendix 5-7**.



Appendix N Section 5.4.2 of EIA Report



locations are illustrated in **Figure 5-3** for operational noise impact assessments and in **Figure 5-4** for construction noise impact assessments.

Table 5-9 Summary of Selected Noise Assessment Points at Each Representative NSR

NSR ID	Description	Land Use	No. of Noise Sensitive Storeys above Podium/Site Level	Podium (P)/Site Level (S) (mPD)	No. of Noise Assessment Points at Each Floor
1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Education Institute	8	5.6 (S)	3
2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	Education Institute	8	5.5 (S)	3
3	Hampton Place	Residential	48	14.8 (P)	1
4	Nam Cheong Estate Block 6 Cheong Chit House	Residential	15	5.2 (S)	1
5	Nam Cheong Estate Block 5 Cheong Yat House	Residential	15	5.2 (S)	1
6	Nam Cheong Estate Block 4 Cheong Shun House	Residential	15	5.2 (S)	1
7	Fu Cheong Estate Fu Yun House	Education / Homes for the Aged	5	16.2 (P)	1
8	Planned Residential Development on Nam Cheong Station	Residential	9	26.4 (P)	2 ^[1]
			40		3 ^[1]

Remark:

[1] Noise assessment points of N801 to N805 in **Figure 5-3** are selected for operational noise impact assessments. Noise assessment points of N811 to N815 in **Figure 5-4** are selected for construction noise impact assessment.

5.4 IDENTIFICATION OF POTENTIAL NOISE IMPACTS

Construction Phase

5.4.1 The potential sources of noise impact during the construction phase of the Project would be the use of Powered Mechanical Equipment (PME) for various construction activities. As broadly indicated in construction programme in **Appendix 5-4**, the construction of the project would be tentatively starts from end 2014 and lasts for about 25 months. Location of notional noise sources are provided in **Figure 5-4**. The key construction noise activities include:

- Site mobilisation and hoarding
- Foundation
- Superstructure
- Finishes

5.4.2 Foundation construction will adopt driven H-pile, which is kind of percussive piling as controlled under "Technical memorandum on Noise from Percussive Piling" under Noise Control Ordinance, would be adopted for foundation construction. Since the issuance of a CNP by the Noise Control Authority would depend on the submission of an application by the contractor, and on the contractor's compliance with the

percussive piling noise limits set out within the PP-TM, the assessment of this type of noise are thus not to be included in this EIA Report, and it is upon the authority to make final judgment in granting of CNP and this report make no binding effect to the authority in executing of NCO. However, other auxiliary PME for the piling works, other than the hydraulic hammer driving rig for steel pile, including mobile crane, generator for welder and generator will be included in construction noise impact assessment to reflect construction noise from these PMEs.

- 5.4.3 The key PME to be used for the construction works activities are shown in **Table 5-10**. In order to provide a realistic assessment of the works activities, the percentages of time that PME will be operating on site have also been considered when calculating the cumulative Sound Power Levels (SWL) for the construction activities. The noise levels at the NSRs have been assessed on a monthly basis in respect to the individual noise levels induced by the construction works activities, assuming they are operating cumulatively.

Table 5-10 PME identified as Major Noise Sources

PME ^[1]	TM or other ref.	No. of PME	SWL in dB(A)	On time %	Total SWL ^[2]
1-1 Site Mobilisation and Hoarding					
Loader, wheeled (Back-hoe) (All)	CNP 081	1	112	50	115.3
Excavator, Tracked (All)	CNP 081	1	112	50	
Lorry, with crane, 5.5 tonne <GVH <= 38 tonne (All)	Other ref. ^[3]	1	105	50	
Generator (All)	CNP 103	1	95	100	
Breaker, mini-robot mounted (Act 1)	Other ref. ^[3]	1	115	50	
Air Compressor, air flow < 10m ³ /min (Act 1)	CNP 001	1	100	50	
Concrete Lorry Mixer (Act 2)	CNP 044	1	109	100	
Poker, Vibratory, hand-held, electric (Act 2)	Other ref. ^[3]	2	102	100	
2-1 Piling (Driven H Pile)					
Mobile Crane (All)	CNP 048	3	112	100	116.8
Generator, portable (All)	Other ref. ^[3]	1	100	50	
Generator (All)	CNP 103	1	95	100	
Driven H-Pile Rig	(Controlled under PP-TM)				
3-1 Superstructure (Pile Cap Construction)					
Excavator, Tracked (Act 1)	CNP 081	2	112	50	114.3
Lorry, with crane, 5.5 tonne	Other ref. ^[3]	2	105	50	



Appendix O Section 5.6.7 of EIA Report



5.6.5 The approved EIA report of the XRL project with EPD Register No. AEIAR-143/2009 has been referenced. The following NSRs are in the vicinity of both XRL and proposed FEHD project:

- Cheong Chit House, Nam Cheong Estate
- Cheong Yat House, Nam Cheong Estate
- Fu Yun House, Fu Cheong Estate

5.6.6 According to the predicted construction noise levels in Appendix 5-8 of AERIA-143/2009, construction noise impact due to the XRL project at the above corresponding NSRs during different works stages are updated with XRL construction schedule provided in **Table 5-13** above. Corresponding section of Appendix 5-8 of AEIAR-143/2009, the location of noise sensitive receivers in the AEIAR-143/2009, correspondence showing updated construction schedule of XRL project, and the corresponding potential construction noise impact due to XRL project to relevant NSRs considered in this assessment are provided in **Appendix 5-9**.

5.6.7 For the uncertainty in detailed construction noise impact from Nam Cheong Station development, construction plant inventory of Nam Cheong Station development was assumed, with construction schedule assumed lasting from before 2012 towards end 2019 to represent the worst case scenario. The assumed plant inventory is also provided in **Appendix 5-8**. Predicted construction noise levels of cumulative construction noise impact from the proposed FEHD depot development together with XRL construction and the Nam Cheong Station development, as well as construction noise impact from the proposed FEHD development alone are provided.

5.6.8 The predicted construction noise levels shown in **Tables 5-14 and 5-15** indicate that construction activities of the Project, if unmitigated, would result in exceedance of the daytime construction noise criteria during normal working hours at Sir Ellis Kadoorie Secondary School (West Kowloon), Tai Kok Tsui Catholic Primary School (Hoi Fan Road) and Fu Cheong Estate Fu Yun House (**NSR N1, N2 and N7 respectively**). Mitigation measures are therefore considered to reduce the construction noise impact to acceptable levels.

Table 5-14 Predicted Cumulative Construction Noise Levels at Selected NSRs during Normal Daytime Working Hours under the Unmitigated Scenario

NSR ID	Descriptions	Land Use	ANL, dB(A)	Predicted Construction Noise Levels at each Assessment Year (Leq, dB(A))		
				2014	2015	2016
N1	Sir Ellis Kadoorie Secondary School (West Kowloon)	Education Institute	65 ^[1]	69	72	66
N2	Tai Kok Tsui Catholic Primary School (Hoi Fan Road)	Education Institute	65 ^[1]	65	68	61
N3	Hampton Place	Residential	75	61	64	58
N4	Nam Cheong Estate Block 6 Cheong Chit House	Residential	75	63	66	60



Appendix P PC Certificate



BY EMAIL AND TO BE COLLECTED
China Road and Bridge Corporation
Units 07-11, 23A/F, K. Wah Centre
191 Java Road, North Point
Hong Kong

Attn: Mr. Vincent Chung
(Project Manager)

21 December 2018

Dear Sir,

Contract No. SS D505
REPROVISIONING OF FEHD SAI YEE STREET
ENVIRONMENTAL HYGIENE OFFICES-CUM-VEHICLE DEPOT
AT YEN MING ROAD
Main Contract
- Certificate of Completion
Our Ref.: 4710/4/894/wml

In accordance with Clause 53 of the General Conditions of Contract I hereby certify that, in my opinion, the Works were substantially completed on 22/11/2018. The Maintenance Period commenced on 23/11/2018 and will expire on 22/11/2019.

Yours faithfully,



Clara Pang
for P&T Architects and Engineers Limited

cc.: FEHD – Mr. CHUI Chak Ming, Joseph (by email)
CTA(F), DEVB (by email)
Audit Commission – D of Audit (by email)
ArchSD - SPM335 – Mr. TSE Lok Man (by hand and by email)
PM342 – Mr. NIP Ka Ho, Alan (by email)
PM360 – Mr. WONG Sing Lam, Ken (LA) (by email)
PM373 – Ms. LUI Wun, Vicky (LBSE) (by email)
PM369 – Mr. YIP Siu Hung (LQS) (by email)
ER(COW) – Mr. CHOI Wai Yin (by email)
ER(BSI) – Mr. HO Man-wai (by email)
CCOW/Admin – Mr. LAM Kwok-kit (by email)
AD(PS) – (Attn: SPSM/Y&KT – Mr. TANG Luen Tai, Lawrence) (by email)
TS/Contractor Management (F: 3542 5400)
Consultant Team – PSE – PTAE – Mr. Simon HO (by email)
PBSE – PTME – Mr. Matt YAU (by email)
PLA – Urbis Ltd – Mr. Tuan Huy TRAN (by email)
PQS – Arcadis – Mr. Arthur CHEUNG (by email)
RSS Team – RCOW – Mr. Marco LEUNG (by email)
RWSI(Building) – Mr. Benny TSUI (by email)
RBSI – Mr. Kai Cheong PANG (by email)

CP/JHUNG/wml

P&T Architects and Engineers Limited

Hong Kong • Singapore • Bangkok • Shanghai • Wuhan • Chongqing • Shenzhen • Macau • Hanoi • Ho Chi Minh City • Jakarta • Kuala Lumpur • Dubai • Abu Dhabi • Doha
33/F, 633 King's Road, North Point, Hong Kong Tel: 852-25756575 Fax: 852-28913834 E-mail: ptahk@p-t-group.com Website: www.p-t-group.com

