



**AUES PROJECT NO. TCS/00704/14**

**CONTRACT NO. MTRC6593-13C –  
WAN CHAI STATION LEE TUNG STREET SUBWAY**

**41<sup>ST</sup> ENVIRONMENTAL MONITORING AND AUDIT  
(EM&A) MONTHLY REPORT – JANUARY 2018**

**PREPARED FOR  
BUILD KING CONSTRUCTION LIMITED**

**Quality Index**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Approved By</b>
14 February 2018	TCS00704/14/600/R0190v3	 Martin Li Assistant Environmental Consultant	 T.W. Tam Environmental Team Leader

<b>Version</b>	<b>Date</b>	<b>Description</b>
1	12 February 2018	First Submission
2	13 February 2018	Amended against IEC's comments
3	14 February 2018	Amended against IEC's comments

Your Ref:  
Our Ref: 60453136.40032976/2018000072E

**By Email and Post**

MTR Corporation Limited  
Fo Tan Railway House  
No. 9, Lok King Street, Fo Tan  
Shatin, N.T.,  
Hong Kong

Attn.: Mr. Alfa Liu

14 February 2018

Dear Sirs

**Consultancy Agreement A130-13  
Independent Environmental Checker for CRS and LTS  
LTS - Verification for 41<sup>st</sup> Monthly Environmental Monitoring and Audit (EM&A) Report  
(January 2018) (Report No.: TCS00704/14/600/R0190v3)**

We refer to the 41<sup>st</sup> Monthly EM&A Report (January 2018) received under cover of the email from the Environmental Team, AUES, dated on 12 February 2018.

Further to our comments provided on 13 and 14 February 2018 and subsequent revision of the Report by AUES on 13 and 14 February 2018, we have no further comment and have verified the captioned report (Report No: TCS00704/14/600/R0190v3).

Should you have any queries, please feel free to contact the undersigned at 3922 9366.

Yours faithfully  
**AECOM Consulting Services Ltd**



Y. W. Fung  
Independent Environmental Checker

LLMC/wwsc

cc Kaden Consturction Limited (Attn.: Mr. Ronald Fung) via email  
AUES (Attn.: Ms. Nicola Hon) via email

## EXECUTIVE SUMMARY

ES01 This is the 41<sup>st</sup> monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 January 2018** (hereinafter ‘the Reporting Period’).

### SUMMARY OF ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES02 The monitoring and audit activities during the Reporting Period are summarized in below:-

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Reporting Period	
		Number of Monitoring Location	Total Occasions
Air Quality	24-hour TSP	1	0
Construction Noise	L <sub>eq(30min)</sub> Daytime	2	0
Site Inspection Audit	Weekly inspection with ET, the Contractor and RE	--	4
	Monthly joint inspection with ET, the Contractor, RE and IEC	--	1

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

ES03 Since air quality and noise monitoring was terminated, there is no air quality and noise monitoring and exceedances were recorded.

### ENVIRONMENTAL COMPLAINT

ES04 No complaint was received in the Reporting Period.

### NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES05 No environmental summons or successful prosecutions were recorded in the Reporting Period.

### REPORTING CHANGE

ES06 As informed by the Contractor (Build King Construction Limited), the major civil works of the project will be substantially completed on 31 December 2017 and part of the ground site area would be returned to related government department on 2 January 2018. In view of the remaining landscape work would not arising adverse dust and noise impact, termination of all monitoring locations was proposed to be effective from 1 January 2018. In this regards, an associated letter ref. TCS00704/14/300/L0184 date 29 December 2017 has been issued to EPD for approval and no adverse comment was received. Therefore, no air and noise monitoring was carried out in the reporting month.

### SITE INSPECTION

ES07 In the Reporting Period, weekly site inspection by the MTRC, ET and Contractor was carried out on **5, 12, 19 and 26 January 2018** and the IEC was joined the site inspection on **26 January 2018**. No non-compliance but two (2) reminders were recorded during the site inspection.

### FUTURE KEY ISSUES

ES08 The Contractor should pay attention and implement sufficient protection to the transplanted tree for this project to avoid any damage done to the transplanted tree and prevent tree collapse in the future.

**TABLE OF CONTENTS**

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
	PROJECT BACKGROUND	1
	REPORT STRUCTURE	1
<b>2</b>	<b>PROJECT ORGANIZATION AND SUBMISSION</b>	<b>3</b>
	PROJECT ORGANIZATION	3
	SUMMARY OF ENVIRONMENTAL SUBMISSIONS	4
	CONSTRUCTION PROGRESS	5
<b>3</b>	<b>ENVIRONMENTAL IMPACT MONITORING REQUIREMENT</b>	<b>6</b>
<b>4</b>	<b>MONITORING RESULTS</b>	<b>6</b>
<b>5</b>	<b>WASTE MANAGEMENT</b>	<b>6</b>
	GENERAL WASTE MANAGEMENT	6
	RECORDS OF WASTE QUANTITIES	6
<b>6</b>	<b>SITE INSPECTION</b>	<b>7</b>
	FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH	7
<b>7</b>	<b>ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE</b>	<b>8</b>
	ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION	8
<b>8</b>	<b>IMPLEMENTATION STATUS OF MITIGATION MEASURES</b>	<b>9</b>
	GENERAL REQUIREMENTS	9
	TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH	9
	KEY ISSUES FOR THE COMING MONTH	9
<b>9</b>	<b>CONCLUSIONS AND RECOMMENDATIONS</b>	<b>10</b>
	CONCLUSION	10
	RECOMMENDATIONS	10

**LIST OF TABLES**

TABLE 2-1	SUBMISSION/SET-UP STATUS OF THE EP REQUIREMENTS
TABLE 2-2	STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACTS
TABLE 5-1	SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
TABLE 5-2	SUMMARY OF QUANTITIES OF NON-INERT C&D WASTES
TABLE 6-1	SITE OBSERVATIONS
TABLE 7-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 7-2	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 7-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 8-1	ENVIRONMENTAL MITIGATION MEASURES

**LIST OF APPENDICES**

APPENDIX A	PROJECT SITE LAYOUT PLAN
APPENDIX B	ORGANIZATION OF THE PROJECT
APPENDIX C	MONITORING LOCATIONS
APPENDIX D	EVENT AND ACTION PLAN
APPENDIX E	MONTHLY SUMMARY WASTE FLOW TABLE
APPENDIX F	IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)

## 1 INTRODUCTION

### PROJECT BACKGROUND

- 1.01 **BUILD KING CONSTRUCTION LIMITED** (hereinafter ‘BKCL’) has been awarded by the MTR Corporation Limited (MTRCL) the Contract No. *MTRC6593-13C – Wan Chai Station Lee Tung Street Subway* (hereinafter “the Project”), which is a Designated Project to be implemented under Environmental Permit EP-444/2012 (hereinafter referred as “the EP-444/2012” or “the EP”).
- 1.02 The Project includes redevelopment of the Lee Tung Street area to improve pedestrian networking by enhancing the accessibility, connectivity and circulation of human traffic north-south from Queen’s Road East area to Wan Chai MTR Station, and providing a safe and attractive means for pedestrian crossing of Johnston Road. The Project site layout plan is shown in *Appendix A* and works under the Project comprise of:
- (i) Construction of a pedestrian subway link between Urban Renewal Authority’s Redevelopment at Site H15 (the Development) and Wan Chai Station (WAC);
  - (ii) Construction of two ventilation shafts; and
  - (iii) Modification works of some of the station concourse.
- 1.03 The Project is expected to be undertaken for 36 months. In order to effectively implement the environmental protection measures as stipulated in the Particular Specification (PS), an Environmental Monitoring and Audit Plan (EMAP) which enclosed in the Project Profile (PP) was prepared to guide the setup of the environmental monitoring and audit (EM&A) programme of the Project.
- 1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by the KCL as the independent environmental team (ET) to implement the relevant EM&A programme for the Project.
- 1.05 The baseline monitoring program was carried out between 3 June 2014 and 19 June 2014 at the proposed monitoring locations by the ET according to the approved EMAP. The “Baseline Monitoring Report (R0010 Version 4)” has been verified by IEC submitted to the EPD on *15 July 2014* before commencement of major construction works. The construction of the Project was commenced on 28 August 2014 as notified by KCL. Accordingly, relevant EM&A programme was started on 28 August 2014.
- 1.06 As informed by the Contractor (Build King Construction Limited), the major civil works of the project will be substantially completed on 31 December 2017 and part of the ground site area would be returned to related government department on 2 January 2018. In view of the remaining landscape work would not arising adverse dust and noise impact, termination of all monitoring locations was proposed to be effective from 1 January 2018. In this regards, an associated letter ref. TCS00704/14/300/L0184 date 29 December 2017 has been issued to EPD for approval and no adverse comment was received. Therefore, no air and noise monitoring was carried out in the reporting month.
- 1.07 This is **41<sup>st</sup>** monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from **1 to 31 January 2018**.

### REPORT STRUCTURE

- 1.08 This Report is structured into the following sections:-

<b>Section 1</b>	<i>Introduction</i>
<b>Section 2</b>	<i>Project Organization</i>
<b>Section 3</b>	<i>Environmental Impact Monitoring Requirement</i>
<b>Section 4</b>	<i>Monitoring Results</i>
<b>Section 5</b>	<i>Waste Management</i>
<b>Section 6</b>	<i>Site Inspections</i>

<i>Section 7</i>	<i>Environmental Complaint and Non-Compliance</i>
<i>Section 8</i>	<i>Implementation Status of Mitigation Measures</i>
<i>Section 9</i>	<i>Conclusions and Recommendations</i>

## 2 PROJECT ORGANIZATION AND SUBMISSION

### PROJECT ORGANIZATION

2.01 The project organization is shown in *Appendix B*. The responsibilities of respective parties are:

#### *MTR Corporation Limited (MTRCL)*

2.02 MTRCL is the Project Proponent and the Permit Holder of the EP of the development of the Project and will assume overall responsibility for the project. Also, an Independent Environmental Checker (IEC) should be employed by MTRCL to audit the results of the EM&A work conducted by Environmental Team.

#### *Environmental Protection Department (EPD)*

2.03 EPD is the statutory enforcement body for environmental protection matters in Hong Kong.

#### *Resident Engineer (RE)*

2.04 The RE is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:

- Monitor the Contractor's compliance with Contract Specifications, including the effective implementation and operation of the environmental mitigation measures;
- Inform the Contractor when action is required to reduce impacts in accordance with the Event and Action Plans;
- Participate in site inspections undertaken by the ET; and
- Co-operate with the ET in providing all the necessary information and assistance for completion of the complaint investigation works.

#### *Independent Environmental Checker (IEC)*

2.05 The IEC should advise the ET and RE on environmental issues related to the project. The IEC should audit from an independent viewpoint on the environmental performance during the construction of the project. The IEC should be a person who has relevant professional qualifications in environmental control and at least 7 years' experience in EM&A and environmental management. The duties and responsibilities of the IEC are:

- Review and audit in an independent, objective and professional manner in all aspects of the EM&A programme;
- Validate and confirm the accuracy of monitoring results, appropriateness of monitoring equipment, monitoring locations with reference to the locations of the nearby sensitive receivers, and monitoring procedures;
- Carry out random sample check and audit on monitoring data and sampling procedures, etc;
- Conduct random site inspection;
- Review the effectiveness of environmental mitigation measures and project environmental performance;
- On an as-need basis, verify and certify the environmental acceptability of the construction methodology (both temporary and permanent works), relevant design plans and submissions under the environmental permit. Where necessary, the IEC should agree in consultation with the ET and the Contractor least impact alternative;
- Check complaint cases and the effectiveness of corrective measures;
- Verify EM&A report certified by the ET Leader; and
- Feedback audit results to RE/ET according to the Event/Action Plan.

#### *Environmental Team (ET)*

2.06 The ET should conduct the EM&A programme and ensure the Contractor's compliance with the project's environmental performance requirements during construction. The ET should plan, organize and manage the implementation of the EM&A programme and ensure that the EM&A works are undertaken to the required standard.

2.07 The ET should be led and managed by the ET Leader. The ET Leader should have relevant



professional qualifications in environmental control and possess at least 7 years' experience in EM&A. The ET Leader should be responsible for the implementation of the EM&A programmes in accordance with the EM&A requirements. The duties and responsibilities of the ET include:

- Sampling, analysis and statistical evaluation of monitoring parameters;
- Environmental site surveillance;
- Inspection and audit of compliance with environmental protection, and pollution prevention and control regulations;
- Assess the effectiveness of the environmental mitigation measures implemented;
- Monitor compliance with the environmental protection clauses/specifications in the Contract;
- Review construction programme and comment as necessary;
- Review work methodologies which may affect the extent of environmental impact during the construction phase and comment as necessary;
- Complaint investigation, evaluation and identification of corrective measures;
- Liaison with the IEC on all environmental performance matters, and timely submission of all relevant EM&A proforma for IEC's approval; and
- Advice to Contractor on environmental improvement, awareness and enhancement matters etc.

**The Contractor**

- 2.08 The Contractor should report to the RE. The duties and responsibilities of the Contractor are:
- Comply with the relevant contract conditions and specifications on environmental protection
  - Participate in the site inspections undertaken by the ET;
  - Provide assistance to ET to carry out monitoring;
  - Provide requested information to the ET in the event of any exceedance in the environmental criteria (Action/Limit levels);
  - Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event / Action Plans; and
  - Cooperate with the ET in providing all the necessary information and assistance for completion of the complaint investigation works. If mitigation measures are required following the investigation, the Contractor should promptly carry out these measures.

**SUMMARY OF ENVIRONMENTAL SUBMISSIONS**

- 2.09 In accordance with the EP stipulation, the required documents and submission status to EPD are listed in Table 2-1.

**Table 2-1 Submission/Set-up Status of the EP Requirements**

EP Condition	Submission	Status
2.3	Management Organization of Main Construction Companies	Submitted
2.7	Landscape Plan	Submitted
2.9	Fixed Plant Noise Audit Report	Submitted
3.3	Baseline Monitoring Report (TCS00704/14/600/R0010v4)	Submitted
4.2	Internet website	live
3.1	Termination of Air Quality and Noise Monitoring	Submitted

- 2.10 Summary of environmental permits, licenses, and relevant notifications on environmental protection for the Project are presented in *Table 2-2*.

**Table 2-2 Status of Environmental Licenses and Permits of the Project**

Item	Description	License/Permit Status
1	Air Pollution Control (Construction Dust) Regulation	Notified EPD.
2	Chemical Waste Producer Registration - Waste Producers Number	WPN:5213-131-K3099-01 Approved on 14/05/2014
3	Water Pollution Control Ordinance - Discharge License	License no.: WT00022835-2015 Approved on 6/11/2015 Valid to: 31/07/2018

Item	Description	License/Permit Status
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no.: 7019837 Approved on 30/04/2014
5	Construction Noise Permit under Noise Control Ordinance	GW-RS0750-17 obtained on 30 August 2017 Valid from 8 September 2017 to 7 March 2018

#### CONSTRUCTION PROGRESS

2.11 The construction activities conducted in the Reporting Period are listed in below. Moreover, the master construction program is shown in *Appendix B*.

- Landscape work on playground.

### 3 ENVIRONMENTAL IMPACT MONITORING REQUIREMENT

3.01 Since termination of all monitoring locations was effective from 1 January 2018, no air and noise monitoring was carried out in the reporting month.

### 4 MONITORING RESULTS

4.01 Since termination of all monitoring locations was effective from 1 January 2018, no air and noise monitoring was carried out in the reporting month.

### 5 WASTE MANAGEMENT

#### GENERAL WASTE MANAGEMENT

5.01 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

#### RECORDS OF WASTE QUANTITIES

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

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

5.03 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 5-1* and *5-2* and the Monthly Summary Waste Flow Table is shown in *Appendix F*.

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

Type of Waste	Quantity	Disposal Location
Total C&D Materials (Inert) (m <sup>3</sup> )	0	-
Reused in this Contract (Inert) (m <sup>3</sup> )	0	-
Reused in other Projects (Inert) (m <sup>3</sup> )	0	-
Disposal as Public Fill (Inert) (m <sup>3</sup> )	0	TKO 137

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

Type of Waste	Quantity	Disposal Location
Recycled Metal (m <sup>3</sup> )	0	-
Recycled Paper / Cardboard Packing (m <sup>3</sup> )	0	-
Recycled Plastic (m <sup>3</sup> )	0	-
Chemical Wastes (m <sup>3</sup> /L)	0	-
General Refuses (m <sup>3</sup> )	0	SENT Landfill

5.04 In the Reporting Period, effluent generated from the Project was discharged in accordance with the Wastewater Discharge License.

5.05 Moreover, it is reminded that C&D materials would be reused on-site as far as practicable.

**6 SITE INSPECTION**

6.01 According to the EMAP, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

**FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH**

6.02 During the Reporting Period, **four (4)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **5, 12, 19 and 26 January 2018** and the IEC was joined the site inspection on **26 January 2018**.

6.03 No non-compliance was noted. However, two (2) reminders were recorded by the ET. The findings / deficiencies observed during the weekly site inspections are listed in **Table 6-1**.

**Table 6-1 Site Observations**

Date	Findings / Deficiencies	Follow-Up Status
28 December 2017	<ul style="list-style-type: none"> <li>• Bags of materials hanging on trees were observed. The Contractor should ensure no materials were allowed hanging on tree.</li> </ul>	<ul style="list-style-type: none"> <li>• Bags of materials was removed. Last observation closed.</li> </ul>
5 January 2018	<ul style="list-style-type: none"> <li>• No adverse environmental issue was observed during site inspection.</li> </ul>	<ul style="list-style-type: none"> <li>• Nil</li> </ul>
12 January 2018	<ul style="list-style-type: none"> <li>• No adverse environmental issue was observed during site inspection.</li> </ul>	<ul style="list-style-type: none"> <li>• Nil</li> </ul>
19 January 2018	<ul style="list-style-type: none"> <li>• No adverse environmental issue was observed during site inspection.</li> </ul>	<ul style="list-style-type: none"> <li>• Nil</li> </ul>
26 January 2018	<ul style="list-style-type: none"> <li>• The Contractor was reminded to spray water while carrying out dusty activities.</li> <li>• The Contractor was reminded to use hand-held breaker with valid noise emission label.</li> </ul>	<ul style="list-style-type: none"> <li>• Not required for reminder</li> <li>• Not required for reminder</li> </ul>

6.04 No site inspection was undertaken by external parties i.e. EPD in this Reporting Month.

**7 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE**

**ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION**

- 7.01 For the Project, no environmental complaint, summons and prosecution was received in the Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 7-1, 7-2 and 7-3*.
- 7.02 The environmental complaint about noise nuisance arising from the construction site of Wan Chai Station Lee Tung Street Subway near Hennessy Road on 13 March 2017 was received by ET on 26 May 2017 and the investigation report had been submitted.

**Table 7-1 Statistical Summary of Environmental Complaints**

Reporting Period	Environmental Complaint Statistics					
	Frequency	Cumulative	Complaint Nature			
			Air	Noise	Water	Others
28 Aug 2014 – 31 December 2017	1	1	NA	1	NA	NA
1– 31 January 2018	0	0	NA	NA	NA	NA

**Table 7-2 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics					
	Frequency	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 31 December 2017	0	0	NA	NA	NA	NA
1– 31 January 2018	0	0	NA	NA	NA	NA

**Table 7-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics					
	Frequency	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 31 December 2017	0	0	NA	NA	NA	NA
1– 31 January 2018	0	0	NA	NA	NA	NA

## 8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

### GENERAL REQUIREMENTS

- 8.01 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the EMAP covered the issues of dust, noise, water and waste and they are summarized presented in *Appendix G*
- 8.02 The Works under the Project shall be implementing the required environmental mitigation measures according to the EMAP as subject to the site condition. Environmental mitigation measures generally to be implemented by the Contractor is listed in *Table 8-1*.

**Table 8-1 Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Landscape and Visual	<ul style="list-style-type: none"><li>• Clear demarcation of works area to prevent damages to existing trees in close proximity;</li><li>• Protection of all trees planned to be retained onsite;</li><li>• Preserving all affected trees by transplanting where practical. Tree transplanting application and tree removal application shall be submitted for approval in accordance with ETWB TCW 3/2006; and</li><li>• Screening of construction works by hoardings/noise barriers around Works area in visually unobtrusive colors.</li></ul>
General	<ul style="list-style-type: none"><li>• The site was generally kept tidy and clean.</li></ul>

### TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 8.03 Construction activities as undertaken in the coming month for the Project lists below:
- Landscape work on playground.

### KEY ISSUES FOR THE COMING MONTH

- 8.04 Key issues to be considered in the coming month of the Project include:
- Follow-up of improvement on general waste management issues.
- 8.05 In addition, mosquito control measures should be continued to prevent mosquito breeding on site.

## 9 CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSION

- 9.01 This is the **41<sup>st</sup>** monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from **1 to 31 January 2018**.
- 9.02 Since termination of all monitoring locations was effective from 1 January 2018, no air and noise monitoring was carried out in the reporting month.
- 9.03 No environmental complaint, notification of summons or successful prosecution was received in the Reporting Period.
- 9.04 **Four (4)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **5, 12, 19 and 26 January 2018** and the IEC was joined the site inspection on **26 January 2018**. No non-compliance was noted but two (2) reminders were recorded by the ET.
- 9.05 In the Reporting Period, no site inspection was undertaken by external parties i.e. EPD.

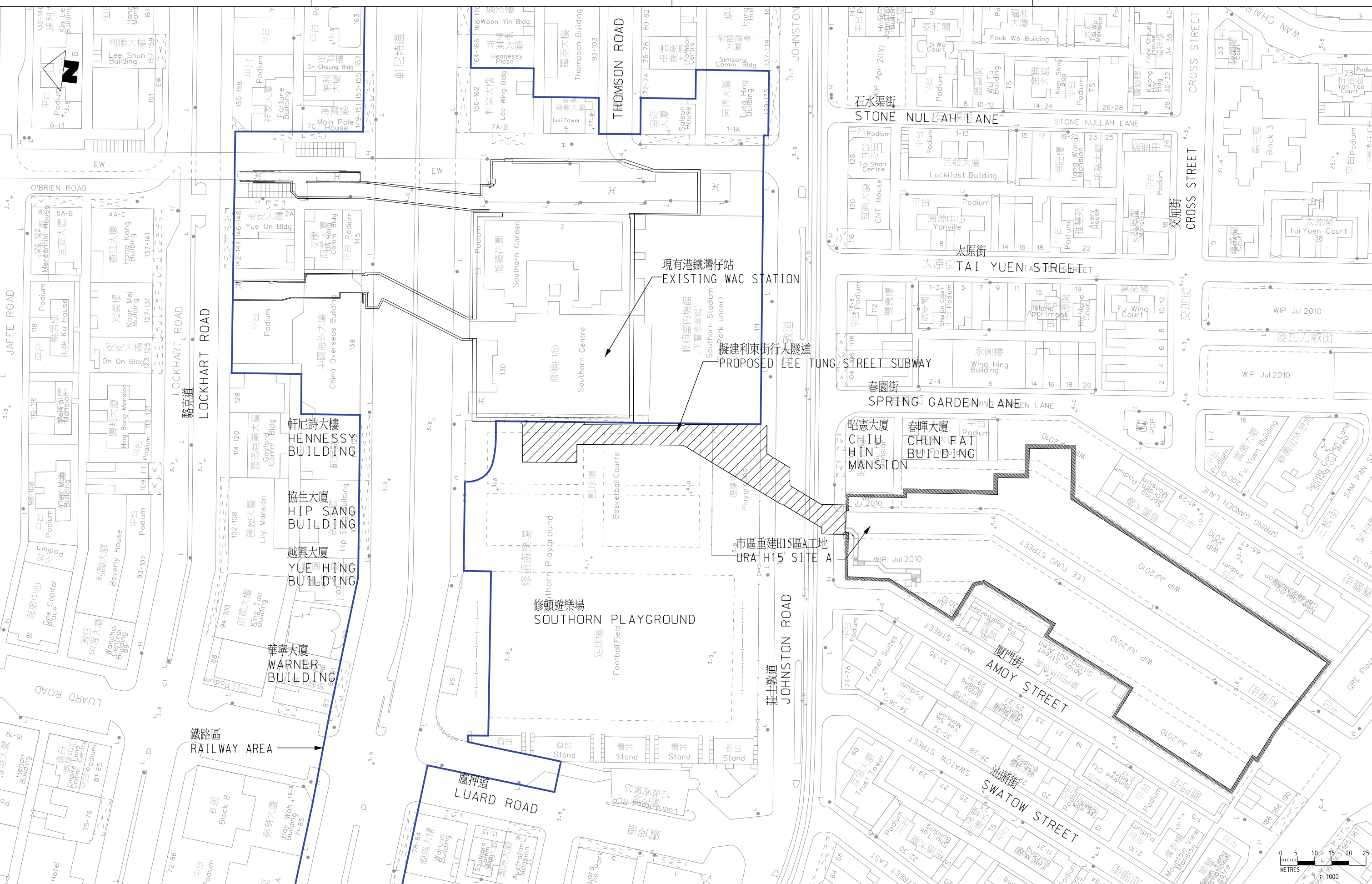
### RECOMMENDATIONS

- 9.06 The Contractor should pay attention and implement sufficient protection to the transplanted tree for this project to avoid any damage done to the transplanted tree and prevent tree collapse in the future.

**Appendix A**  
**Project Site Layout Plan**



C:\ProgramData\Bentley\MicroStation\18\USELECT\series\WorkSpace\System\pctrig\MTR\_PDF\_BW\_COL\_300DP.dgn  
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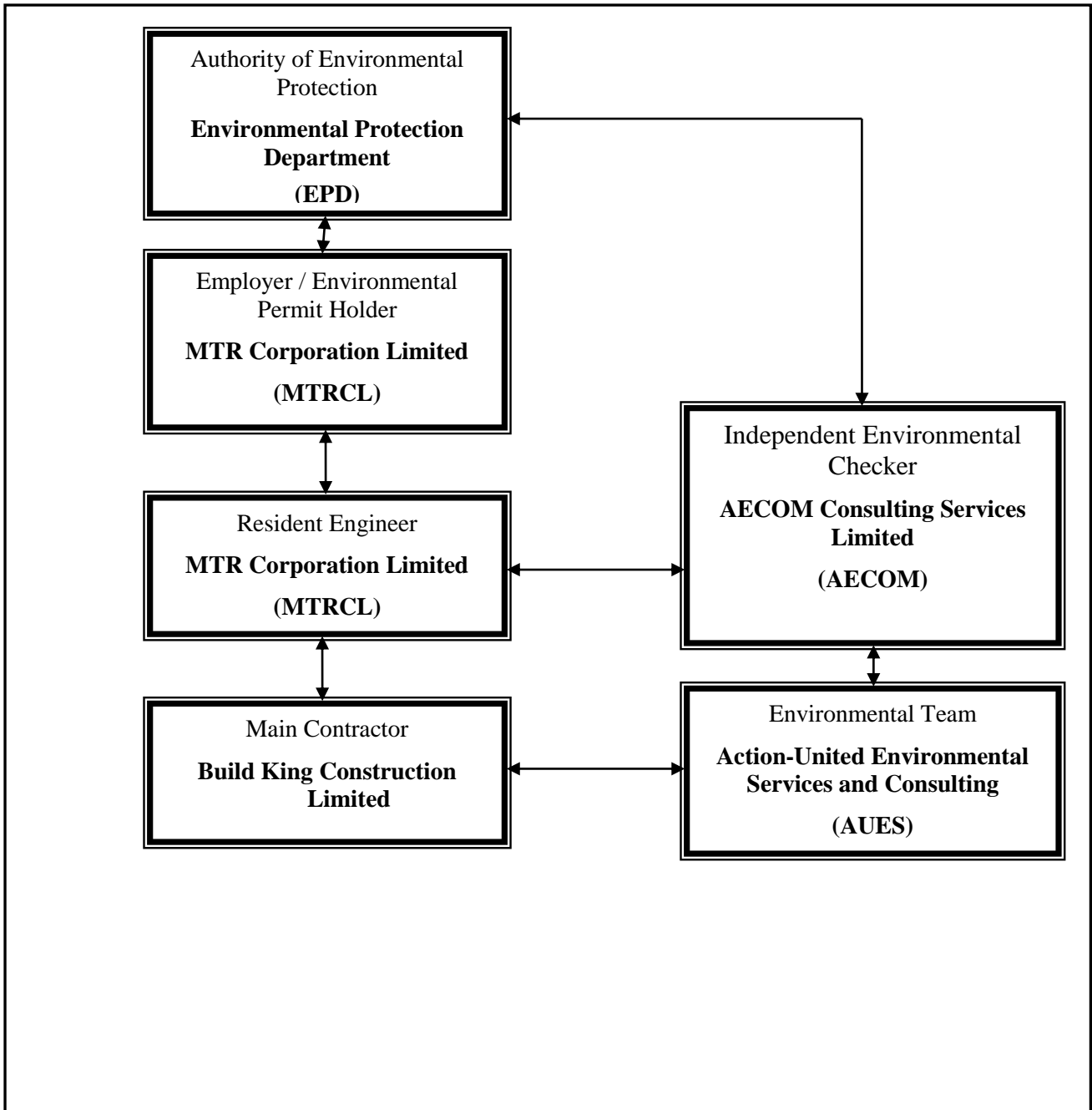
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C	GENERAL REVISION		12AUG11	AFK	HD				
B	GENERAL REVISION		18JUL11	AFK	HD				
A	PROJECT PROFILE		04MAY11	AFK	HD				

DRAWN: HO  
 DESIGNED: BW  
 CHECKED: BL  
 APPROVED: AFK  
 DATE: 04MAY2011  
 ORIGINATOR: MTR  
 Mott MacDonald  
 20/F Two Landmark East  
 100 Hoi Yung Street  
 Kowloon  
 HONG KONG  
 TEL: +852 2808 2527  
 FAX: +852 2807 1823  
 WWW.MOTTMACDONALD.COM.HK  
 CADD REF: NEX1050\_2.7A\_0010.dgn

TITLE: CONSULTANCY AGREEMENT NO. NEX/1050  
 DETAILED DESIGN FOR LEE TUNG STREET SUBWAY  
 SITE LOCATION PLAN  
 施工位置圖  
 SCALE: 1:1000 (A3)  
 DRAWING NO.: NEX1050/2.7A/001  
 REV: D

## **Appendix B**

### **Organization of the Project**



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

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
MTRCL	Senior Construction Engineer	Mr. Sky Yip	3163 8630	3163 8699
AECOM	Independent Environmental Checker	Mr. Y. W. Fung	3922 9366	3922 9797
KCL	Project Manager	Mr. Vincent, Kwan Chun Yin	9833 1313	2770 4278
KCL	Site Agent	Mr. Chan Kam Chuen	6462 8910	2770 4278
KCL	Environmental Officer	Ms. Ricci Poon Wai Tin	9533 1115	2770 4278
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Mr. Ben Tam	2959 6059	2959 6079
AUES	Assistant Environmental Consultant	Mr. Martin Li	2959 6059	2959 6079

**Legend:**

*MTRCL (Employer) – MTR Corporation Limited*

*MTRCL (Resident Engineer) – MTR Corporation Limited*

*BKCL (Main Contractor) – Build King Construction Limited*

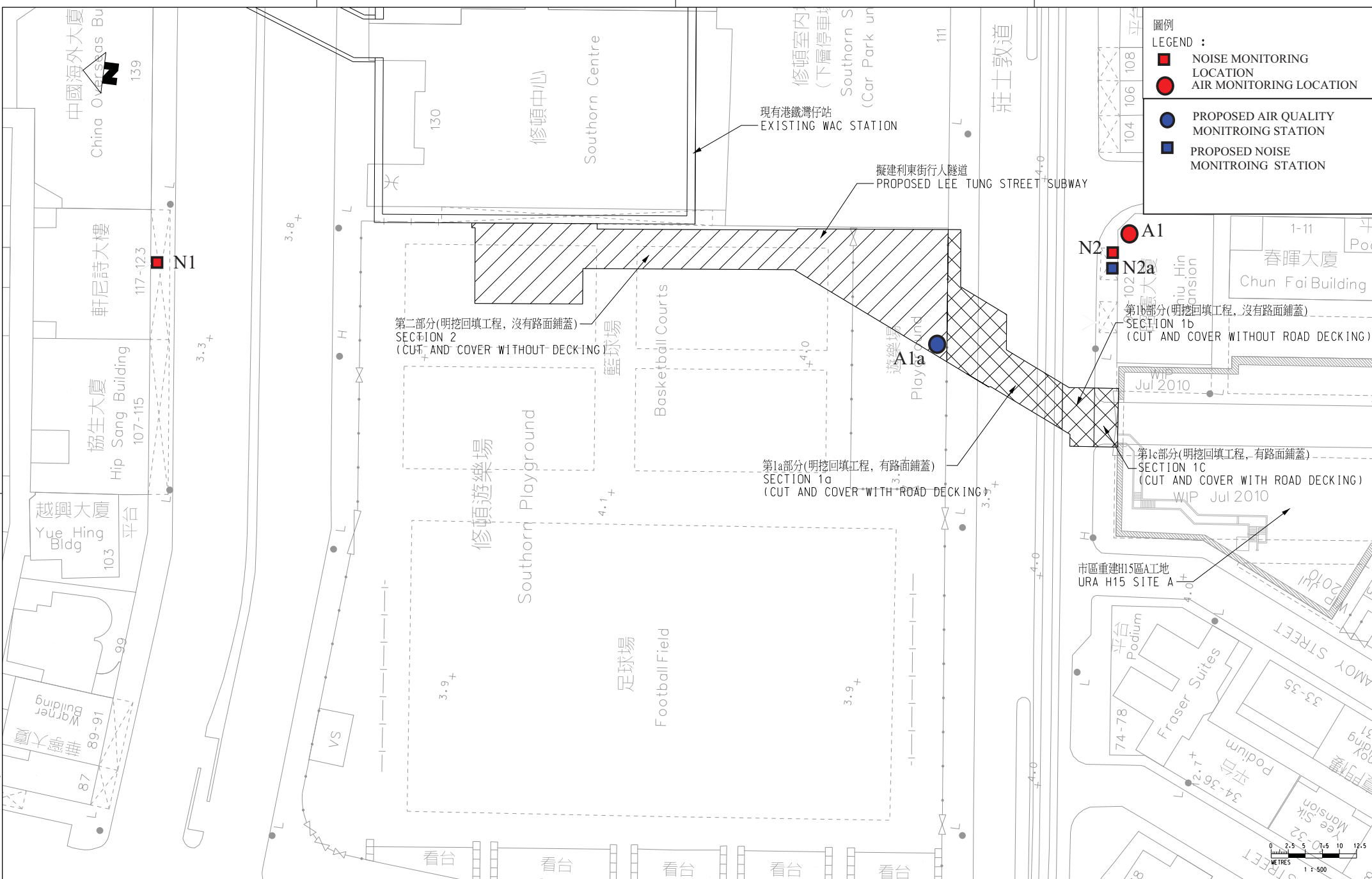
*AECOM (IEC) – AECOM Consulting Services Limited*

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

## **Appendix C**

### **Monitoring Locations**

Ca:\ProgramData\Bentley\MicroStation\18\SELECTseries\WorkSpace\System\cwg\WLR\_PDF\_BM\_COA\_3000P.dwg  
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 FILENAME: 04/2024/5/REP/REP1/CON/PT/000006/000000\_27A\_000000.dwg



**圖例**  
**LEGEND :**

- NOISE MONITORING LOCATION
- AIR MONITORING LOCATION
- PROPOSED AIR QUALITY MONITORING STATION
- PROPOSED NOISE MONITORING STATION

TITLE  
 CONSULTANCY AGREEMENT NO. NEX/1050  
 DETAILED DESIGN FOR LEE TUNG STREET SUBWAY  
 LOCATION OF NOISE AND AIR MONITORING LOCATION

**MTR**  
 WAC STATION LEE TUNG STREET SUBWAY

ORIGINATOR

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DRAWN	
DESIGNED	
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DATE	
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REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED
D	GENERAL REVISION								
C	GENERAL REVISION								
B	GENERAL REVISION								
A	PROJECT PROFILE								

REV	DESCRIPTION	BY	DATE	APPROVED

SCALE: 1:500 (A3) DRAWING NO. REV.

## **Appendix D**

### **Event and Action Plan**

**Event and Action Plan for Construction Noise**

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



### Event and Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
<b>Action Level</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. If valid, inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and EPD;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Discuss with IEC and Contractor on remedial action required;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervisor implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial Measure properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial action to IEC within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>
<b>Limit Level</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform ER and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and the Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify sources;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

## **Appendix E**

### **Monthly Summary Waste Flow Table**

**Wan Chai Station Lee Tung Street Subway- C6593-13C**

**Monthly Summary Waste Flow Table for 2018**

Name of Employer: MTR Corporation Limited											Contract No.: C65931-13C									
Month	Actual Quantities of Inert C&D Materials Generated Monthly										Actual Quantities of Non-Inert C&D Wastes Generated Monthly					Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Slurry	Rock	Soil	Reused in this Project	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> / Litre)	(in m <sup>3</sup> )	(in ton)	(in ton)	(in ton)	(in Litre)	(in ton)
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb																				
Mar																				
Apr																				
May																				
Jun																				
Jul																				
Aug																				
Sep																				
Oct																				
Nov																				
Dec																				
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## **Appendix F**

### **Implementation Schedule for Environmental Mitigation Measures (ISEMM)**

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
<b>NOISE IMPACT</b>						
S.5.1.1	<b><u>Use of quieter plant</u></b>	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance
S.5.1.1	<b><u>Use of noise enclosure and movable barrier</u></b> <ul style="list-style-type: none"> <li>• movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME;</li> <li>• noise enclosure can achieve 15dB(A) reduction for PME;</li> <li>• noise enclosure is proposed to be built after open excavation in order to minimize the noise impact due to further excavation work and construction of subway. The enclosure should either be provided with acoustic door for access purpose which should be kept closed during the construction works or should be designed with no direct line of sight from the open side to the NSRs;</li> <li>• A typical design barrier with a steel frame of vertical / cantilever type would be adopted and located close to the noise generating part of PME;</li> <li>• Barrier material of surface mass in excess of 7kg/m<sup>2</sup> shall be required to achieve the maximum screening effect (and minimum 10kg/m<sup>2</sup> for noise enclosure);</li> <li>• The length of barrier should generally be at least five times greater than its height and the minimum height of a barrier should be such that no part of the noise source will be visible from the noise sensitive receiver being protected.</li> </ul>	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93, Noise Control Ordinance and EIAO Guidance Note NO. 9/2010
S.5.1.1	<b><u>General Construction Noise Control Measures</u></b> <ul style="list-style-type: none"> <li>• The Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted;</li> <li>• The statutory and non-statutory requirements and guidelines shall be complied with;</li> <li>• Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work;</li> </ul>	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	<ul style="list-style-type: none"> <li>• Working methods to minimize the noise impact on the surrounding NSRs shall be formulated and executed, and the implementation of these methods shall be monitored by experienced personnel with suitable training;</li> <li>• Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical;</li> <li>• Unused equipment shall be turned off;</li> <li>• PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;</li> <li>• All plant and equipment shall be maintained regularly; and</li> <li>• Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable.</li> </ul>					
<b>AIR QUALITY IMPACT</b>						
S.5.1.2	<p><b><u>Construction Dust Control Measures</u></b></p> <ul style="list-style-type: none"> <li>• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;</li> <li>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;</li> <li>• Covering of stockpile of excavated dusty materials, if any, with impervious sheeting or spraying with water to maintain the entire surface wet;</li> <li>• Provision of vehicle washing facilities at the entry and exit points of site;</li> <li>• Tarpaulin covering of any dusty materials being transported to and from site by vehicle;</li> <li>• Positioning of construction plant at maximum practicable distance from air sensitive receivers; and</li> <li>• Due to the small size of the works sites and lack of space for stockpiling, excavated materials should be hauled off-site almost immediately. However, in the event of any stockpiled excavated materials, they should be covered with tarpaulin and be removed offsite as soon as practicable to avoid any dust nuisance arising</li> </ul>	To minimize the dust impacts arising from the construction works	Contractor	Work site	Construction Stage	Air Pollution Control (Construction Dust) Regulation

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
<b>WATER QUALITY IMPACT</b>						
S.5.1.3	<p><b><u>Construction Water Quality Impact Measures</u></b></p> <ul style="list-style-type: none"> <li>• Collection of wastewater into a sedimentation tank for treatment before discharge into the public drainage system;</li> <li>• Provision of silt trap and oil interceptor to remove the oil, lubricants, grease, silt, grit and debris from the wastewater prior to discharge to the public stormwater system. The silt traps and oil interceptors should be cleaned and maintained regularly;</li> <li>• Installation of wheel washing facilities to minimize muddy runoff;</li> <li>• Regular maintenance and inspection of drainage systems and erosion control and silt removal facilities;</li> <li>• Management and monitoring of sewage treatment facilities (if any);</li> <li>• Any foul effluent should not be discharged into any public sewer and stormwater drain, unless an effluent discharge permit is obtained under the WPCO by the Contractor;</li> <li>• Coverage of stockpiles of C&amp;D materials (if any) during rainstorms; and</li> <li>• Site toilet facilities, if needed, should be chemical toilets or should have the sewage discharge directed to a foul sewer.</li> </ul>	To reduce water quality impact induced by the construction work	Contractor	Work site	Construction Stage	ProPECC PN1/94; Water Pollution Control Ordinance
<b>WASTE MANAGEMENT</b>						
S.5.1.4	<p><b><u>Construction Waste Management Measures</u></b></p> <ul style="list-style-type: none"> <li>• Scrap metals or abandoned equipment should be recycled if possible;</li> <li>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;</li> <li>• The Contractor should adopt a trip ticket system for the disposal of C&amp;D materials to any designated public filling facility and/or landfill. Independent audits of the Contractor and resident site staff will be undertaken to ensure that the correct procedures are being followed;</li> <li>• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes; and</li> </ul>	To adopt waste management measures in the way of avoiding, minimizing, reusing and recycling so as to reduce waste generation	Contractor	Work site	Construction Stage	Waste Disposal Ordinance (Cap. 354); Waste Disposal (Chemical Waste) (General) Regulation; DEVB TCW No. 6/2010; ETWB TCW No. 19/2005.

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
	<ul style="list-style-type: none"> <li>All general refuse should be segregated and stored in enclosed bins or compaction units and waste separation facilities for paper, aluminum cans, plastic bottles etc. should be provided to facilitate reuse or recycling of materials and their proper disposal.</li> </ul>					
<b>LANDSCAPE AND VISUAL IMPACT</b>						
S.5.1.5	<p><b><u>Landscape and Visual Measures</u></b></p> <ul style="list-style-type: none"> <li>Clear demarcation of works area to prevent damages to existing trees in close proximity;</li> <li>Protection of all trees planned to be retained onsite;</li> <li>Preserving all affected trees by transplanting where practical. Tree transplanting application and tree removal application shall be submitted for approval in accordance with ETWB TCW 3/2006; and</li> <li>Screening of construction works by hoardings/noise barriers around Works area in visually unobtrusive colors.</li> </ul>	To reduce landscape and visual impact by construction works.	Contractor	Work Site and nearby playground	Construction Stage	EIAO; ETWB TCW No. 3/2006.