Leighton-China States Joint Venture

Contract SCL1123 – Exhibition Station & Western Approach Tunnel

Monthly EM&A Report No. 26

for

FEP-13/364/2009/H & FEP-03/376/2009

[Period from 1 to 28 February 2023]

(March 2023)

Verified by: Claudine LEE

Position: Independent Environmental Checker

Date: 10 March 2023

Leighton-China State Joint Venture

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(March 2023)

Certified by: FUNG Yiu Wah

Position: Environmental Team Leader

Date: 13 March 2023

Leighton – China State J.V.

Shatin to Central Link -
Hung Hom to Admiralty Section

Works Contract 1123 -
CEDD Entrusted Work for Road P2 & other roads and Slip Road 3

Monthly EM&A Report for
February 2023

[March 2023]

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EXECUTIVE SUMMARY

Shatin to Central Link Contract 1123 – CEDD Entrusted Work for Road P2 & other roads and Slip Road 3 (hereafter called "the Project") covers part of the construction of CEDD entrusted work under the granted Further Environmental Permit: FEP–03/376/2009 and FEP–13/364/2009 respectively.

The Project comprises the construction of Road P2 and other roads which are classified as primary/district distributor roads and Slip Road 3.

The EM&A programme commenced on 25 January 2021.The impact EM&A for the Project includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 28 February 2023. As informed by the Contractor, major activities in the reporting period were:

Location	**Site Activities**
Road P2 – West (Slip Road 3)	• Road and kerbing and railing repairs and Final Asphalt paving • Road marking and signage
Road P2 – East (Hung Hing Road)	• Road marking and signage • Coach Park – Construct concrete pavement works • Fenwick Street Roundabout – Install road lighting, landscaping
Road P2 – Permanent PTI (Public Transport Interchange)	• Footpath / landscape, irrigation system

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level of air quality was recorded in the reporting month.

Breaches of Action and Limit Levels for Noise

Regular Noise Monitoring

No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

No exceedance of Limit Level of noise was recorded in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons and successful prosecution were received in the reporting month.

Reporting Changes

There was no reporting change in the reporting month.

Future Key Issues

Key issues to be considered in the next three months included:

Location	Site Activities
Road P2 – West (Slip Road 3)	• Completed
Road P2 – East (Hung Hing Road & Convention Avenue)	• Fleming Road to Tonnochy Road – Completed • Tonnochy Road to Marsh Road – Soft landscape works
Road P2 – PTI (Public Transport Interchange)	• Substantial completed • Defects rectification.

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality and waste management.

1 INTRODUCTION

Leighton – China State Joint Venture (JV) was commissioned by MTR as the Civil Contractor for CEDD Entrusted Works under Contract 1123. AECOM Asia Company Limited (AECOM) was appointed by JV as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Project.

1.1 Purpose of the Report

1.1.1 This is the 26th monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period between 1 and 28 February 2023.

1.2 Report Structure

1.2.1 This monthly EM&A Report is organized as follows:

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Requirement
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection and Audit
- Section 7: Environmental Non-conformance
- Section 8: Future Key Issues
- Section 9: Conclusions and Recommendations

2 PROJECT INFORMATION

2.1 Background

2.1.1 Road P2 and other roads which are classified as primary/district distributor roads identified as DP2 which covered in the Environmental Permit No. EP-376/2009 in the approved Wan Chai Development Phase II (WDII) and Central – Wan Chai Bypass (CWB) comprising (i) a dual 2-lane primary distributor road, Road P2; and (ii) other new primary and district distributor roads connecting to the slip roads of the Central-Wan Chai Bypass.

2.1.2 Slip road 3 identified as part of DP1 which covered in the Environmental Permit No. EP-364/2009/H in the approved Wan Chai Development Phase II (WDII) and Central – Wan Chai Bypass (CWB) comprising (i) slip roads to connect the CWB to the local road system in the Wan Chai North and Causeway Bay area; and (ii) associated road lighting, road signing, traffic control and surveillance system (iii) other associated works.

2.1.3 The Environmental Impact Assessment Report for Central - Wan Chai Bypass and Island Eastern Corridor Link (CWB&IECL) EIA Report (Register No. AEIAR-041/2001) and the Wan Chai Development Phase II and Central-Wan Chai Bypass (WDII&CWB) EIA Report (Register No. AEIAR-125/2008) which were approved on 31 August 2001 and 11 December 2008 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permits (EPs) were granted on 13 November 2009 and 22 April 2020 respectively, which covers Road P2 and other roads which are classified as primary/district distributor roads **[DP2]** and Central – Wan Chai Bypass (CWB) including its Road Tunnel and Slip Roads **[DP1]** (EP No.: EP-376/2009 and EP-364/2009/H), for the construction and operation. Further Environmental Permits (FEP No. FEP-03/376/2009 and FEP-13/364/2009/H) were both subsequently granted from the Director of Environmental Protection (DEP) on 2 June 2020, which cover the construction works for DP2 and a part of DP1 respectively.

2.1.4 The site layout plan of the Project is shown in **Figure 1.1**.

2.2 Site Description

2.2.1 The major construction activities under CEDD Entrusted Works of Contract 1123 include:

a) Site preparation;
b) Construct for dual 2-lane primary distributor road, Road P2;
c) Construct for other new primary and district distributor roads connecting to the slip roads of the Central-Wan Chai Bypass;
d) Construct for slip roads to connect the CWB to the local road system in the Wan Chai North and Causeway Bay area;
e) Construct for associated road lighting, road signing, traffic control and surveillance system; and
f) Construct for other associated works.

2.3 Construction Programme and Activities

2.3.1 The major construction activities undertaken in the reporting month are summarised below:

Location	Site Activities
Road P2 – West (Slip Road 3)	• Road and kerbing and railing repairs and Final Asphalt paving • Road marking and signage
Road P2 – East (Hung Hing Road)	• Road marking and signage • Coach Park – Construct concrete pavement works • Fenwick Street Roundabout – Install road lighting, landscaping
Road P2 – Permanent PTI (Public Transport Interchange)	• Footpath / landscape, irrigation system

2.3.2 The construction programme is presented in **Appendix A**.

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 2.1.**

Table 2.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Atg Chief Construction Manager – SCL Civil	Mr. Raymond Koo	2171 3801	3959 2200
		SCL Project Environmental Team Leader	Mr. Alex Siu	3127 6292	3127 6422
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Ms. Claudine Lee	2859 5409	2540 1580
JV	Contractor	Project Director	Mr. Mark Challis	3973 1997	31051126
		Environmental Engineer	Mr. Andy Leung	3973 1498	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y W Fung	3922 9366	2317 7609

2.5 Status of Environmental Licences, Notification and Permits

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.2**.

Table 2.2 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
Environmental Permit				
FEP-03/376/2009	2 Jun 2020	End of Contract	Valid	
FEP-13/364/2009/H	2 Jun 2020	End of Contract	Valid	
Construction Noise Permit				
-	-	-	-	-
Wastewater Discharge License				
WT00040510-2022	10 May 2022	31 May 2027	Valid	For W21 & W22
Chemical Waste Producer Registration				
5213-135-L2881-01	2 Apr 2015	End of Contract	Valid	For whole site at Wan Chai Area
Marine Dumping Permit				
-	-	-	-	-
Billing Account for Construction Waste Disposal				
7021736	16 Feb 2015	End of Contract	Valid	For Disposal of C&D Waste
Notification Under Air Pollution Control (Construction Dust) Regulation				
385128	1 Mar 2015	End of Contract	Valid	For whole site at Wan Chai Area

3 ENVIRONMENTAL MONITORING REQUIREMENT

3.1 Construction Dust Monitoring

Monitoring Requirements

3.1.1 In accordance with the approved EM&A Manuals, 24-hour and 1-hour Total Suspended Particulates (TSP) levels at the designated air quality monitoring station is required. Impact 24-hour monitoring should be carried out for at least once every 6 days and 1-hour TSP monitoring should be done at least 3 times every 6 days while the highest dust impact is expected. The Action and Limit level of the air quality monitoring is provided in **Appendix D**.

Monitoring Equipment

3.1.2 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at the designated monitoring stations. The HVS meets all the requirements of the EM&A Manual.

3.1.3 A portable direct reading dust meter was used to carry out the 1-hour TSP monitoring.

3.1.4 Brand and model of the equipment is given in **Table 3.1**.

Table 3.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
High Volume Sampler (24-hour TSP)	Andersen Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. GS 2310 (S/N:10273)) (Model No. GS 2310 (S/N:3384))
Calibration Kit (24-hour TSP)	TISCH Environmental Orifice (Model TE-5025A (S/N: 988))
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3 (A.005.07a & A.005.10a) & LD-3B (A.005.13a))

Monitoring Locations

3.1.5 The monitoring station for construction dust monitoring pertinent to the Project has been identified based on the approved EM&A Manual for SCL (HUH-ADM) of the Project. The location of the construction dust monitoring stations are summarised in **Table 3.2** and shown in **Figure 3.1**.

Table 3.2 Locations of Construction Dust Monitoring Station

Station ID	Dust Monitoring Station
CMA5b[1]	Pedestrian Plaza
CMA6a[1]	WDII PRE Site Office

Remark:
1. According to the updated site layout of CEDD Entrusted Works and Updated EM&A Manual for EP-376/2009 and EP-364/2009, Pedestrian Plaza (CMA5b) and WDII PRE Site Office (CMA6A) were selected as the most affected sensitive receiver during the construction phase.

Monitoring Methodology

3.1.6 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS as far as practicable: -

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) Two samplers should not be placed less than 2m apart from each others;

(iii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iv) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(v) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
(vi) No furnace or incinerator flues nearby.
(vii) Airflow around the sampler was unrestricted.
(viii) The sampler was located more than 20 meters from any dripline.
(ix) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(x) Permission was obtained to set up the samplers and access to the monitoring station.
(xi) A secured supply of electricity was obtained to operate the sampler.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.
(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminium strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.3 m^3/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.
(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.

(ii) HVSs were calibrated using TE-5025A Calibration Kit upon installation and thereafter at bi-monthly intervals.
(iii) Calibration certificate of the TE-5025A Calibration Kit and the HVSs are provided in **Appendix E**.

3.1.7 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:
(i) Turn the power on.
(ii) Close the air collecting opening cover.
(iii) Push the "TIME SETTING" switch to [BG]
(iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
(v) Turn the knob at SENSI ADJ position to insert the light scattering plate.
(vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
(vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
(viii) Pull out the knob and return it to MEASURE position.
(ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
(x) Lower down the air collection opening cover.
(xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.1.8 The schedule for environmental monitoring in February 2023 is provided in **Appendix F.**

3.2 Construction Noise Monitoring

Monitoring Requirements

3.2.1 In accordance with the EM&A Manual, impact noise monitoring should be conducted for at least once a week during the construction phase of the Project. **Table 3.3** summarises the monitoring parameters, frequency and duration of impact noise monitoring. The Action and Limit level of the noise monitoring is provided in **Appendix D**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Parameter and Duration	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. Leq, L_{10} and L_{90} would be recorded.	At least once per week

Monitoring Equipment

3.2.2 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.4**.

Table 3.4 Noise Monitoring Equipment for Regular Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	Model No. B&K 2250 (S/N: 3001291)
Acoustic Calibrator	Model No. B&K 4231 (S/N: 3006428)

Monitoring Locations

3.2.3 The monitoring station for construction noise monitoring pertinent to the Project has been identified based on the approved EM&A Manual for SCL (HUH-ADM) of the Project. Location of the noise monitoring station is summarised in **Table 3.5** and shown in **Figure 3.1**.

Table 3.5 Noise Monitoring Station during Construction Phase

Identification No.	District	Alternative Noise Monitoring Location
M1a[1]	Wan Chai	Footbridge for Ex-Harbour Road Sports Centre

Remark:
1. According to the updated site layout of CEDD Entrusted Works and Updated EM&A Manual for EP-376/2009 and EP-364/2009, Footbridge for Ex-Harbour Road Sports Centre (M1a) was selected as the most affected sensitive receiver during the construction phase.

Monitoring Methodology

3.2.4 Monitoring Procedure

(a) Façade measurements were made at M1a.

(b) The battery condition was checked to ensure the correct functioning of the meter.

(c) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

(i) frequency weighting: A
(ii) time weighting: Fast

(iii) time measurement: $L_{eq(30\text{-}minutes)}$ during non-restricted hours i.e. 0700 – 1900 on normal weekdays.

(d) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94 dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(e) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(f) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(g) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.2.5 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.2.6 The schedule for environmental monitoring in February 2023 is provided in **Appendix F**.

3.2.6

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

4.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix C.** Status of required submissions under the EP during the reporting period is summarised in **Table 4.1**.

Table 4.1 Status of Required Submission under Further Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.3 (FEP-13//364/2009/H & FEP-03/376/2009)	Monthly EM&A Report for January 2022	10 February 2023

5 MONITORING RESULTS

5.1 Construction Dust Monitoring

5.1.1 The monitoring results for 24-hour TSP and 1-hour TSP are summarised in **Table 5.1** and **Table 5.2** respectively. Detailed air quality monitoring results and wind monitoring data extracted from the nearest Automatic Weather Station are presented in **Appendix G**.

Table 5.1 Summary of 24-hour TSP Monitoring Result in the Reporting Period

ID	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
CMA5b	36.4	26.6 – 47.4	209.9	260
CMA6a	24.2	15.3 – 32.2	207.1	260

Table 5.2 Summary of 1-hour TSP Monitoring Result in the Reporting Period

ID	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
CMA5b	65.3	62.0 – 67.8	339.7	500
CMA6a	62.3	59.9 – 65.7	333	500

5.1.2 No Action and Limit Level exceedance were recorded for 1-hour TSP monitoring at the monitoring locations in the reporting month.

5.1.3 No Action and Limit Level exceedance were recorded for 24-hour TSP monitoring at the monitoring locations in the reporting month.

5.1.4 The event and action plan is annexed in **Appendix I**.

5.1.5 Major dust sources during the monitoring included construction dust, nearby traffic emission and other nearby construction sites.

5.2 Regular Construction Noise Monitoring

5.2.1 The monitoring results for noise are summarized in **Table 5.3** and the monitoring data is provided in **Appendix H**.

Table 5.3 Summary of Construction Noise Monitoring Results in the Reporting Period

ID	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
M1a(*)	<Baseline	75

(*) Baseline correction will be made to the measured L_{eq} when the measured noise level exceeded the corresponding baseline noise level and presented in the table.

5.2.2 No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

5.2.3 No Limit Level exceedance of noise was recorded at the monitoring station in the reporting month.

5.2.4 The event and action plan is annexed in **Appendix I**.

5.2.5 Major noise sources during the monitoring included construction noise from the Project site, nearby traffic noise and the community.

5.3 Waste Management

5.3.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

5.3.2 As advised by the Contractor, 9m^3 of inert C&D material was generated and disposed of as public fill in the reporting month. No inert C&D materials were reused in other projects or in the Contract in the reporting month. No fill material was imported in the reporting month. No general refuse was generated in the reporting month. No metal, paper/cardboard packaging material, plastic was collected by recycling contractor in the reporting month. No chemical waste was collected by licensed contractor in the reporting period. No Type 1 and Type 2 of Marine sediment were disposed of at Confined Marine Disposal Facility to the East of Sha Chau. The waste flow table is annexed in **Appendix K**.

5.3.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

5.3.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

5.4 Landscape and Visual

5.4.1 Weekly inspection of the implementation of landscape and visual mitigation measures was conducted. A summary of the site inspection is provided in **Appendix C**. The observations and recommendations made during the site inspections are presented in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix C**.

6.1.2 In the reporting month, 4 site inspections were carried out on 1, 8, 15 and 22 February 2023. Joint inspections with the IEC, ER, the Contractor and the ET were conducted on 15 February 2023. No non-compliance was recorded during the site inspection. Details of observations recorded during the site inspections are presented in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	Nil	Nil	Nil
Noise	Nil	Nil	Nil
Water Quality	Nil	Nil	Nil
Waste/ Chemical Management	Nil	Nil	Nil
Landscape & Visual	Nil	Nil	Nil
Permits/ Licenses	Nil	Nil	Nil

6.1.3 No follow up action was requested by Contractor's ET during the site inspection on 1, 8, 15 and 22 February 2023.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

7.1.1 All 24-hour TSP result was below the Action and Limit level at all monitoring locations in the reporting month.

7.1.2 All 1-hour TSP result was below the Action and Limit level at all monitoring locations in the reporting month

7.1.3 No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

7.1.4 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

7.2 Summary of Environmental Non-Compliance

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

7.3 Summary of Environmental Complaints

7.3.1 No environmental related complaint was received in the reporting month. Cumulative statistics on environmental complaints is provided in **Appendix J**.

7.4 Summary of Environmental Summon and Successful Prosecutions

7.4.1 No environmental related prosecution or notification of summons was received in the reporting month. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix J**.

8 FUTURE KEY ISSUES

8.1 Construction Programme for the Next Three Month

8.1.1 The major construction works between March 2023 to May 2023 will be:

Location	Site Activities
Road P2 – West (Slip Road 3)	• Completed
Road P2 – East (Hung Hing Road & Convention Avenue)	• Fleming Road to Tonnochy Road – Completed • Tonnochy Road to Marsh Road – Soft landscape works
Road P2 – PTI (Public Transport Interchange)	• Substantial completed • Defects rectification.

8.2 Key Issues for the Coming Month

8.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality and waste management.

8.3 Monitoring Schedule for the Next Three Month

8.3.1 The tentative schedules for environmental monitoring in between March to May 2023 are provided in **Appendix F**.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 24-hour TSP, 1-hour TSP and noise monitoring were carried out in the reporting month.

9.1.2 No Action and Limit Level exceedance was recorded for 24-hour TSP monitoring at the monitoring locations in the reporting month.

9.1.3 No Action and Limit Level exceedance was recorded for 1-hour TSP monitoring at the monitoring locations in the reporting month

9.1.4 No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

9.1.5 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

9.1.6 4 nos. of environmental site inspections were carried out in February 2023. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

9.1.7 No environmental complaint was received in the reporting month.

9.1.8 No notification of summons and successful prosecution were received in the reporting month.

9.1.9 Referring to the Contractor's information, no notification of summons and successful prosecution was received in the reporting month.

9.2 Recommendations

9.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided: -

Air Quality Impact

- No specific observation was identified in the reporting month.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- No specific observation was identified in the reporting month.

Chemical and Waste Management

- No specific observation was identified in the reporting month.

Landscape & Visual Impact

- No specific observation was identified in the reporting month.

Permits/licenses

- No specific observation was identified in the reporting month.

FIGURES

835500 E

836000 E

835500 E

DP1 連接路3 (FEP-03/364/2009/H)
SLIP ROAD 3 (FEP-03/364/2009/H)

816500 N

DP2 主要幹道和地區幹道 (FEP-03/376/2009)
PRIMARY AND DISTRICT DISTRIBUTOR ROADS(FEP-03/376/2009)

本許可證所涵蓋的工程項目範圍
PROJECT SCOPE COVERED BY THIS PERMIT

N

VICTORIA HARBOUR

維多利亞港
VICTORIA HARBOUR

維多利亞港
VICTORIA HARBOUR

60041297/RW/100/1003

60041297/RW/100/1004

816000 N

60041297/RW/100/1002

60041297/RW/100/1001

CAUSEWAY BAY

ADMIRALTY

815500 N

WAN CHAI

REV. 修訂	DESCRIPTION 內容摘要	D.E.	P.E. CHECKED 審核	DATE 日期
–	TENDER DRAWING	PSL	SLYY	OCT 13

土木工程拓展署
Civil Engineering and Development Department

CEDD ENTRUSTED WORKS

Site Layout Plan of CEDD Entrusted Works under Contract 1123

AECOM

DRG.NO. 圖紙編號 Figure 1.1

DESIGNED BY 設計 ST	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人 TKH
DRAWN BY 繪圖 TS	STATUS 階段	
SCALE 比例 A1 1:2500		
DIMENSIONS ARE IN 尺寸單位 METRES		

Plot File by : 1/11/2013

...\RW_01000.dgn

DP1 連接路3 (FEP-03/364/2009/H)
SLIP ROAD 3 (FEP-03/364/2009/H)

DP2 主要幹道和地區幹道 (FEP-03/376/2009)
PRIMARY AND DISTRICT DISTRIBUTOR ROADS(FEP-03/376/2009)

本許可證所涵蓋的工程項目範圍
PROJECT SCOPE COVERED BY THIS PERMIT

空氣監察站
Dust Monitoring Station

噪音監察站
Noise Monitoring Station

835500 E
836000 E
835500 E
816500 N
816000 N
815500 N
N

VICTORIA HARBOUR
維多利亞港
VICTORIA HARBOUR
維多利亞港
VICTORIA HARBOUR

60041297/RW/100/1001
60041297/RW/100/1002
60041297/RW/100/1003
60041297/RW/100/1004

CMA5b - Pedestrian Plaza
M1a - Footbridge for Ex-Harbour Road Sports Centre
CMA6a - WDII PRE Site Office

ADMIRALTY
WAN CHAI
CAUSEWAY BAY

REV. 修訂	DESCRIPTION 內容摘要	D.E.	P.E. CHECKED 審核	DATE 日期
–	TENDER DRAWING	PSL	SLYY	OCT 13

CEDD 土木工程拓展署 Civil Engineering and Development Department

CEDD ENTRUSTED WORKS

Air Quality and Noise Monitoring Locations for CEDD Entrusted Works

AECOM

DRG.NO. 圖紙編號 Figure 3.1

DESIGNED BY 設計 ST	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人 TKH
DRAWN BY 繪圖 TS	STATUS 階段	
SCALE 比例 A1 1:2500		
DIMENSIONS ARE IN 尺寸單位 METRES		

Plot File by : 1/11/2013
...\RW_01000.dgn

APPENDIX A

Construction Programme

Data Date: 28-Feb-23
Print Date: 02-Mar-23

MTR Shatin to Central Link - Contract 1123
EXH and Western Approach Tunnel

2023

Optional Works							
Option 1B - CEDD Entrusted Works							
Option 1B - CEDD Entrusted Works							
Option 1 B - Road P2 (West of Flemming Road)							
Coach Park							
1123.O1B.4110	Construct Concrete Pavement Works to Coach Park	07-Nov-22	07-Feb-23	07-Nov-22 A	07-Mar-23	100%	6
1123.O1B.4120	Install CP Lighting and Signages	07-Feb-23	14-Feb-23	08-Mar-23	14-Mar-23	0%	6
1123.O1B.4130	CP Road Markings and Signages	14-Feb-23	21-Feb-23	15-Mar-23	21-Mar-23	0%	6
Fenwick Street Roundabout							
1123.O1B.4780	Install Road Lighting and Signages	26-Sep-22	03-Feb-23	26-Sep-22 A	03-Mar-23	90%	3
1123.O1B.4790	Landscaping - Top Soil + Ground Cover	26-Sep-22	03-Feb-23	26-Sep-22 A	10-Feb-23 A	100%	0
Option 1B- CEDD Entrusted Works (Road P2 East of Flemming Road)							
After TTM 6D- Phase 3							
Fleming Road to Tonnochy Road							
1123.O1B.3905	A/M - Irrigation System Installation	02-Jun-22	03-Feb-23	02-Jun-22 A	03-Mar-23	98%	3

Milestone
Actual Work
Remaining Works
AT Milestone
Last Month Milestone
Last Month

3 Month Rolling Programme
Mar to May 2023

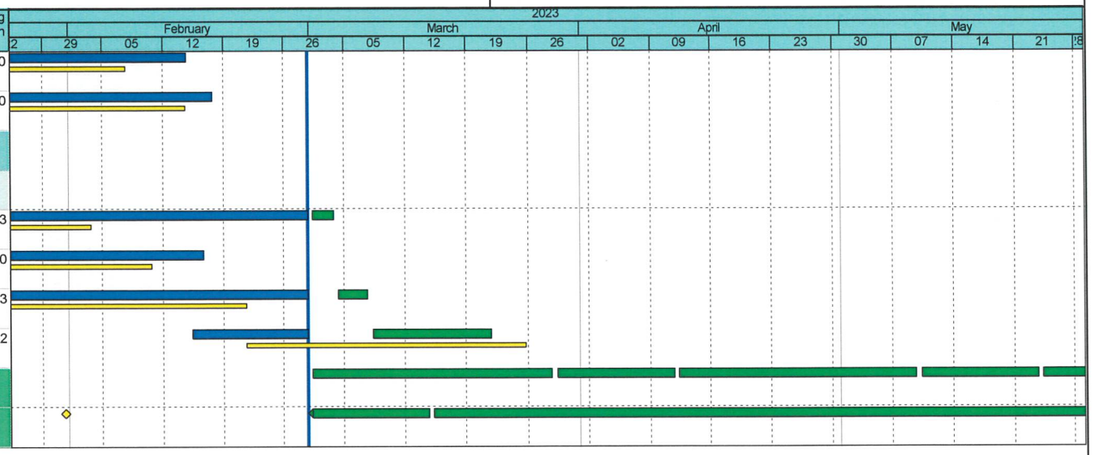
Project ID: 1123-MR98
Layout: 1123 - PMP Progress_3MR98

Date	Revision	Checked	Approved
16-Mar-15	0		
12-May-15	A		
16-Jun-15	B		

Data Date: 28-Feb-23
Print Date: 02-Mar-23

MTR Shatin to Central Link - Contract 1123
EXH and Western Approach Tunnel

Activity ID	Activity Name	BL Project Start	BL Project Finish	Start	Finish	Physical % Complete	Remaining Duration
1123.O1B.3915	Footpath/Landscape- Landscape -Top Soil	10-Jun-22	07-Feb-23	10-Jun-22 A	14-Feb-23 A	100%	0
1123.O1B.3925	Footpath/Landscape- Soft Landscape works	10-Jun-22	14-Feb-23	10-Jun-22 A	17-Feb-23 A	100%	0
After TTM 6D-Pahse 4							
Tonnochy Road to Marsh Road							
1123.O1B.4025	A/M - Irrigation System Installation	24-Oct-22	03-Feb-23	24-Oct-22 A	03-Mar-23	90%	3
1123.O1B.4932	Footpath- Backfill and Paving Block	23-Nov-22	10-Feb-23	23-Nov-22 A	16-Feb-23 A	100%	0
1123.O1B.4035	A/M - Landscape -Top Soil	23-Jan-23	21-Feb-23	23-Jan-23 A	07-Mar-23	60%	3
1123.O1B.4045	A/M - Soft Landscape works	21-Feb-23	25-Mar-23	15-Feb-23 A	21-Mar-23	0%	12
Option 15 - Floating Pontoon Barging Facility at North Seashore of the Temp PTI							
Option 16 - Temporary Reprovisioning of Model Car Racing Track							



Milestone
Remaining Works
Last Month Milestone
Last Month
Actual Work
AT Milestone

3 Month Rolling Programme
Mar to May 2023

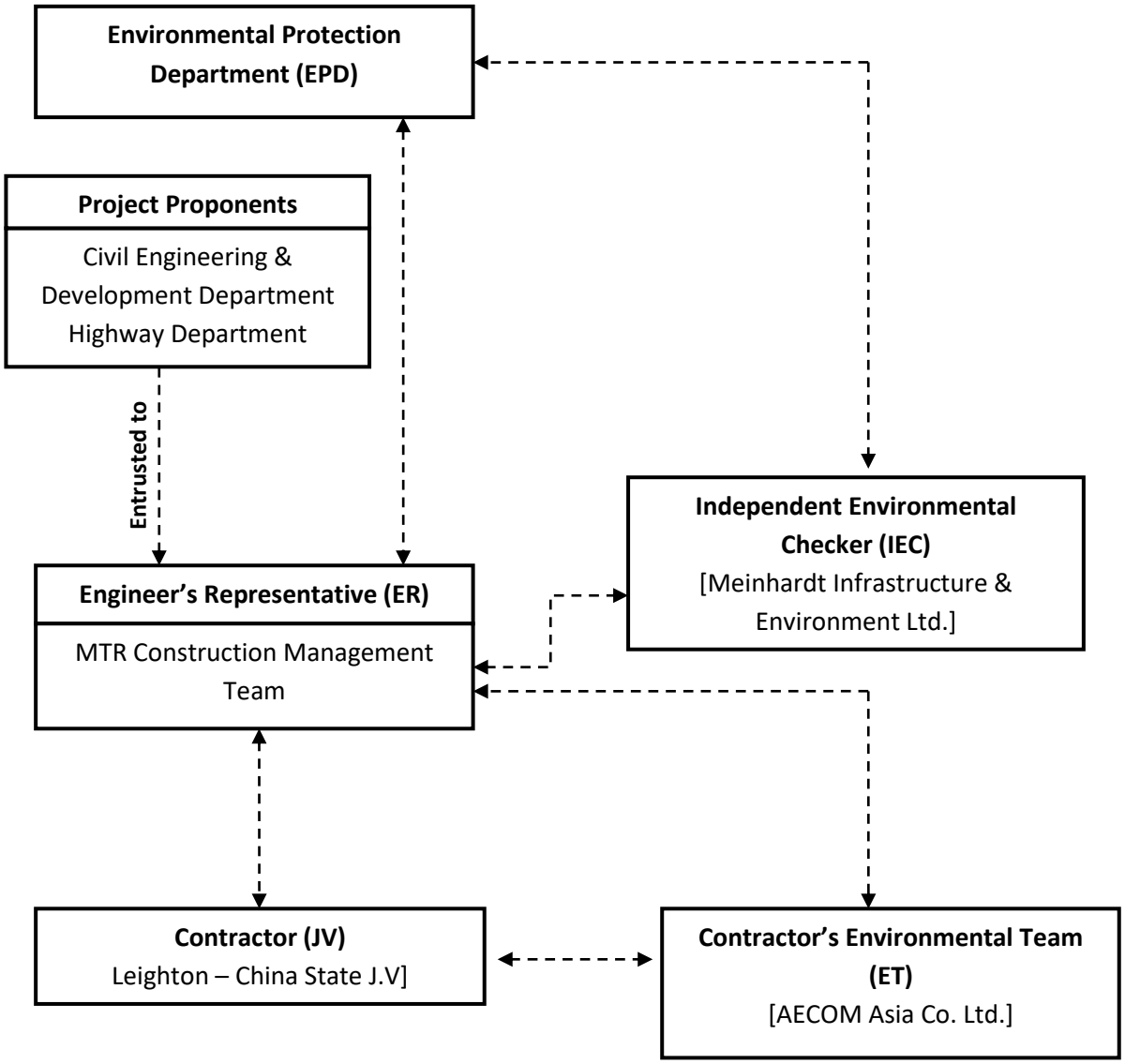
Project ID: 1123-MR98
Layout: 1123 - PMP Progress_3MR98

Date	Revision	Checked	Approved
16-Mar-15	0		
12-May-15	A		
16-Jun-15	B		

APPENDIX B

Project Organization Structure

Appendix B Project Organisation Structure



APPENDIX C

Implementation Schedule of Environmental Mitigation Measures

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Construction Dust Impact					
Construction Phase					
S3.6.5	Four times a day watering of the work site with active operations	Contractor	Works areas	Construction phase	V
S3.8.1	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts. • Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition; • Watering during excavation and material handling; • Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	Contractor	Works areas	Construction phase	V V V V
/	***Dust suppression measures (con't)*** • De-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement • The portion of any road where along the site boundary should be kept clear of dusty materials. • Use of frequent watering for any dusty construction process (e.g. breaking works) to reduce dust emissions.	Contractor	Works areas	Construction phase	N/A V V
/	***Emission from Vehicles and Plants*** • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Contractor	Works areas	Construction phase	V V V
Airborne Noise Impact					
Construction Phase					
S4.9.4	***Good Site Practice:*** • Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program. • Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program. • Mobile plant, if any, shall be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum. • Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from onsite construction activities.	Contractor	Works areas	Construction phase	V V V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
For DP1 – CWB (Within the Project Boundary)					
S4.8.3 – S4.8.5	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks: • Slip road 8 tunnel • Construction of diaphragm wall and substructures of the tunnel approach ramp • Excavation • Construction of slabs • Backfill • Demolition and construction of substructures for the IEC • Demolition works of existing piers and crossheads of the marine section of the existing IEC Use of PME grouping for the following tasks: • At-grade roadwork • Substructure for IECL connection	Contractor	Works areas	Construction phase	N/A N/A V N/A N/A N/A N/A V N/A
For DP2 – WDII Major Roads (Road P2)					
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks: • Temporary road diversion • Resurfacing • At-grade roadwork				V V V
Water Quality Impact					
Construction Phase					
S5.8	***Construction Runoff and Drainage:*** • Use of sediment traps, wheel washing facilities for vehicles leaving the site, and adequate maintenance of drainage systems to prevent flooding and overflow; • Permanent drainage channels shall incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94; • A sediment tank constructed from preformed individual cells of approximately 6 - 8 m^3 capacity can be used for settling ground water prior to disposal; • Oil interceptors shall be provided in the drainage system for the tunnels and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor shall have a bypass to prevent flushing during periods of heavy rain; • Precautions and actions to be taken when a rainstorm is imminent or forecast, and during or after rainstorms. Particular attention shall be paid to the control of any silty surface runoff during storm events; • On-site drainage system shall be installed prior to the commencement of other construction activities. Sediment traps shall be installed in order to minimize the sediment loading of the effluent prior to discharge; • All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge shall be adequately designed for the controlled release of storm flows. All sediment control measures shall be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage shall be reinstated to its original condition when the construction work is finished or the temporary diversion is no longer required; • All fuel tanks and store areas shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity;	Contractor	Works areas	Construction phase	V V V V V V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	• Minimum distances of 100 m shall be maintained between the storm water discharges and the existing or planned WSD flushing water intakes during construction phase				V
S5.8	***Sewage from Construction Work Force:*** Construction work force sewage discharges on site shall be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage shall be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Contractor	Works areas	Construction phase	V
S5.8	***Floating Debris and Refuse:*** Collection and removal of floating refuse shall be performed at regular intervals on a daily basis. The contractor shall be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Contractor	Works areas and adjacent water	Construction phase	N/A
S5.8	***Storm Water Discharges:*** Minimum distances of 100 m shall be maintained between the existing or planned stormwater discharges and the existing or planned WSD flushing water intakes.	Contractor	Works areas and adjacent water	Construction phase	V
Waste Management Implications					
Construction Phase					
S6.7.7	***Good Site Practices:*** Recommendations for good site practices during the construction activities include: • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • Training of site personnel in proper waste management and chemical waste handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Appropriate measures to minimise windblown litter and dust during transportation 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; and • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Contractor	Works areas	During planning and design stage, and construction stage	V V V V V V V
S6.7.8	***Waste Reduction Measures:*** Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of the existing waterfront structures to recover recyclable portions such as metals. • 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 aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force. • Any unused chemicals or those with remaining functional capacity shall be recycled. • Use of reusable non-timber formwork, such as in casting the tunnel box sections, to reduce the amount of C&D material. • Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill. • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. • Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Contractor	Works areas	During planning and design stage, and construction stage	V V V V V V V V V

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S6.7.10	***General Refuse:*** • General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material. • A collection area shall be provided where wastes can be stored and loaded prior to removal from site. An enclosed and covered area is recommended to reduce the occurrence of 'wind blow' light material.	Contractor	Works areas	Construction phase	V V
S6.7.11	***Chemical Wastes:*** After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) shall be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals shall be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Contractor	Works areas	Construction phase	V
S6.7.12 – S6.7.13	***Construction and Demolition Material:*** • C&D material shall be sorted on-site into inert C&D material (that is, public fill) and C&D waste. All the suitable inert C&D material shall be broken down to 250 mm in size for reuse as public fill in the WDII reclamation. C&D waste, such as wood, glass, plastic, steel and other metals shall be reused or recycled and, as a last resort, disposed of to landfill. A suitable area shall be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials. • In order to monitor the disposal of public fill and C&D waste at public fill reception facilities and landfills, respectively, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements and implemented by the Environmental Team undertaking the environmental monitoring and audit work. An Independent Environment Checker shall be responsible for auditing the results of the system.	Contractor	Works areas	Construction phase	V V
S6.7.14	***Bentonite Slurry:*** The disposal of residual used bentonite slurry shall follow the good practice guidelines stated in ProPECC PN 1/94 “Construction Site Drainage” and listed as follows: • If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis. • If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the Technical Memorandum of Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. • If the used bentonite slurry is intended to be disposed to public fill reception facilities, it will be mixed with dry soil on site before disposal.	Contractor	Works areas	Construction phase	N/A N/A N/A
/	***Accidental spillage*** To prevent accidental spillage of chemicals, the following is recommended: • Proper storage and handling facilities will be provided. • All the tanks, containers, storage area will be bunded and the locations will be locked as far as possible from the sensitive watercourse and stormwater drains. • The contractor will register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities will be stored with suitable labels and warnings. • Disposal of chemical wastes will be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	Contractor	Works areas	Construction phase	V V V V
Land Contamination Impact					
S.7.1.1	As no potential contaminative land uses were identified within the Study Area, adverse land contamination impacts associated with the construction and operation of the Project is not expected. As such, environmental protection and mitigation measures are considered not necessary and will not be covered in this EM&A Manual.	-	-	-	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
Landscape and Visual					
Construction Phase					
For DP1 – CWB (Within the Project Boundary) and DP2 - WDII Major Roads (Road P2)					
Table 10.5	CM1 - Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Contractor	Works areas	Construction phase	V
	CM2 - Existing trees to be retained on site shall be carefully protected during construction.				N/A
	CM3 - Trees unavoidably affected by the works shall be transplanted where practical.				N/A
	CM4 - Compensatory tree planting shall be provided to compensate for felled trees.				N/A
	CM5 - Control of night-time lighting.				V
	CM6 - Erection of decorative screen hoarding compatible with the surrounding setting.				N/A

Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX D

Summary of Action and Limit Levels

Appendix D – Summary of Action and Limit Levels

Table 1 Action and Limit Levels for 24-hour TSP

ID	Location	Action Level	Limit Level
CMA5b	Pedestrian Plaza	209.9 $\mu g/m^3$	260 $\mu g/m^3$
CMA6a	WDII PRE Site Office	207.1 $\mu g/m^3$	260 $\mu g/m^3$

Table 2 Action and Limit Levels for 1-hour TSP

ID	Location	Action Level	Limit Level
CMA5b	Pedestrian Plaza	339.7 $\mu g/m^3$	500 $\mu g/m^3$
CMA6a	WDII PRE Site Office	333 $\mu g/m^3$	500 $\mu g/m^3$

Table 3 Action and Limit Levels for Construction Noise (0700 – 1900 hrs of normal weekdays)

ID	Location	Action Level	Limit Level
M1a	Footbridge at EX-Wanchai Harbour Road Sports Centre	When one documented complaint is received	75 dB(A)

APPENDIX E

Calibration Certificates of Equipments

TISCH Environmental

RECALIBRATION DUE DATE:
June 28, 2023

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	June 28, 2022	**Rootsmeter S/N:** 438320	**Ta:** 296	°K
Operator:	Jim Tisch		**Pa:** 755.4	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **0988**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3700	3.2	2.00
2	3	4	1	0.9730	6.4	4.00
3	5	6	1	0.8710	7.9	5.00
4	7	8	1	0.8310	8.8	5.50
5	9	10	1	0.6830	12.7	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)		Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9964	0.7273	1.4147		0.9958	0.7268	0.8853
0.9922	1.0197	2.0007		0.9915	1.0190	1.2520
0.9902	1.1368	2.2368		0.9895	1.1361	1.3997
0.9890	1.1901	2.3460		0.9884	1.1894	1.4680
0.9838	1.4405	2.8294		0.9832	1.4395	1.7705
QSTD	**m=**	**1.98736**		**QA**	**m=**	**1.24445**
	b=	**-0.02635**			**b=**	**-0.01649**
	r=	**0.99994**			**r=**	**0.99994**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

ch Environmental, Inc.
5 South Miami Avenue
lage of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	WDII PRE Site Office	Operator:	Choi Wing Ho
Cal. Date:	9 Jan 2023	Next Due Date:	9 Mar 2023
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	293.0	Pressure, Pa (mmHg)	763.7

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.98736	Intercept, bc	-0.02635
Last Calibration Date:	28 Jun 2022	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	28 Jun 2023	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X-axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.0	2.67	1.36	45.0	45.49
13	6.0	2.48	1.26	40.0	40.44
10	4.6	2.17	1.10	33.0	33.36
7	3.3	1.84	0.94	25.0	25.27
5	2.5	1.60	0.82	20.0	20.22

By Linear Regression of Y on X

Slope , mw = **46.7579** **Intercept, bw =** **-18.2672**

Correlation Coefficient* = **0.9995**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = IC x [(Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **42.06**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 09/01/2023

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Pedestrian Plaza	Operator:	Choi Wing Ho
Cal. Date:	10-Feb-23	Next Due Date:	10-Apr-23
Equipment No.:	A-001-70T	Serial No.	10273

Ambient Condition			
Temperature, Ta (K)	295	Pressure, Pa (mmHg)	759.9

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.98736	Intercept, bc	-0.02635
Last Calibration Date:	28-Jun-22	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jun-23				

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	7.1	2.68	1.36	44.0	44.22
13	5.8	2.42	1.23	38.0	38.19
10	5.0	2.25	1.14	33.0	33.17
7	3.6	1.91	0.97	25.0	25.13
5	2.8	1.68	0.86	20.0	20.10

By Linear Regression of Y on X

Slope , mw = 48.5237 **Intercept, bw =** -21.8770

Correlation Coefficient* = 0.9988

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **41.00**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 10/02/23

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Pedestrian Plaza	Operator:	Choi Wing Ho
Cal. Date:	10-Dec-22	Next Due Date:	10-Feb-23
Equipment No.:	A-001-70T	Serial No.	10273

Ambient Condition			
Temperature, Ta (K)	291	Pressure, Pa (mmHg)	760.4

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.02086	Intercept, bc	-0.03672
Last Calibration Date:	27-Dec-21	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Dec-22				

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.0	2.68	1.34	44.0	44.54
13	5.8	2.44	1.22	38.0	38.46
10	5.1	2.29	1.15	34.0	34.42
7	3.6	1.92	0.97	26.0	26.32
5	2.8	1.69	0.86	20.0	20.24

By Linear Regression of Y on X

Slope , mw = **49.2162** **Intercept, bw =** **-21.7557**

Correlation Coefficient* = **0.9990**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **41.72**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 10/12/22

EQUIPMENT CALIBRATION RECORD

Type:	Laser Dust Monitor
Manufacturer/Brand:	SIBATA
Model No.:	LD-3
Equipment No.:	A.005.07a
Sensitivity Adjustment Scale Setting:	557CPM
Operator:	WS CHAN

Standard Equimment

Equipment:	High Volume Sampler
Venue:	Fanling Government Secondary School
Model No.:	TE-5170
Serial No.:	3154
Last Calibration Date:	28-Apr-22

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration):	557	CPM
Sensitivity Adjustment Scale Setting (After Calibration):	557	CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration① (mg/m3) Y-axis	Total Count②	Count/ Minute③ X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1952	32.53
2	03/05/22	10:30-11:30	26.0	60	0.0500	2015	33.58
3	03/05/22	11:30-12:30	26.0	60	0.0520	2080	34.67
4	03/05/22	12:30-13:30	26.0	60	0.0540	2220	37.00

Note: ① Monitoring data was measured by High Volume Sampler
② Total Count was logged by Laser Dust Monitor
③ Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X

Slope (K-factor):	0.0015
Correlation coefficient:	0.9998

Validity of Calibration Record: 3-May-23

Remarks:

QC Reviewer: Yu Fung Signature: Date: 4 May 22

EQUIPMENT CALIBRATION RECORD

Type:	Laser Dust Monitor
Manufacturer/Brand:	SIBATA
Model No.:	LD-3
Equipment No.:	A.005.10a
Sensitivity Adjustment Scale Setting:	753 CPM
Operator:	WS CHAN

Standard Equimment

Equipment:	High Volume Sampler
Venue:	Fanling Government Secondary School
Model No.:	TE-5170
Serial No.:	3154
Last Calibration Date:	28-Apr-22

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 753 CPM
Sensitivity Adjustment Scale Setting (After Calibration): 753 CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration① (mg/m3) Y-axis	Total Count②	Count/ Minute③ X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1950	32.50
2	03/05/22	10:30-11:30	26.0	60	0.0500	2040	34.00
3	03/05/22	11:30-12:30	26.0	60	0.0520	2160	36.00
4	03/05/22	12:30-13:30	26.0	60	0.0540	2300	38.33

Note: ① Monitoring data was measured by High Volume Sampler
② Total Count was logged by Laser Dust Monitor
③ Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X

Slope (K-factor):	0.0015
Correlation coefficient:	0.9994

Validity of Calibration Record: 3-May-23

Remarks:

QC Reviewer: Yu Tung Signature: Date: 4-May-22

EQUIPMENT CALIBRATION RECORD

Type:	Laser Dust Monitor
Manufacturer/Brand:	SIBATA
Model No.:	LD-3B
Equipment No.:	A.005.13a
Sensitivity Adjustment Scale Setting:	643 CPM
Operator:	WS CHAN

Standard Equimment

Equipment:	High Volume Sampler
Venue:	Fanling Government Secondary School
Model No.:	TE-5170
Serial No.:	3154
Last Calibration Date:	28-Apr-22

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration):	643	CPM
Sensitivity Adjustment Scale Setting (After Calibration):	643	CPM

Hour	Date (dd/mm/yy)	Time	Ambient Condition		Concentration① (mg/m3) Y-axis	Total Count②	Count/ Minute③ X-axis
			Temp (°C)	R.H.(%)			
1	03/05/22	9:30-10:30	26.0	60	0.0490	1890	31.50
2	03/05/22	10:30-11:30	26.0	60	0.0500	1990	33.17
3	03/05/22	11:30-12:30	26.0	60	0.0520	2050	34.17
4	03/05/22	12:30-13:30	26.0	60	0.0540	2250	37.50

Note: ① Monitoring data was measured by High Volume Sampler
② Total Count was logged by Laser Dust Monitor
③ Count/minute was calculated by (Total Count/60)

By Linear Regression of Y on X

Slope (K-factor):	0.0015
Correlation coefficient:	0.9992

Validity of Calibration Record: 3-May-23

Remarks:

QC Reviewer: [signature] Signature: [signature] Date: 4 May 22

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CERTIFICATE OF CALIBRATION

Certificate No.: 22CA1110 01-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Class 1)	Microphone	Preamp
Manufacturer:	B & K	B & K	B & K
Type/Model No.:	2250	4950	ZC0032
Serial/Equipment No.:	3001291	3005374	31351
Adaptors used:	-	-	-

Item submitted by

Customer Name:	AECOM ASIA CO LIMITED
Address of Customer:	-
Request No.:	-
Date of receipt:	10-Nov-2022

Date of test: 11-Nov-2022

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	23-Aug-2023	CIGISMEC
Signal generator	DS 360	33873	21-Jan-2023	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1005 ± 5 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Feng Junqi **Date:** 12-Nov-2022 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

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CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 22CA1110 01-01 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	0.8	
	Lin	Pass	1.6	
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 11-Nov-2022 **Checked by:** Chan Yuk Yiu **Date:** 12-Nov-2022

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

HKAS has accredited this laboratory (Reg. No. HOKLAS 028) under HOKLAS for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (SI) or recognised measurement standards. The results relate only to the item(s) calibrated. This certificate shall not be reproduced except in full without approval of the laboratory.

綜合試驗有限公司
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CERTIFICATE OF CALIBRATION

Certificate No.: 22CA0504 01 **Page:** 1 **of** 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: B & K
Type/Model No.: 4231
Serial/Equipment No.: 3006428
Adaptors used: -

Item submitted by

Curstomer: AECOM
Address of Customer: -
Request No.: -
Date of receipt: 04-May-2022

Date of test: 04-May-2022

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	04-May-2022	SCL
Preamplifier	B&K 2673	2239857	31-May-2022	CEPREI
Measuring amplifier	B&K 2610	2346941	01-Jun-2022	CEPREI
Signal generator	DS 360	33873	27-May-2022	CEPREI
Digital multi-meter	34401A	US36087050	27-May-2022	CEPREI
Audio analyzer	8903B	GB41300350	28-May-2022	CEPREI
Universal counter	53132A	MY40003662	02-Jun-2022	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 55 ± 10 %
Air pressure: 1005 ± 5 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Feng Junqi **Date:** 05-May-2022 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 22CA0504 01 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	94.16	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.014 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 999.96 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 0.4 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

\- End -

Calibrated by: Fung Chi Yip **Date:** 04-May-2022 **Checked by:** Chan Yuk Yiu **Date:** 05-May-2022

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are carry no implication regarding the long-term stability of the instrument. The results apply to the item as received.

HKAS has accredited this laboratory (Reg. No. HOKLAS 028) under HOKLAS for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (SI) or recognised measurement standards. The results relate only to the item(s) calibrated. This certificate shall not be reproduced except in full without approval of the laboratory.

APPENDIX F

EM&A Monitoring Schedules

Shatin to Central Link 1123 - CEDD Entrusted Work
Road P2 & other roads and Slip Road 3
Impact Monitoring Schedule for February 2023

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

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

24-hour TSP Monitoring Station

CMA5b	Pedestrian Plaza
CMA6a	WDII PRE site office

Noise Monitoring Station

M1a	Footbridge for Ex-Harbour Road Sports Centre

Monitoring Frequency

24-hr TSP	Once every 6 days
1-hr TSP	3 times every 6 days (as required in of complaints)

Monitoring Frequency

Once per week

Shatin to Central Link 1123 - CEDD Entrusted Work
Road P2 & other roads and Slip Road 3
Tentative Impact Monitoring Schedule for March 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Mar	2-Mar	3-Mar	4-Mar
			24-hour TSP	1-hour TSP		
5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar
		24-hour TSP Noise	1-hour TSP			
12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar
	24-hour TSP Noise	1-hour TSP				24-hour TSP
19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
	1-hour TSP			24-hour TSP Noise	1-hour TSP	
26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar	
		Noise	24-hour TSP	1-hour TSP		

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

24-hour TSP Monitoring Station

CMA5b	Pedestrian Plaza
CMA6a	WDII PRE site office

Noise Monitoring Station

M1a	Footbridge for Ex-Harbour Road Sports Centre

Monitoring Frequency

24-hr TSP	Once every 6 days
1-hr TSP	3 times every 6 days (as required in of complaints)

Monitoring Frequency

Once per week

Shatin to Central Link 1123 - CEDD Entrusted Work
Road P2 & other roads and Slip Road 3
Tentative Impact Monitoring Schedule for April 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Apr
						24-hour TSP
2-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	8-Apr
	1-hour TSP	Noise		24-hour TSP 1-hour TSP		
9-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr
		1-hour TSP	24-hour TSP	Noise	1-hour TSP	
16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	22-Apr
		24-hour TSP	1-hour TSP	Noise		
23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr
	24-hour TSP	1-hour TSP		Noise		
30-Apr						

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

Air Quality Monitoring Station
AM2 Wan Chai Sports Ground
AM4 Pedestrain Plaza

Noise Monitoring Station
NM2 Harbour Centre

Monitoring Frequency
24-hr TSP Once every 6 days

Monitoring Frequency
Once per week

Shatin to Central Link 1123 - CEDD Entrusted Work
Road P2 & other roads and Slip Road 3
Tentative Impact Monitoring Schedule for May 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-May	2-May	3-May	4-May	5-May	6-May
		Noise	24-hour TSP	1-hour TSP		
7-May	8-May	9-May	10-May	11-May	12-May	13-May
		24-hour TSP Noise	1-hour TSP			
14-May	15-May	16-May	17-May	18-May	19-May	20-May
	24-hour TSP	1-hour TSP		Noise		24-hour TSP
21-May	22-May	23-May	24-May	25-May	26-May	27-May
	1-hour TSP			24-hour TSP Noise		1-hour TSP
28-May	29-May	30-May	31-May			
		Noise	24-hour TSP			

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

Air Quality Monitoring Station

AM2 Wan Chai Sports Ground
AM4 Pedestrain Plaza

Noise Monitoring Station

NM2 Harbour Centre

Monitoring Frequency

24-hr TSP Once every 6 days

Monitoring Frequency

Once per week

APPENDIX G

Air Quality Monitoring Results and their Graphical Presentations

Appendix G
Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station CMA5b (Pedestrian Plaza)

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. (µg/m^3)	2nd Hour Conc. (µg/m^3)	3rd Hour Conc. (µg/m^3)
01-Feb-23	13:30	Sunny	64.5	63.1	62.0
07-Feb-23	11:15	Sunny	64.7	65.3	64.0
13-Feb-23	13:20	Sunny	65.5	67.4	64.6
18-Feb-23	12:55	Sunny	64.2	63.3	64.5
24-Feb-23	13:15	Sunny	67.1	65.9	67.8
				Average	65.3
				Min	62.0
				Max	67.8

1-hour TSP Monitoring Results at Station CMA6a (WDII PRE Site Office)

Date	Start Time (hh:mm)	Weather Condition	1st Hour Conc. (µg/m^3)	2nd Hour Conc. (µg/m^3)	3rd Hour Conc. (µg/m^3)
01-Feb-23	13:15	Sunny	62.8	61.6	61.1
07-Feb-23	11:00	Sunny	61.7	62.7	61.5
13-Feb-23	13:05	Sunny	59.9	62.4	60.7
18-Feb-23	12:40	Sunny	61.9	61.4	62.3
24-Feb-23	13:00	Sunny	63.2	61.9	64.4
				Average	62.3
				Min	59.9
				Max	65.7

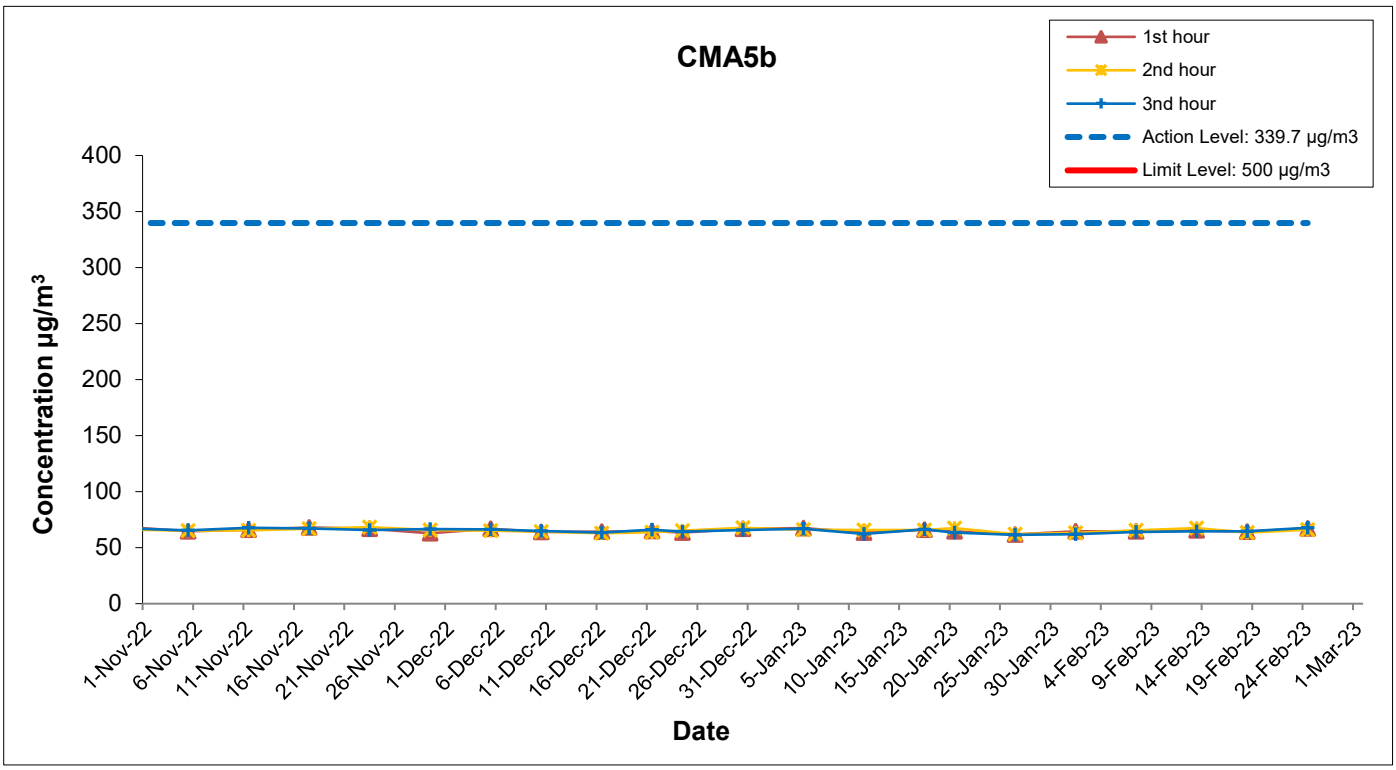
Appendix G
Air Quality Monitoring Results

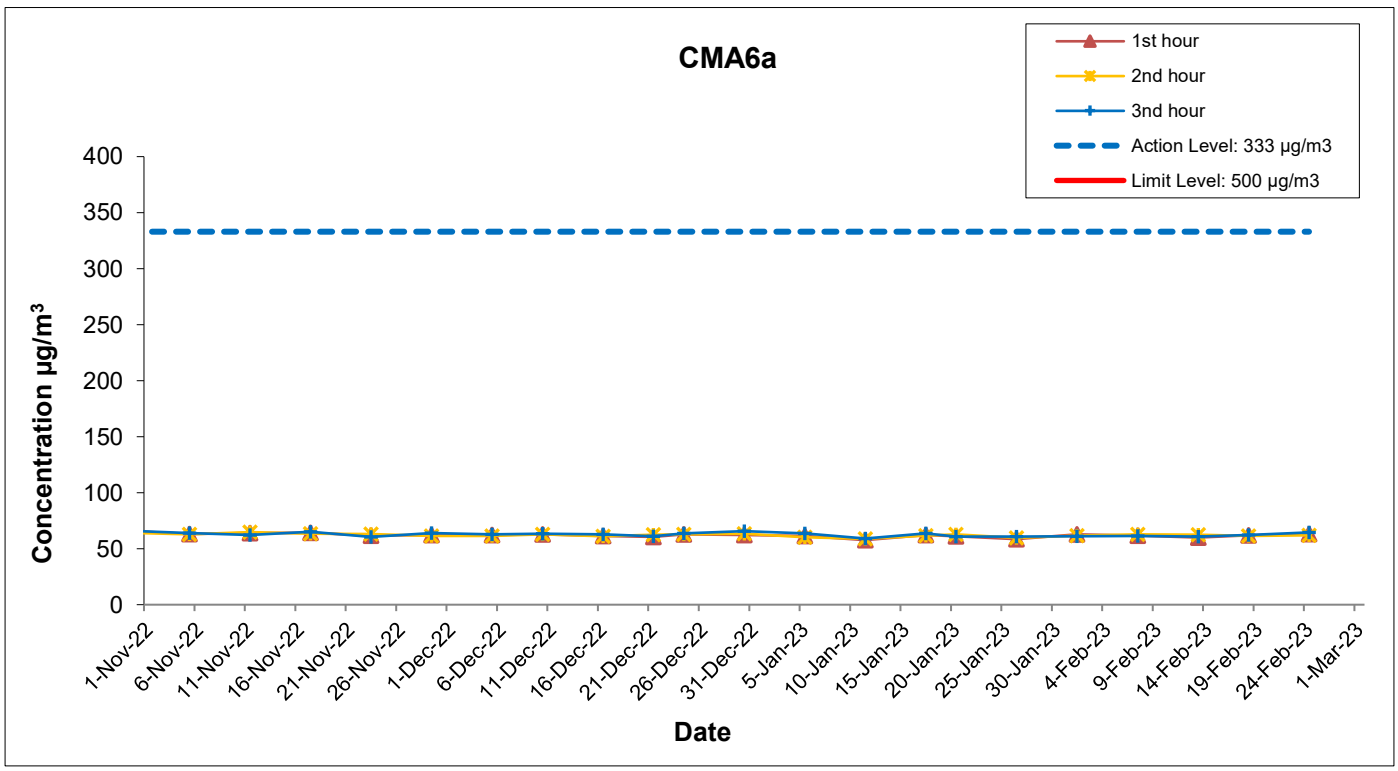
24-hour TSP Monitoring Results at Station CMA5b (Pedestrain Plaza)

Start		End		Weather	Air	Atmospheric	Flow Rate (m^3/min.)		Av. flow	Total vol.	Filter Weight (g)		Particulate	Elapse Time		Sampling	Conc.
Date	Time	Date	Time	Condition	Temp. (^oC)	Pressure (hPa)	Initial	Final	(m^3/min)	(m^3)	Initial	Final	weight(g)	Initial	Final	Time(hrs.)	($\mu g/m^3$)
6-Feb-23	0:00	7-Feb-23	0:00	Sunny	19.2	1014.6	1.34	1.34	1.34	1925.3	2.7782	2.8695	0.0913	29591.07	29615.07	24.00	47.4
11-Feb-23	0:00	12-Feb-23	0:00	Sunny	18.7	1014.6	1.34	1.34	1.34	1925.3	2.7774	2.8286	0.0512	29615.07	29639.07	24.00	26.6
17-Feb-23	0:00	18-Feb-23	0:00	Sunny	18.7	1021.2	1.34	1.34	1.34	1925.3	2.7730	2.8375	0.0645	29639.07	29663.07	24.00	33.5
23-Feb-23	0:00	24-Feb-23	0:00	Sunny	18.2	1018.6	1.34	1.34	1.34	1925.3	2.7756	2.8489	0.0733	29663.07	29687.07	24.00	38.1
																Average	**36.4**
																Minimum	**26.6**
																Maximum	**47.4**

24-hour TSP Monitoring Results at Station CMA6a (WDII PRE site office)

Start		End		Weather	Air	Atmospheric	Flow Rate (m^3/min.)		Av. flow	Total vol.	Filter Weight (g)		Particulate	Elapse Time		Sampling	Conc.
Date	Time	Date	Time	Condition	Temp. (^oC)	Pressure (hPa)	Initial	Final	(m^3/min)	(m^3)	Initial	Final	weight(g)	Initial	Final	Time(hrs.)	($\mu g/m^3$)
6-Feb-23	0:00	7-Feb-23	0:00	Sunny	19.2	1014.6	1.33	1.33	1.33	1916.6	2.7873	2.8490	0.0617	12312.37	12336.37	24.00	32.2
11-Feb-23	0:00	12-Feb-23	0:00	Sunny	18.7	1014.6	1.33	1.33	1.33	1916.6	2.7599	2.8037	0.0438	12336.37	12360.37	24.00	22.9
17-Feb-23	0:00	18-Feb-23	0:00	Sunny	18.7	1021.2	1.33	1.33	1.33	1916.6	2.7772	2.8065	0.0293	12360.37	12384.37	24.00	15.3
23-Feb-23	0:00	24-Feb-23	0:00	Sunny	18.2	1018.6	1.33	1.33	1.33	1916.6	2.7745	2.8252	0.0507	12384.37	12408.37	24.00	26.5
																Average	**24.2**
																Minimum	**15.3**
																Maximum	**32.2**





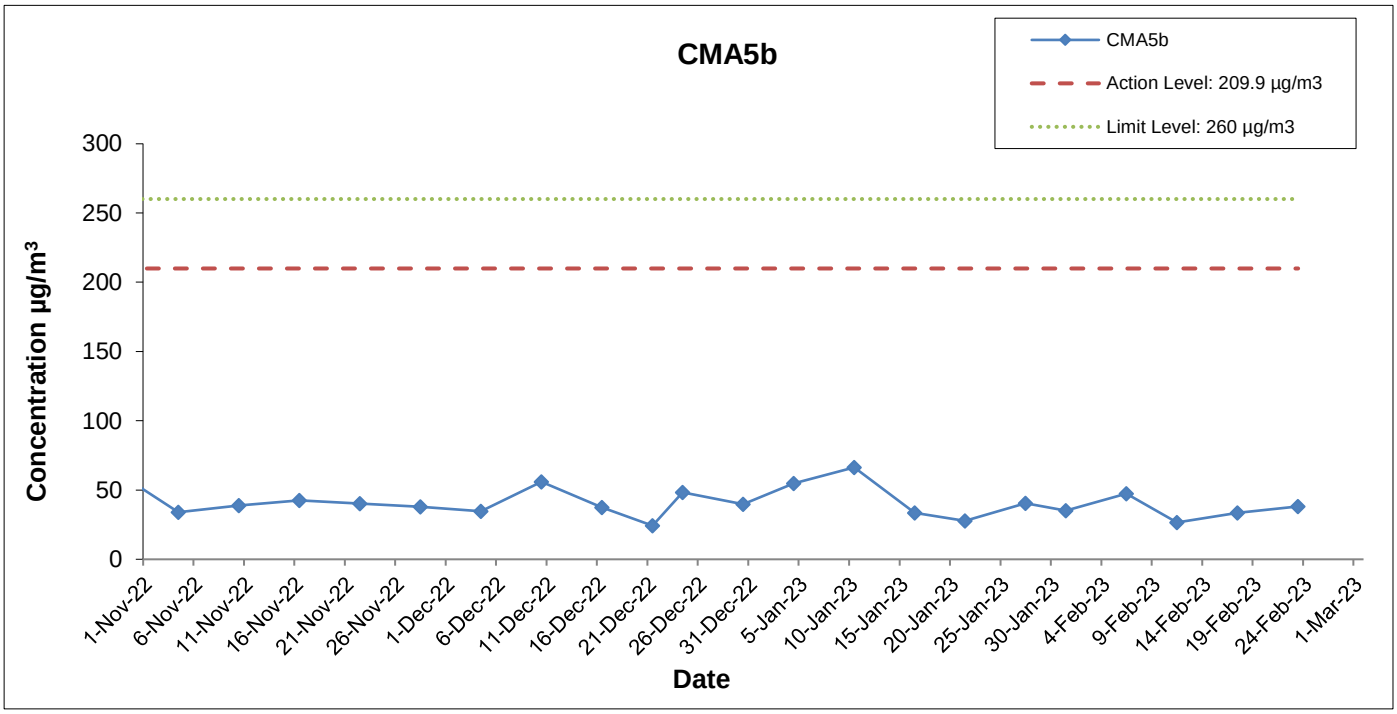
Shatin Central Link Contract No. 1123
Entrusted Work for Road P2 & other roads and Slip Road 3

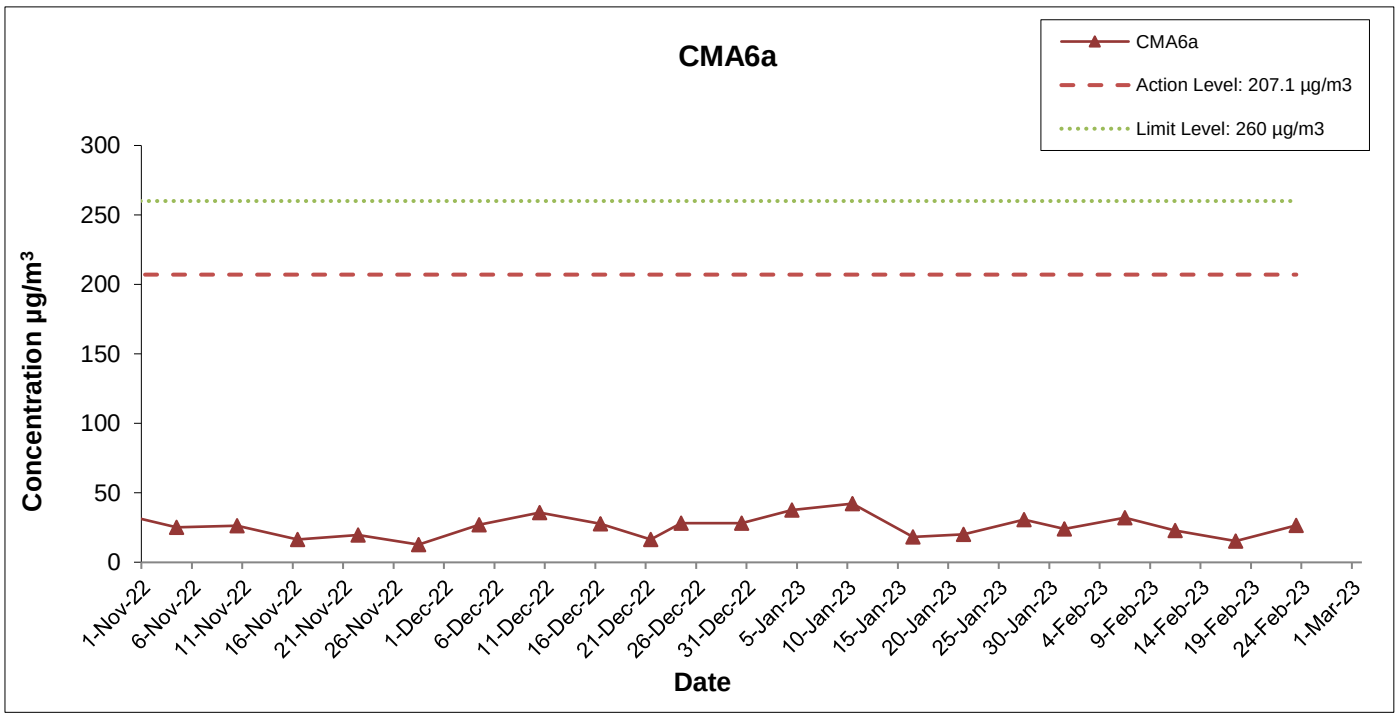
AECOM

Graphical Presentation of Impact 1-hr TSP Monitoring Results

Date: **March 2023**

Appendix G





Shatin Central Link Contract No. 1123
Entrusted Work for Road P2 & other roads and Slip Road 3

AECOM

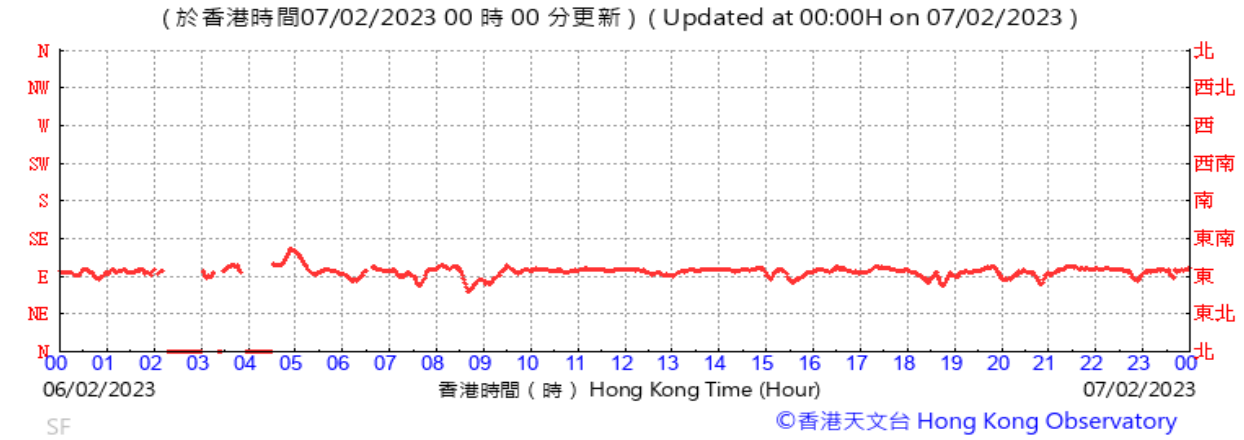
Graphical Presentation of Impact 24-hr TSP Monitoring Results

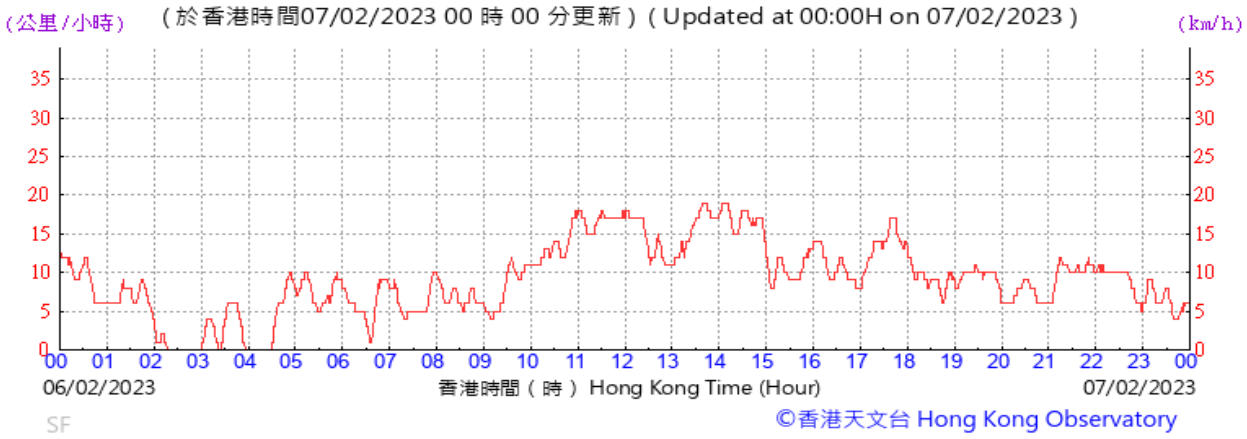
Date: **March 2023**

Appendix G

Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station
February 2023

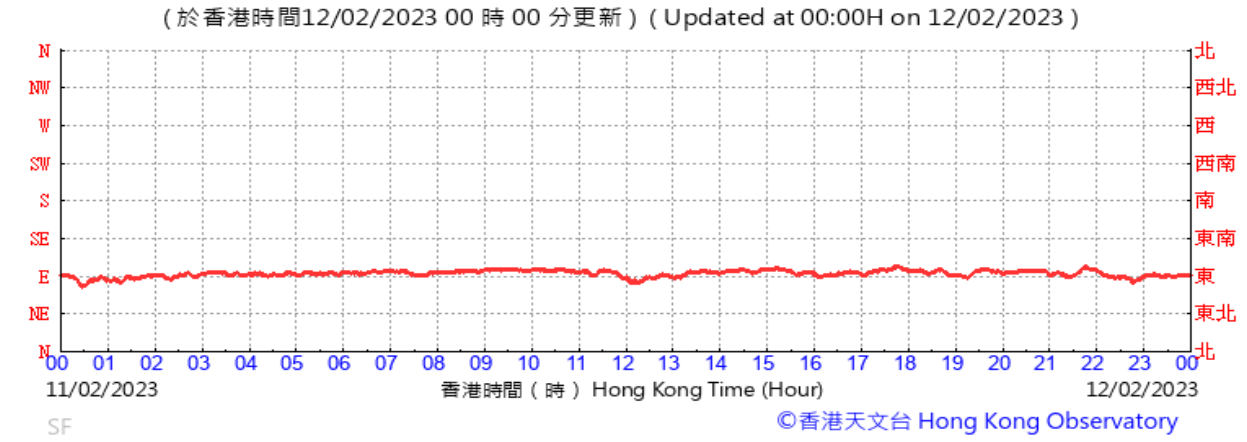
Wind Direction:

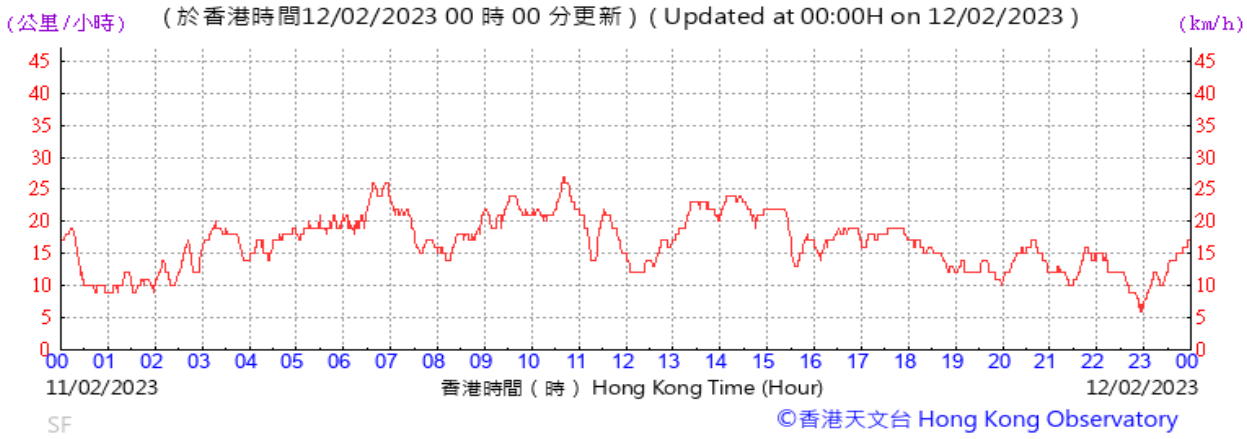




Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station
February 2023

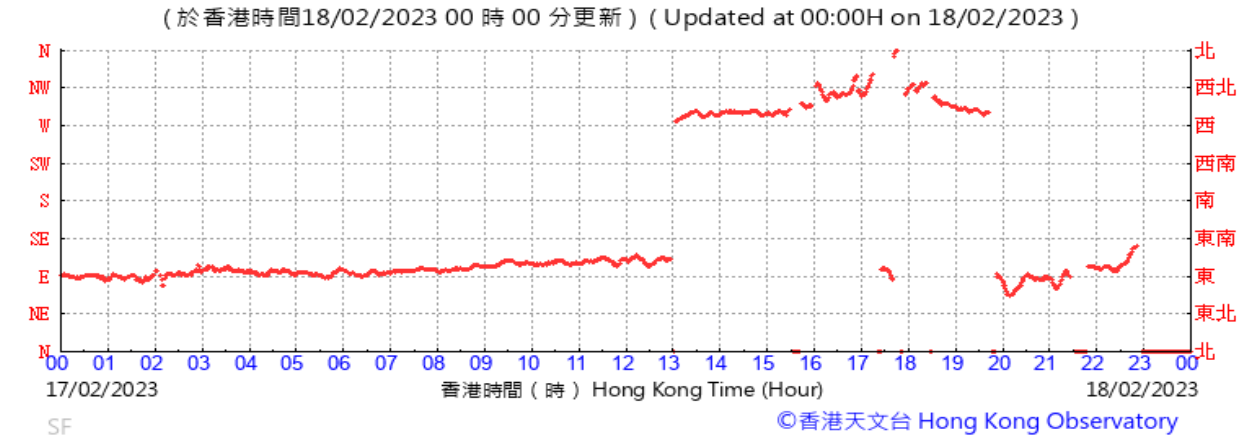
Wind Direction:

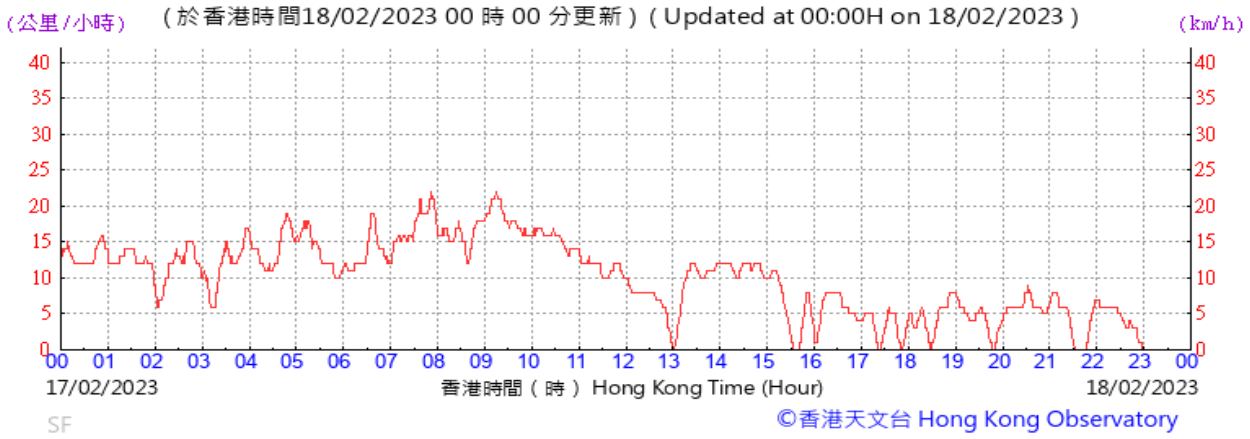




Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station
February 2023

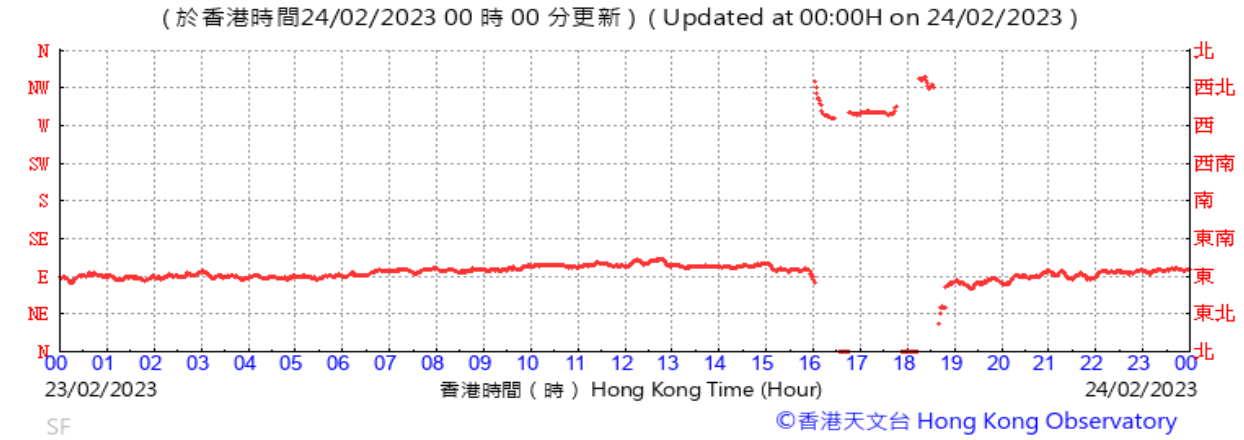
Wind Direction:

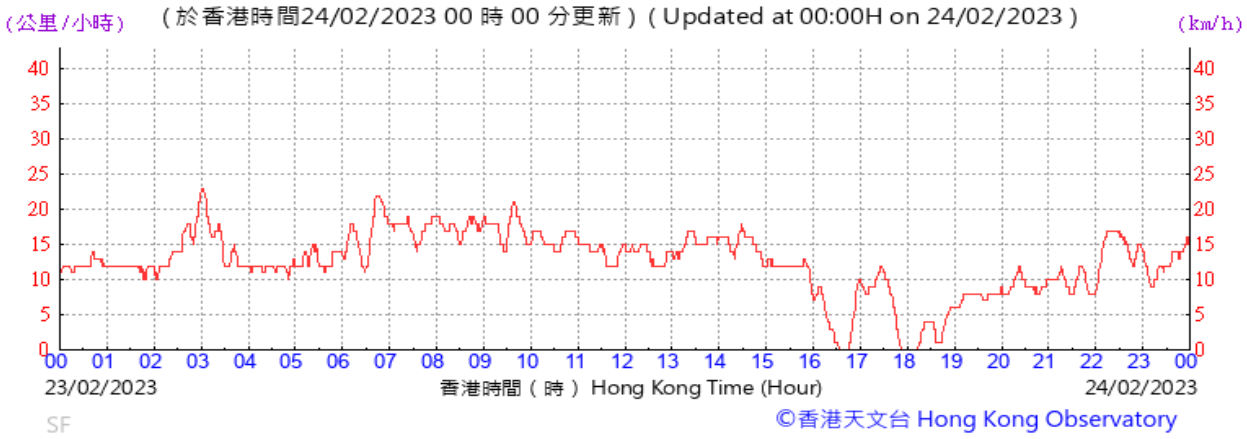




Appendix G – Extract of Meteorological Observations for Star Ferry Automatic Weather Station
February 2023

Wind Direction:





APPENDIX H

Noise Monitoring Results and their Graphical Presentations

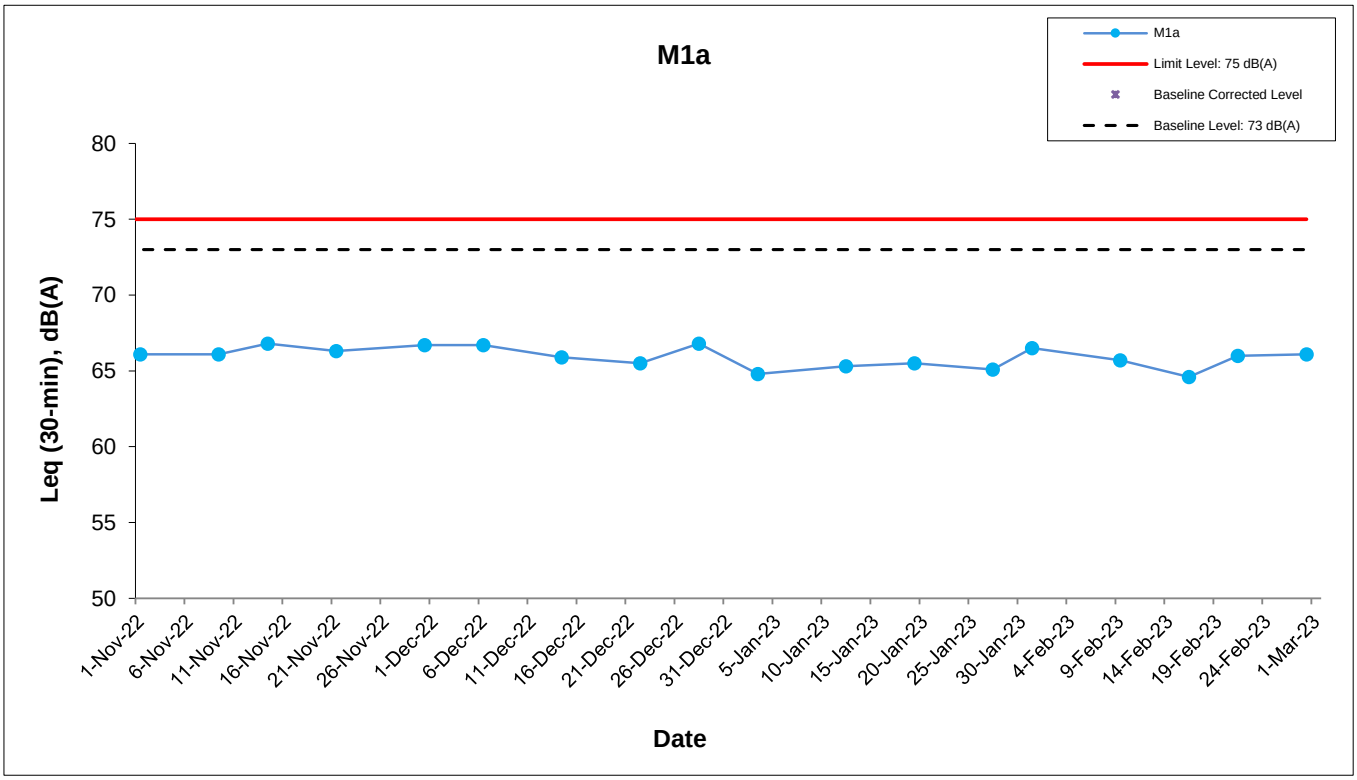
Appendix H Regular Construction Noise Monitoring Results

Daytime Noise Monitoring Results at Station M1a (Footbridge for Ex-Harbour Road Sport Centre)

Date	Weather Condition	Noise Level for 30-min, dB(A)+				Baseline Corrected Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
9-Feb-23	Sunny	11:45	63.3	66.5	65.7	<Baseline	69.6	75	N
16-Feb-23	Sunny	15:05	62.0	65.9	64.6	<Baseline	69.6	75	N
21-Feb-23	Sunny	14:05	62.9	67.7	66.0	<Baseline	69.6	75	N
28-Feb-23	Sunny	13:45	62.8	67.0	66.1	<Baseline	69.6	75	N

+ - Façade measurement

Appendix H Regular Construction Noise Monitoring Results



Shatin Central Link Contract No. 1123
Entrusted Work for Road P2 & other roads and Slip Road 3

Graphical Presentation of Impact Noise Monitoring Results

Date: March 2023

APPENDIX I

Event Action Plan

Appendix I Event Action Plan

Event / Action Plan for Construction Dust Monitoring

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
ACTION LEVEL				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Notify Contractor. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)

Appendix I Event Action Plan

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
LIMIT LEVEL				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly Implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 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. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

Appendix I Event Action Plan

Event and Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	IEC	ER	Contractor
Exceedance of Action Level	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
Exceedance of Limit Level	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

APPENDIX J

Cumulative Statistics of Exceedances, Complaints, Notification of Summons and Successful Prosecutions

Appendix J

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
Environmental complaints	-	-	-	0	0
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0

APPENDIX K

Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE

Contract No.:MTR SCL 1123 - Exhibition Station and Western Approach Tunnel (Road P2 Works)
Reporting Month: February 2023

Monthly Summary Waste Flow Table for 2023

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					Actual Quantities of Marine Dumping Monthly	
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics	Chemical Waste	Others, e.g. general refuse	Type 1	Type 2
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)	(in '000m^3)	(in '000m^3)
Jan	0.015	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb	0.009	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mar													
Apr													
May													
Jun													
Sub-total	0.024	0.000	0.000	0.000	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
July													
August													
September													
October													
November													
December													
Total	0.024	0.000	0.000	0.000	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Comments:

1) Assumption: The densities of Rock, Soil, Mixed Rock and Soil, and Regular Spoil are 2.0 ton/m^3; the density of general refuse is 1.0 ton/m^3; the density of waste oil is 1.0 kg/L.
2) The cut-off date of waste amount in February is 22/2/2023 for Public Fill Facilities and Landfill.
3) The amounts of waste in February is 0 ton for Landfill and 29.75 tons for Public Fill.
4) The amount of import fill in February is 0 ton, for cut-off date as 22/2/2023.
5) The amount of metal waste generated in February is 0 kg, for cut-off date as 22/2/2023.
6) The amount of paper waste generated in February is 0 kg, for cut-off date as 22/2/2023.
7) The amount of plastic waste generated in February is 0 kg, for cut-off date as 22/2/2023.