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**85th CONSOLIDATED MONTHLY
EM&A REPORT**

November 2023

Client : Civil Engineering and Development Department, HKSAR

EP No. : EP-337/2009 –
New Distributor Roads Serving the Planned Kai Tak
Development Area

Contract No. : KLN/2016/05 –
Independent Environmental Checker for
Contract No. KL/2015/02 Kai Tak Development –
Stage 5A Infrastructure at Former North Apron Area

Report No. : 0087/16/ED/1209

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EXECUTIVE SUMMARY

- i. This is the 85th Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 November and 30 November 2023.
- ii. The construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2015/02:

- Reinstatement of PERE central Divider
- Reinstatement of SKLRP pedestrian footway
- Excavation and installation work of subway ST2 ELS strut and wailing

Contract No. ED/2018/01:

- Laying of stormwater drainage pipes/ sewer pipes/watermains and construction of associated manholes at Road L12d and at-grade road.
- E&M works for Underpass 03
- Construction of remaining works for Noise Barrier
- Construction of RC structure for Lift LT-1 and LT-2
- Construction of profile barrier for NDR
- Modification works at Shing Kai Road
- Installation of Lift LT-4
- Laying of stormwater drainage pipes/ sewer pipes/ watermains
- Waterproofing works for ELD
- Construction of Seawater Intake Box Culvert
- Concreting and RC structure of Pumping Stations
- Construction of Observation Deck
- Construction of emergency walkway
- Construction of Harbour Steps
- Concreting and RC structure of Toilet cum Changing Room

Contract No. ED/2018/05:

- Erect falsework and working platform for Decking of Elevated Walkway LW-02
- RC Construction for Decking of Elevated Walkway LW-02
- RC Construction of LW02 Lift and Staircase
- Installation of post tensioning anchorage system at LW-02
- Construction of Permanent Shaft Structure of SB-01
- Road and Drain Construction works for Road L16, Commercial Street and Road D1
- Construction works for DCS
- Modification works for Rising Main chamber WOC1, AVC2 and K1
- Road and drain construction works at Olympic Avenue
- Renovation works for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Construction of Retaining Wall Type 1 for S14
- Construction of Pile Cap for S14
- Demolition of bearing wall of S14
- Construction works for SMH404 and SMH505

Breaches of the Action and Limit Levels

- iii. No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- iv. No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- v. No Limit Level exceedance was recorded for noise monitoring in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

- vi. No complaint, notification of summons or prosecution was received for Contract No. Contract No. KL/2015/02, Contract No. ED/2018/01 and Contract No. ED/2018/05 in this reporting month .

Reporting Changes

- vii. There was no reporting change in the reporting month.

Future Key Issues

- viii. The potential environmental impacts for the coming month and the control measures are shown in **Table I**:

Table I Summary of Key Issues for the Coming Month and Control Measures

Major Environmental Impact	Control Measures
Contract No. KL/2015/02:	
Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles by impervious materials; • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Use of quiet plant and well-maintained construction plant; • Provide movable noise barrier to enclose the noisy plant; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; • Provide drip trays with adequate capacity and well maintained to chemicals • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
Contract No. ED/2018/01:	
The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:	<ul style="list-style-type: none"> • Sufficient watering of the works site with the active dust emitting activities, • Limitation of the speed for vehicles on unpaved site roads, • Properly cover the stockpiles, • Good maintenance to the plant and equipment, • Use of quieter plant and Quality Powered Mechanical Equipment (QPME), • Provide movable noise barriers, • Appropriate desilting/ sedimentation devices provided on site for treatment before discharge, • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,

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Major Environmental Impact	Control Measures
	<ul style="list-style-type: none"> • Onsite waste sorting and implementation of trip ticket system, • Good management and control on construction waste reduction, • Erection of decorative screen hoarding, • Strictly following the Environmental Permits and Licenses, and • Provide sufficient mitigation measures as recommended in Approved EIA Reports.
Contract No. ED/2018/05:	
<p>The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:</p>	<ul style="list-style-type: none"> • Sufficient watering of the works site with the active dust emitting activities, • Limitation of the speed for vehicles on unpaved site roads, • Properly cover the stockpiles, • Good maintenance to the plant and equipment, • Use of quieter plant and Quality Powered Mechanical Equipment (QPME), • Provide movable noise barriers, • Appropriate desilting/ sedimentation devices provided on site for treatment before discharge, • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall, • Onsite waste sorting and implementation of trip ticket system, • Good management and control on construction waste reduction, • Erection of decorative screen hoarding, • Strictly following the Environmental Permits and Licenses, and • Provide sufficient mitigation measures as recommended in Approved EIA Report.

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1. INTRODUCTION

1.1 Background

- 1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.1.2 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 March 2009.
- 1.1.3 The EP-337/2009 was issued on 23 April 2009 for the new distributor roads serving the planned Kai Tak Development to the following scale and slope:
- Road D1 – a dual 2-lane carriageway of approximately 1.3 km long.
 - Road D2 – a dual 3-lane carriageway of approximately 1.1 km long.
 - Road D3 – a dual 2-lane carriageway of approximately 2.3 km long.
 - Road D4 – a dual 2-lane carriageway of approximately 0.9 km long.
- 1.1.4 The Civil Engineering and Development Department HKSAR has appointed Fugro Technical Services Limited (FTS) to undertake the role of Independent Environmental Checker (IEC) for the Contract No. KL/2015/02.
- 1.1.5 This is the 85th Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 November and 30 November 2023.

1.2 Summary of relevant Contract Information of Key Personnel

Party	Position	Name	Telephone	Fax/ E-mail
Contract No. KL/2015/02:				
Project Proponent (CEDD)	Senior Engineer	Mr. Ricky Chan	2116 3753	2116 0714
Engineer's Representative (AECOM)	SRE	Mr. Vincent Lee	2798 0771	2210 6110
IEC (FTS)	IEC	Mr. Calvin Leung	3565 4441	2450 8032
ET (Cinotech)	ET Leader	Mr. K.S Lee	2151 2091	3107 1388
	Audit Team Leader	Ms. Betty Choy	2151 2072	
Main Contractor (PWHJV)	Deputy Site Agent	Mr. W. M. Chen	9736 4284	2398 8301
Contract No. ED/2018/01:				
Project Proponent (CEDD)	Senior Engineer	Mr. Jason Wong	3579 2453	2739 0076
	Engineer	Ms. Chan Ka Yan	3579 2458	2739 0076
Engineer's Representative (AECOM)	CRE	Ms. Fanny Lau	3911 4201	3911 4288
IEC (Ramboll)	IEC	Mr. Y H Hui	3465 2850	3465 2899
ET (Ka Shing)	ET Leader	Mr. Chan Pang	6082 2973	2120 7752
Main Contractor (Penta-Ocean)	EO	Mr. Tony Tang	9433 2628	3465 8898

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Party	Position	Name	Telephone	Fax/ E-mail
Contract No. ED/2018/05:				
Project Proponent (CEDD)	Permit Holder	Mr. Dennis Fung	3842 7087	dycfung@cedd.gov.hk
Engineer's Representative (AECOM)	Supervisor's Delegate	Mr. Vincent Lee	2798 0771	sre2@ktd-stage5.com
IEC (Acuity)	IEC	Mr. Kevin Li	9779 2247	kevin.li@aurecongroup.com
ET (Ka Shing)	ET Leader	Mr. Pang Chan	6082 2973	stage5b@ka-shing.net
Main Contractor (BK- STEC)	Contractor's Representative	Mr. Rex Lau	6282 5154	rex.lau@buildking.hk

1.3 Summary of Construction Programme and Activities

1.3.1 The construction programme of each Contract is summarized in the appendices of the corresponding Monthly EM&A report.

1.3.2 The major construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2015/02:

- Reinstatement of PERE central Divider
- Reinstatement of SKLRP pedestrian footway
- Excavation and installation work of subway ST2 ELS strut and wailing

Contract No. ED/2018/01:

- Laying of stormwater drainage pipes/ sewer pipes/watermains and construction of associated manholes at Road L12d and at-grade road.
- E&M works for Underpass 03
- Construction of remaining works for Noise Barrier
- Construction of RC structure for Lift LT-1 and LT-2
- Construction of profile barrier for NDR
- Modification works at Shing Kai Road
- Installation of Lift LT-4
- Laying of stormwater drainage pipes/ sewer pipes/ watermains
- Waterproofing works for ELD
- Construction of Seawater Intake Box Culvert
- Concreting and RC structure of Pumping Stations
- Construction of Observation Deck
- Construction of emergency walkway
- Construction of Harbour Steps
- Concreting and RC structure of Toilet cum Changing Room

Contract No. ED/2018/05:

- Erect falsework and working platform for Decking of Elevated Walkway LW-02
- RC Construction for Decking of Elevated Walkway LW-02
- RC Construction of LW02 Lift and Staircase
- Installation of post tensioning anchorage system at LW-02
- Construction of Permanent Shaft Structure of SB-01
- Road and Drain Construction works for Road L16, Commercial Street and Road D1

- Construction works for DCS
- Modification works for Rising Main chamber WOC1, AVC2 and K1
- Road and drain construction works at Olympic Avenue
- Renovation works for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Construction of Retaining Wall Type 1 for S14
- Construction of Pile Cap for S14
- Demolition of bearing wall of S14
- Construction works for SMH404 and SMH505

1.4 Summary of Inter-relationship with the environmental protection/ mitigation measures with the construction programme

1.4.1 The summary of inter-relationship with environmental protection/mitigation measures are presented as follow:

Major Environmental Impact	Control Measures
Contract No. KL/2015/02:	
Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles by impervious materials; • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Use of quiet plant and well-maintained construction plant; • Provide movable noise barrier to enclose the noisy plant; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; • Provide drip trays with adequate capacity and well maintained to chemicals • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
Contract No. ED/2018/01:	
The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:	<ul style="list-style-type: none"> • Sufficient watering of the works site with the active dust emitting activities, • Limitation of the speed for vehicles on unpaved site roads, • Properly cover the stockpiles, • Good maintenance to the plant and equipment, • Use of quieter plant and Quality Powered Mechanical Equipment (QPME), • Provide movable noise barriers, • Appropriate desilting/ sedimentation devices provided on site for treatment before discharge, • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall, • Onsite waste sorting and implementation of trip ticket system, • Good management and control on construction waste reduction, • Erection of decorative screen hoarding, • Strictly following the Environmental Permits and Licenses, and • Provide sufficient mitigation measures as recommended in Approved EIA Reports.

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Major Environmental Impact	Control Measures
Contract No. ED/2018/05:	
<p>The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:</p>	<ul style="list-style-type: none"> • Sufficient watering of the works site with the active dust emitting activities, • Limitation of the speed for vehicles on unpaved site roads, • Properly cover the stockpiles, • Good maintenance to the plant and equipment, • Use of quieter plant and Quality Powered Mechanical Equipment (QPME), • Provide movable noise barriers, • Appropriate desilting/ sedimentation devices provided on site for treatment before discharge, • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall, • Onsite waste sorting and implementation of trip ticket system, • Good management and control on construction waste reduction, • Erection of decorative screen hoarding, • Strictly following the Environmental Permits and Licenses, and • Provide sufficient mitigation measures as recommended in Approved EIA Report.

1.5 Summary Status of Environmental Licences, Notifications and Permits

1.5.1 Detailed relevant environmental licenses, permits and/or notifications on environmental protection for this EP are presented in the appendices of the corresponding Monthly EM&A report.

2. ENVIRONMENTAL MONITORING AND AUDIT

2.1 Results and Observations

Air Quality

- 2.1.1 The schedule of air quality monitoring in reporting month is provided in the appendices of the corresponding Monthly EM&A report.
- 2.1.2 The weather conditions during the monitoring are provided in the appendices of the corresponding Monthly EM&A report.
- 2.1.3 The monitoring data of 24-hr TSP and 1 hour TSP are summarized in **Table 2.1**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A report.

Table 2.1 Summary of 24-hr and 1 hour TSP Monitoring Results

Parameter	Monitoring Station	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
Contract No. KL/2015/02:					
1-hr TSP	AM2	48.7	15.2 – 68.4	346	500
24-hr TSP	AM2(A)	53.5	10.7 – 88.4	157	260
Contract No. ED/2018/01:					
24-hr TSP	AM3	54	45 – 71	182	260
	AM4(A)	/	/ – /	187	
	AM7	65	55 – 74	181	
1-hr TSP	AM3	54	39 – 73	297	500
	AM4(A)	69	53 – 81	326	
	AM7	62	56 – 72	315	
Contract No. ED/2018/05:					
24-hr TSP	AM2(A)	39	32 – 51	175	260
	AM3	54	45 – 71	172	
1-hr TSP	AM2(A)	46	32 – 56	302	500
	AM3	54	39 – 73	301	

- 2.1.4 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 2.1.5 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 2.1.6 The monitoring data of 24-hr TSP was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A report.
- 2.1.7 The Event and Action Plan for air quality is given in the appendices of the corresponding Monthly EM&A report.

Noise

- 2.1.8 The schedule of noise monitoring in reporting month is provided in in the appendices of the corresponding Monthly EM&A report.

2.1.9 The noise monitoring data are summarized in **Table 2.2**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A report.

Table 2.2 Summary of Noise Impact Monitoring Results

Monitoring Stations	Construction Noise Level Leq (30min) dB(A) (Range)	Action Level	Limit Level dB (A)	
Contract No. KL/2015/02:				
M3(A)	58.1 – 74.0	When one documented complaint is received.	75	
M4	72.4 – 76.4 #		70*	
M5(C)	62.7 – 78.2#		75	
Contract No. ED/2018/01:				
M11	72.9 – 74.1		75	
M12	62.1 – 65.6		75	
Contract No. ED/2018/05:				
M4(A)	70.6 – 71.0		75	
M5(A)	73.9 – 74.4		75	

(* Noise Limit Level is 65 dB(A) during school examination periods.

(#) Measured noise level \leq background / baseline noise level, detailed data refer to the corresponding Monthly EM&A report.

2.1.10 The noise monitoring data was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A report.

2.1.11 No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.

2.1.12 The Event and Action Plan for noise is given in in the appendices of the corresponding Monthly EM&A report.

Landscape and Visual

2.1.13 Site audits were carried out on a weekly basis to monitor and audit the landscape and visual mitigation measures within the site boundaries of this Project. Detailed of observations are presented in the appendices of the corresponding Monthly EM&A report.

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3. SITE INSPECTION

3.1 Site Inspection

- 3.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project.
- 3.1.2 Detailed of observation, recommendation of site inspections and summary of the mitigation measures implementation schedule is provided in the appendices of the corresponding Monthly EM&A Report.

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4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

4.1 Complaints, Notification of Summons and Prosecution

4.1.1 The summary of complaints, notification of summons and prosecution in the reporting month are shown as **Table 4.1**.

Table 4.1 Summary of Complaints, Notification of Summons and Prosecution

Event	No. of Event This Month	Remark
Contract No. KL/2015/02:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. ED/2018/01:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. ED/2018/05:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA

4.1.2 Detailed records are presented in the appendices of the corresponding Monthly EM&A report.

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5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

5.1 Implementation Status

5.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month are presented in the appendices of the corresponding Monthly EM&A report.

5.2 Waste Management

5.2.1 The amount of wastes generated of this Project during the reporting month is shown in the appendices of the corresponding Monthly EM&A report.

6. FUTURE KEY ISSUES

6.1 Construction Programme for the Next Two Months

6.1.1 The major site activities undertaken for the coming two months are summarized in follow:

Contract No. KL/2015/02:

- Excavation and installation work of subway ST2 ELS strut and wailing;
- Modification work of Subway SW6 staircase hand railing;
- Reinstatement work of PERE westbound KERB line.

Contract No. ED/2018/0:

- Construction of manholes and chambers at Shing Kai Road and the at-grade road near NDR, SDR, Lift LT-4 and Noise Barrier
- Watermain connection and pressure test for watermains at Shing Kai Road and at-grade road near NDR
- Waterproofing work of ELD
- Construction of bus stop at at-grade road and noise barrier
- Installation of precast parapet for Bridge D3
- Concreting and RC structure of Toilet cum Changing Room
- Install the lift cart for Lift LT-4
- Concreting and RC structure of Pumping Stations
- Construction of Seawater Intake Box Culvert;
- Construction of RC structure for Lift LT-1 & LT-2
- Construction of remaining works for Noise Barrier
- Construction of Harbour Steps
- Diversion/ connection works (involving confined space) of Box Culvert
- Construction of Outfall 1&2
- Rising main laying works
- Laying of stormwater drainage pipes/ sewer pipes / watermains and construction of associated manholes at Road L12d
- E&M works for Underpass D3
- Construction of Observation Deck

Contract No. ED/2018/05:

- Erect falsework and working platform for Decking of Elevated Walkway LW-02
- RC Construction for Decking of Elevated Walkway LW-02
- RC Construction of LW02 Lift and Staircase
- Installation of post tensioning anchorage system at LW-02
- Construction of Permanent Shaft Structure of SB-01
- Road and drain construction works of Road L16, Commercial Street and Road D1
- Construction of DCS
- Renovation works for Subway KS10 Lift and Staircase
- Road and Drain Construction works at Olympic Avenue
- Renovation works for existing Subways KS9, KS32 and KS10
- Construction of Retaining Wall Type 1 for S14
- Construction of Pile Cap for S14
- Demolition of bearing wall of S14
- Construction works for SMH404 and SMH505

6.1.2 The potential environmental impacts arising from the above construction activities and the control measures are shown in **Table 6.1:**

Table 6.1 Summary of Key Issues for the Coming Month and Control Measures

Major Environmental Impact	Control Measures
Contract No. KL/2015/02:	
Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles by impervious materials; • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Use of quiet plant and well-maintained construction plant; • Provide movable noise barrier to enclose the noisy plant; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; • Provide drip trays with adequate capacity and well maintained to chemicals • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
Contract No. ED/2018/01:	
The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:	<ul style="list-style-type: none"> • Sufficient watering of the works site with the active dust emitting activities, • Limitation of the speed for vehicles on unpaved site roads, • Properly cover the stockpiles, • Good maintenance to the plant and equipment, • Use of quieter plant and Quality Powered Mechanical Equipment (QPME), • Provide movable noise barriers, • Appropriate desilting/ sedimentation devices provided on site for treatment before discharge, • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall, • Onsite waste sorting and implementation of trip ticket system, • Good management and control on construction waste reduction, • Erection of decorative screen hoarding, • Strictly following the Environmental Permits and Licenses, and • Provide sufficient mitigation measures as recommended in Approved EIA Reports.
Contract No. ED/2018/05:	
The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:	<ul style="list-style-type: none"> • Sufficient watering of the works site with the active dust emitting activities, • Limitation of the speed for vehicles on unpaved site roads, • Properly cover the stockpiles, • Good maintenance to the plant and equipment, • Use of quieter plant and Quality Powered Mechanical Equipment (QPME), • Provide movable noise barriers, • Appropriate desilting/ sedimentation devices provided on site for treatment before discharge, • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall, • Onsite waste sorting and implementation of trip ticket system, • Good management and control on construction waste reduction,

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Major Environmental Impact	Control Measures
	<ul style="list-style-type: none">• Erection of decorative screen hoarding,• Strictly following the Environmental Permits and Licenses, and• Provide sufficient mitigation measures as recommended in Approved EIA Report.

6.2 Monitoring Schedules for the Next Three Months

6.2.1 The tentative schedules for environmental monitoring in the coming three months are provided in the appendices of the corresponding Monthly EM&A.

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7. CONCLUSIONS

- 7.1.1 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 7.1.2 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 7.1.3 No Limit Level exceedance was recorded for noise monitoring in the reporting month.
- 7.1.4 No complaint, notification of summons or prosecution was received for Contract No. Contract No. KL/2015/02, Contract No. ED/2018/01 and Contract No. ED/2018/05 in this reporting month.
- 7.1.5 The potential environmental impacts arising from the coming two months of major construction activities and the control measures are shown in **Table 6.1**.

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Appendix A

**Monthly EM&A Report
For
Contract No. KL/2015/02
Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

Civil Engineering and Development Department


**EP-337/2009 – New Distributor Roads Serving the
Planned KTD**

**Contract No. KLN/2016/04
Environmental Monitoring Works for
Contract No. KL/2015/02
Kai Tak Development – Stage 5A Infrastructure
at Former North Apron Area**

Monthly EM&A Report

November 2023

(Version 1.1)

Certified By	 (Environmental Team Leader)
--------------	---

REMARKS:

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

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

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FUGRO TECHNICAL SERVICES LIMITED
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Date 11 December 2023
Our Ref. MCL/ED/0476/2023/C

Cinotech Consultants Limited
Rm 1710, Technology Park,
18 On Lai Street, Shatin,
New Territories,
Hong Kong

BY EMAIL

Attn.: Mr. K.S Lee

Dear Sir,

Contract No. KL/2015/02
Kai Tak Development –Stage 5A Infrastructure at Former North Apron
Verification of Monthly EM&A Report for November 2023

We refer to your emails dated 7 and 11 December 2023 for the captioned report prepared by the ET.

We have no further comment and hereby verify the Report in accordance with Clause 3.3 of Environmental Permit no. EP-337/2009.

Should you require further information, please do not hesitate to contact the undersigned at 3565 4441.

Assuring you of our best attention at all times.

Yours faithfully,
For and on behalf of
FUGRO TECHNICAL SERVICES LIMITED

Calvin Leung
Independent Environmental Checker

CL/ ws

c.c. CEDD –

Attn.: Mr. Ricky Chan
Attn.: Mr. Michael So
Attn.: Mr. Vincent Lee
Attn.: Mr. Teddy Shih

AECOM –

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EXECUTIVE SUMMARY

Introduction

1. This is the 83rd Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2015/02 - Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area” (Hereafter referred to as “the Project”). This contract comprises one Schedule 2 designated project (DP), namely the new distributor road D1 serving the planned KTD. The DP is part of the designated project under Environmental Permit (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) respectively. This report documents the findings of EM&A Works conducted during November 2023.
2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in **Table I** (see **Figure 2 and 3** for their locations).

Table I – Air Quality and Noise Monitoring Stations for this Project

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations
Air Quality Monitoring Stations		
AM2 - Lee Kau Yan Memorial School	Yes (1-hour TSP)	N/A
	No (24-hour TSP)	AM2(A) – Ng Wah Catholic Secondary School
Noise Monitoring Stations		
M3 - Cognito College	No	M3(A) – The Bridge connecting The Latitude
M4 - Lee Kau Yan Memorial School	Yes	N/A
M5 – Nam Yuen	No	M5(C) – Mercy Grace’s Home

3. The major site activities undertaken in the reporting month included:
- Reinstatement of PERE central Divider
 - Reinstatement of SKLRP pedestrian footway
 - Excavation and installation work of subway ST2 ELS strut and wailing

Environmental Monitoring Works

4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table II**.

Table II Non-compliance Recorded for the Project in the Reporting Month

Parameter	No. of Project-related Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

1-hour & 24-hour TSP Monitoring

6. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
7. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

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

Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, EP-337/2009 issued on 23 April 2009. All valid Licenses/Permits for this Project are shown in **Table 6.1**.

- Billing Account for Construction Waste Disposal (A/C# 7026164).
- Effluent Discharge License (WT00041367-2022).
- Registration of Chemical Waste Producer (WPN5213-286-P3271-01).

Key Information in the Reporting Month

10. Summary of key information in the reporting month is tabulated in **Table III**.

Table III Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	---	---	N/A	N/A	---
Reporting Changes	---	---	N/A	N/A	---
Notifications of any summons & prosecutions received	---	---	N/A	N/A	---

Future Key Issues

11. The future key environmental issues in the coming two months include:

- Stagnant water on the unused and damaged water-filled barriers & uncovered containers and manhole;
- Noise generated from operation of the equipment, especially for rock-breaking activities;
- Dust generation from excavation works and rock breaking activities;
- Oil leakage from equipment and mobile plants;

1 INTRODUCTION

Background

- 1.1. The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 5A Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains one Schedule 2 DP including new distributor roads serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2. An Environmental Permit (EP) No. EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD to Civil Engineering and Development Department as the Permit Holder.
- 1.3. A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4. Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2015/02 – Stage 5A Infrastructure at Former North Apron Area. The construction work under KL/2015/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).
- 1.5. Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The commencement date of construction of Road D1 (part) under this Contract was on 16 January 2017.

Project Organizations

- 1.6. Different parties with different levels of involvement in the project organization include:
 - Project Proponent – Civil Engineering and Development Department (CEDD).
 - The Engineer and the Engineer's Representative (ER) – AECOM Asia Co. Ltd (AECOM).
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech).
 - Independent Environmental Checker (IEC) – Fugro Technical Services Limited (FTS).
 - Contractor – Peako - Wo Hing Joint Venture (PWHJV).

1.7. The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. CHAN Wai Kit, Ricky	Senior Engineer	2116 3753	2116 0714
AECOM	Engineer's Representative	Mr. Vincent Lee	Senior Resident Engineer	2798 0771	2210 6110
Cinotech	Environmental Team	Mr. K.S Lee	Environmental Team Leader	2151 2091	3107 1388
		Ms. Betty Choi	Audit Team Leader	2151 2072	
FTS	Independent Environmental Checker	Mr. Calvin Leung	Independent Environmental Checker	3565 4441	2450 8032
PWHJV	Contractor	Mr. W.M. Chen	Deputy Site Agent	9736 4284	2398 8301

Construction Activities undertaken during the Reporting Month

1.8. The site activities undertaken in the reporting month included:

- Reinstatement of PERE central Divider
- Reinstatement of SKLRP pedestrian footway
- Excavation and installation work of subway ST2 ELS strut and wailing

1.9. The construction programme for the Project is shown in **Appendix N**.

1.10. The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 1.2**.

Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
Refer to Section 1.8	Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles by impervious materials; • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Use of quiet plant and well-maintained construction plant; • Provide movable noise barrier to enclose the noisy plant; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; • Provide drip trays with adequate capacity and well maintained to chemicals • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.

Summary of EM&A Requirements

- 1.11. The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12. The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.13. This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project during the reporting month.

2 AIR QUALITY

Monitoring Requirements

- 2.1. According to EM&A Manual under the EP, 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 2.2. 1-hour TSP impact dust monitoring was conducted at the air quality monitoring station, AM2 - Lee Kau Yan Memorial School and 24-hour TSP impact dust monitoring were conducted at the air quality monitoring station, AM2(A) - Ng Wah Catholic Secondary School in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.3. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Stations	Locations	Location of Measurement
AM2 (1-hour TSP)	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
AM2(A) (24-hour TSP)	Ng Wah Catholic Secondary School	Rooftop (about 8/F) Area

Monitoring Equipment

- 2.4. **Table 2.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix B**.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	• TISCH TE-5025A	1
1-hour TSP Dust Meter	• Sibata Scientific Technology LD-5R	2
HVS Sampler	• TE-5170 c/w of TSP sampling inlet	1
Wind Anemometer	• Davis Instruments 6152	1

Monitoring Parameters, Frequency and Duration

- 2.5. **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

Measuring Procedures

- 2.6. The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:

(Equipment: Sibata Scientific Technology; Model no. LD-3B, LD-5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display.
- Finally, push the start/stop switch to stop the measuring after 1 hour sampling.

- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

- 2.7. The following maintenance/calibration was required for the direct dust meters:

Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

- 2.8. High volume (HVS) samplers (Model TE-5170), completed with appropriate sampling inlets, were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

Operating/Analytical Procedures

- 2.9. Operating/analytical procedures for the operation of HVS were as follows:

- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
- No two samplers were placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
- No furnaces or incineration flues were nearby.
- Airflow around the sampler was unrestricted.
- The sampler was more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

- 2.10. Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- 2.11. For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.
- 2.12. The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13. The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14. The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15. The shelter lid was closed and secured with the aluminium strip.
- 2.16. The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17. After sampling, the filter was removed and sent to the HOKLAS laboratory (High Precision Chemical Testing Ltd.) for weighing. The elapsed time was also recorded.
- 2.18. Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

- 2.19. The following maintenance/calibration was required for the HVS:
 - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

- 2.20. All 1-hour & 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.21. The weather information for the reporting month is summarized in **Appendix C**.
- 2.22. The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.
- 2.23. The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.
- 2.24. According to our field observations during the monitoring, the major dust source identified at the two designated air quality monitoring stations are road traffic dust, exposed site area and open stockpiles, excavation works and site vehicle movements.
- 2.25. The summary of 1-hour and 24-hour TSP air quality monitoring results during the reporting month are shown in **Appendix E** and **Appendix F** respectively.

3 NOISE

Monitoring Requirements

- 3.1. According to EM&A Manuals under the EP, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2. Three designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M3(A), M4, and M5(C)). **Figure 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
M3(A)	The Bridge connecting The Latitide	In the middle of the foot bridge connecting The Latitide
M4	Lee Kau Yan Memorial School	Rooftop (about 7/F) Area
M5(C)	Mercy Grace's Home	Ground in front of the building entrance facing Prince Edward Road East (noise monitoring is not allowed on the rooftop from 27 February 2020, due to the coronavirus countermeasure in Mercy Grace's Home)

Monitoring Equipment

- 3.3. **Table 3.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix B**.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	<ul style="list-style-type: none"> • BSW Atech BSWA 308 • SVAN 979 	3
Calibrator	<ul style="list-style-type: none"> • SOUNDTEK ST-120 • B&K 4231 	2

Monitoring Parameters, Frequency and Duration

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency	Measurement
M3(A) M4 M5(C)	L ₁₀ (30 min.) dB(A) L ₉₀ (30 min.) dB(A) L _{eq} (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq}, L₉₀ and L₁₀ were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

- 3.5. The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.6. The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.7. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

- 3.8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix H**.
- 3.9. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.
- 3.10. Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.11. The major noise source identified at the designated noise monitoring stations are shown in **Table 3.4**.

Table 3.4 Major Noise Source identified at the Designated Noise Monitoring Stations

Monitoring Stations	Locations	Major Noise Source
M3(A)	The Bridge connecting The Latitude	Traffic Noise Site vehicle movement
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works Daily school activities
M5(C)	Mercy Grace's Home	Traffic Noise Site vehicle movement

Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M3(A)	N/A ⁽¹⁾ (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)
M4	76.7 ⁽²⁾ (at 0700 – 1900 hrs on normal weekdays)	70 ^(*) (at 0700 – 1900 hrs on normal weekdays)
M5(C)	N/A ⁽¹⁾ (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)

(*) Noise Limit Level is 65 dB(A) during school examination periods.

Note (1): The background Noise Level was recorded during the Lunch Hour of Construction Site

(i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level.

Note (2): The noise level due to the construction work (CNL) was calculated by the following formula:

$$\text{CNL} = 10 \log (10^{\text{MNL}/10} - 10^{\text{BNL}/10})$$

Remarks: MNL = Measured Noise Level, BNL = Baseline Noise Level

4 COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

- 4.1. The EM&A data was compared with the EIA predictions as summarized in **Tables 4.1 to 4.3**.

Table 4.1 Comparison of 1-hr TSP data with EIA predictions

Station	Predicted 1-hr TSP conc.		Measured 1-hr TSP conc.	
	Scenario1 (Mid 2009 to Mid-2013), $\mu\text{g}/\text{m}^3$	Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	Reporting Month (November 2023), $\mu\text{g}/\text{m}^3$	
			Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	48.7	15.2 – 68.4

Table 4.2 Comparison of 24-hr TSP data with EIA predictions

Station	Predicted 24-hr TSP conc.		Measured 24-hr TSP conc.	
	Scenario1 (Mid 2009 to Mid-2013), $\mu\text{g}/\text{m}^3$	Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	Reporting Month (November 2023), $\mu\text{g}/\text{m}^3$	
			Average	Range
AM2(A) – Ng Wah Catholic Secondary School	145	169	53.5	10.7 – 88.4

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{\text{eq}}(30\text{min})$ dB(A))	Reporting Month (November 2023), $L_{\text{eq}}(30\text{min})$ dB(A)
M3(A) – The Bridge connecting The Latitude	Not predicted in EIA Report	58.1 – 74.0
M4 – Lee Kau Yan Memorial School	47 – 74	72.4 – 76.4 ⁽¹⁾
M5(C) – Mercy Grace's Home	Not predicted in EIA Report	62.7 – 78.2 ⁽²⁾

Remarks:

- (1) Since the baseline noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.
 (2) Since the background noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.

- 4.2. The average 1-hour TSP concentrations at AM2 in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.3. The average 24-hour TSP concentrations at AM2(A) in the reporting month were below the prediction in the approved EIA Report.
- 4.4. The noise monitoring results in the reporting month from M4 were slightly higher than the range of the predicted mitigated construction noise levels in the EIA Report.

- 4.5. Construction noise levels at M3(A) and M5(C) were not predicted in EIA Report.

5 LANDSCAPE AND VISUAL

Monitoring Requirements

- 5.1. According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

Results and Observations

- 5.2. Site audits were conducted on a weekly basis to monitor the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.
- 5.3. No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.4. Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.

6 ENVIRONMENTAL INSPECTION

Site Inspections

- 6.1. Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site inspections are attached in **Appendix I**.
- 6.2. Site inspections were conducted on 06, 15, 20, & 27 November 2023 in the reporting month. A joint site inspection with the representative of IEC, ER, the Contractor and the ET was conducted on 15 November 2023. The details of the observations during site inspection are summarized in **Table 6.2**.

Review of Environmental Monitoring Procedures

- 6.3. The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Status of Environmental Licensing and Permitting

- 6.4. All permits/licenses obtained for the Project are summarized in **Table 6.1**.

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-337/2009	23 Apr 2009	N/A	Valid
Effluent Discharge License			
WT00027495-2017	28 Mar 2017	31 Mar 2022	Expired
WT00041367-2022	20 Jun 2022	31 Mar 2027	Valid
Billing Account for Construction Waste Disposal			
A/C# 7026164	20 Oct 2016	N/A	Valid
Registration of Chemical Waste Producer			
WPN5213-229-P3271-01	14 Aug 2017	N/A	Valid
Construction Noise Permit (CNP)			
GW-RE0915-19	08 Nov 2019	04 May 2020	Expired
GW-RE0984-19	15 Dec 2019	24 Feb 2020	Expired
GW-RE0083-20	01 Mar 2020	01 June 2020	Expired
GW-RE0266-20	02 May 2020	31 Jul 2020	Expired
GW-RE0779-21	30 Jul 2021	30 Nov 2021	Expired
GW-RE0858-21	31 Jul 2021	30 Aug 2021	Expired
GW-RE0636-23	06 Jun 2023	30 Jun 2023	Expired
GW-RE0637-23	06 Jun 2023	30 Jun 2023	Expired

Status of Waste Management

- 6.5. The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.

Implementation Status of Environmental Mitigation Measures

- 6.6. During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Table 6.2**.

Table 6.2 Observations and Recommendations of Site Inspections

Parameters	Date	Observations and Recommendations	Follow-up/Rectification
<i>Water Quality</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Air Quality</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Noise</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Waste/ Chemical Management</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Landscape and Visual</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Permits/ Licenses</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A

Summary of Mitigation Measures Implemented

- 6.7. An updated summary of the EMIS is provided in **Appendix K**.

Implementation Status of Event Action Plans

- 6.8. The Event Action Plans for air quality, noise and landscape and visual are presented in **Appendix J**.

1-hr TSP Monitoring

- 6.9. No Action/Limit Level exceedance was recorded in the reporting month.

24-hr TSP Monitoring

- 6.10. No Action/Limit Level exceedance was recorded in the reporting month.

Construction Noise

- 6.11. No Action/Limit Level exceedance was recorded in the reporting month.

Landscape and visual

6.12. No non-compliance was recorded in the reporting month.

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

6.13. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix L**.

7 FUTURE KEY ISSUES

7.1. Major site activities undertaken for the coming two months include:

- Excavation and installation work of subway ST2 ELS strut and wailing;
- Modification work of Subway SW6 staircase hand railing;
- Reinstatement work of PERE westbound KERB line.

7.2. Key environmental issues in the coming month include:

- Stagnant water on the unused and damaged water-filled barriers & uncovered containers and manhole
- Noise generated from operation of the equipment, especially for rock-breaking activities;
- Dust generation from excavation works and rock breaking activities;
- Oil leakage from equipment and mobile plants;

- 7.3. The tentative major site activities is mentioned in Section 7.1 of this report. The impact prediction and control measures for the coming two months are summarized as follows:

Air quality impact (dust)

- Frequent watering of haul road and unpaved/exposed areas;
- Frequent watering or covering stockpiles with impervious materials or maintained wet; and
- Watering of any earth moving activities.

Water quality impact (surface runoff)

- Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;
- Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;
- Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and

Noise Impact

- Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;
- Machines and Plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- Regular maintenance of machines; and
- Use of movable noise barriers if necessary.

Waste /Chemical Management

- Avoided oil leakage from PME
- Provided drip tray with adequate capacity and well maintained to chemical and oil containers

Monitoring Schedule for Next Month

- 7.4. The tentative environmental monitoring schedules for next month are shown in **Appendix D**.

8 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 8.1. Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hr TSP Monitoring

- 8.2. All 1-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hr TSP Monitoring

- 8.3. All 24-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

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

Landscape and visual

- 8.5. No non-compliance was recorded in the reporting month.

Complaint and Prosecution

- 8.6. No environmental complaint and environmental prosecution was received in the reporting month.

Recommendations

8.7. According to the environmental audit performed in the reporting month, the following recommendations were made:

Water Impact

- To avoid accumulation of stagnant and ponding water on site.
- Bunds should be provided to surrounding areas of earthworks for flood protection.

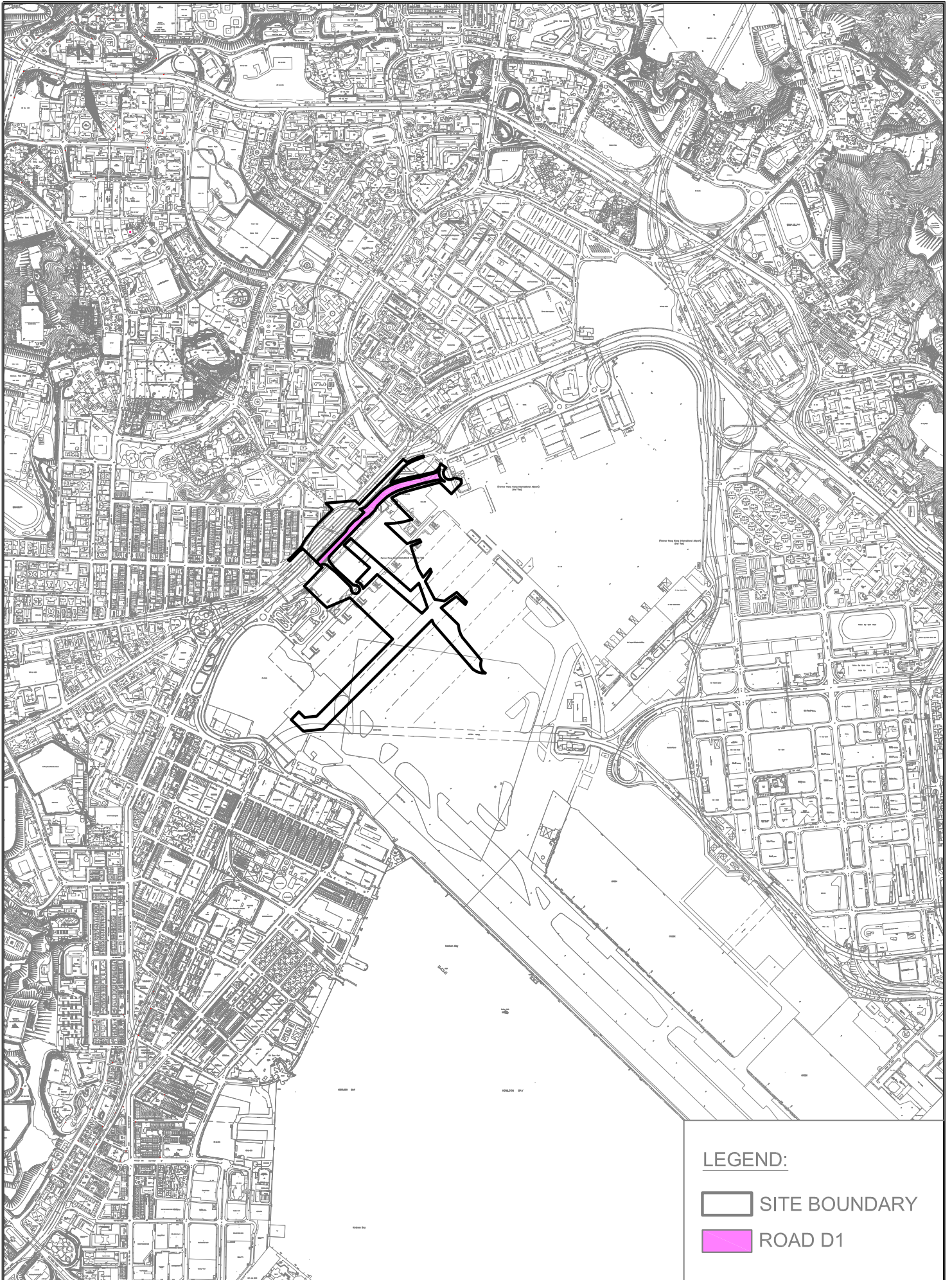
Air Quality

- The stockpile of dusty material should be covered by impervious materials or maintained wet.
- Black smoke emission from PME should be avoided by changing filter & regular maintenance of machines.

Waste/Chemical Management

- Oil leakage from PME should be avoided.
- Drip tray with adequate capacity and well maintained should be provided to chemical & oil container.
- The construction/chemical material should be stored at the proper place.

FIGURES



LEGEND:

 SITE BOUNDARY

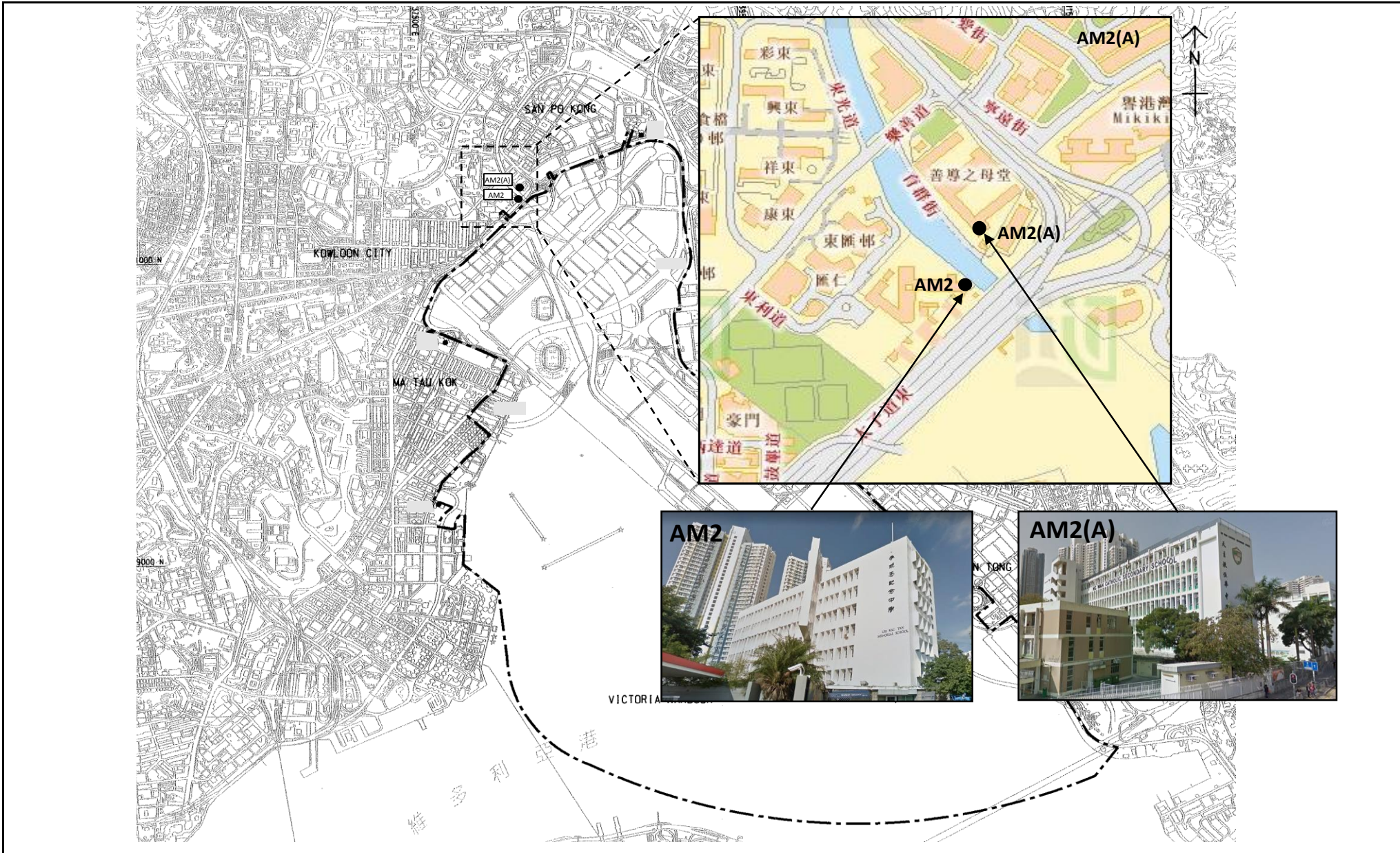
 ROAD D1



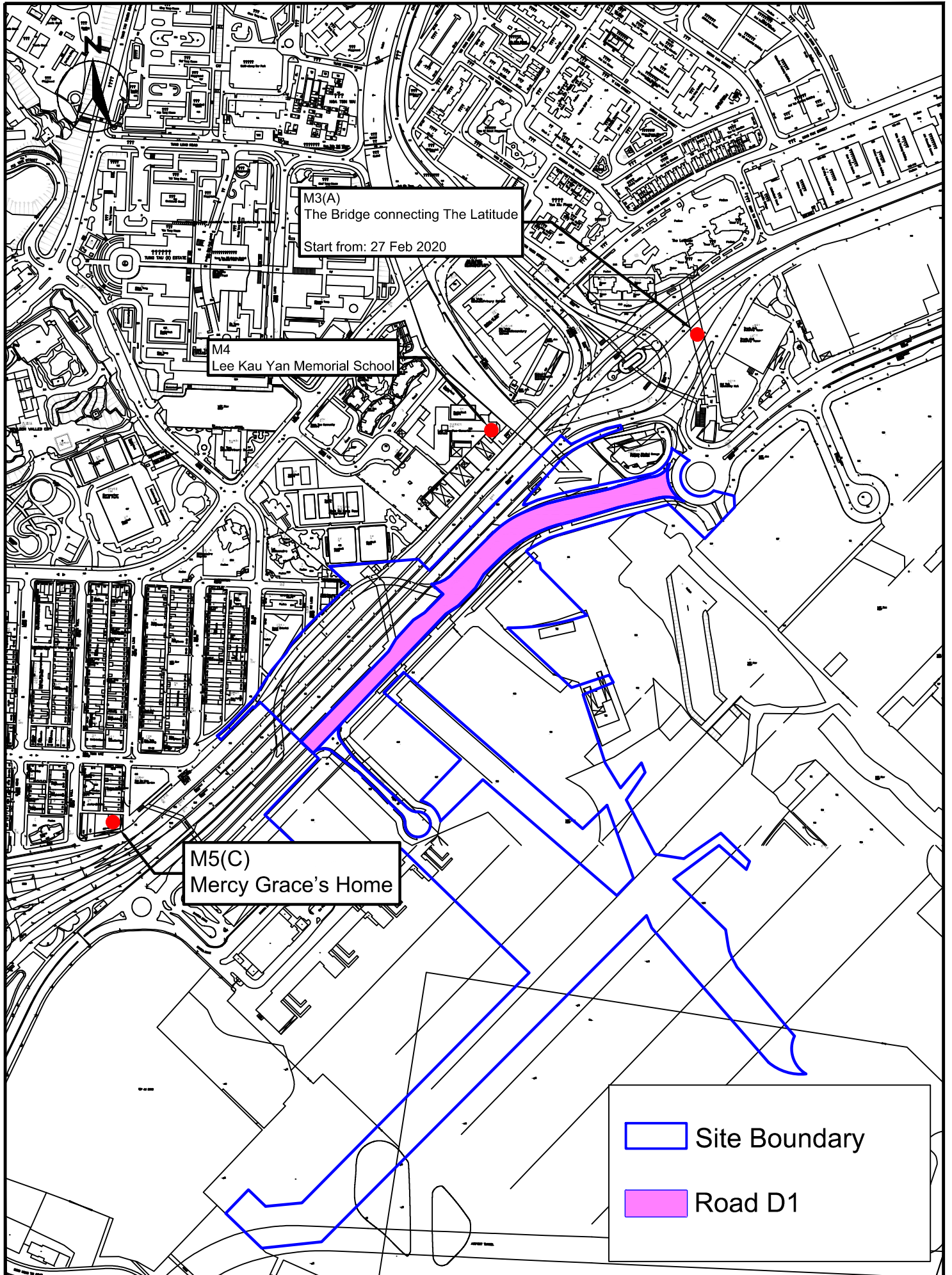
KL/2015/02 KAI TAK - STAGE 5A INFRASTRUCTURE
AT FORMER NORTH APRON AREA

SITE LAYOUT PLAN

SCALE	1:1500@A4	DATE	DEC 2016
CHECK	KC	DRAWN	JW
JOB No.	MA16043	FIGURE NO.	1
		REV	-



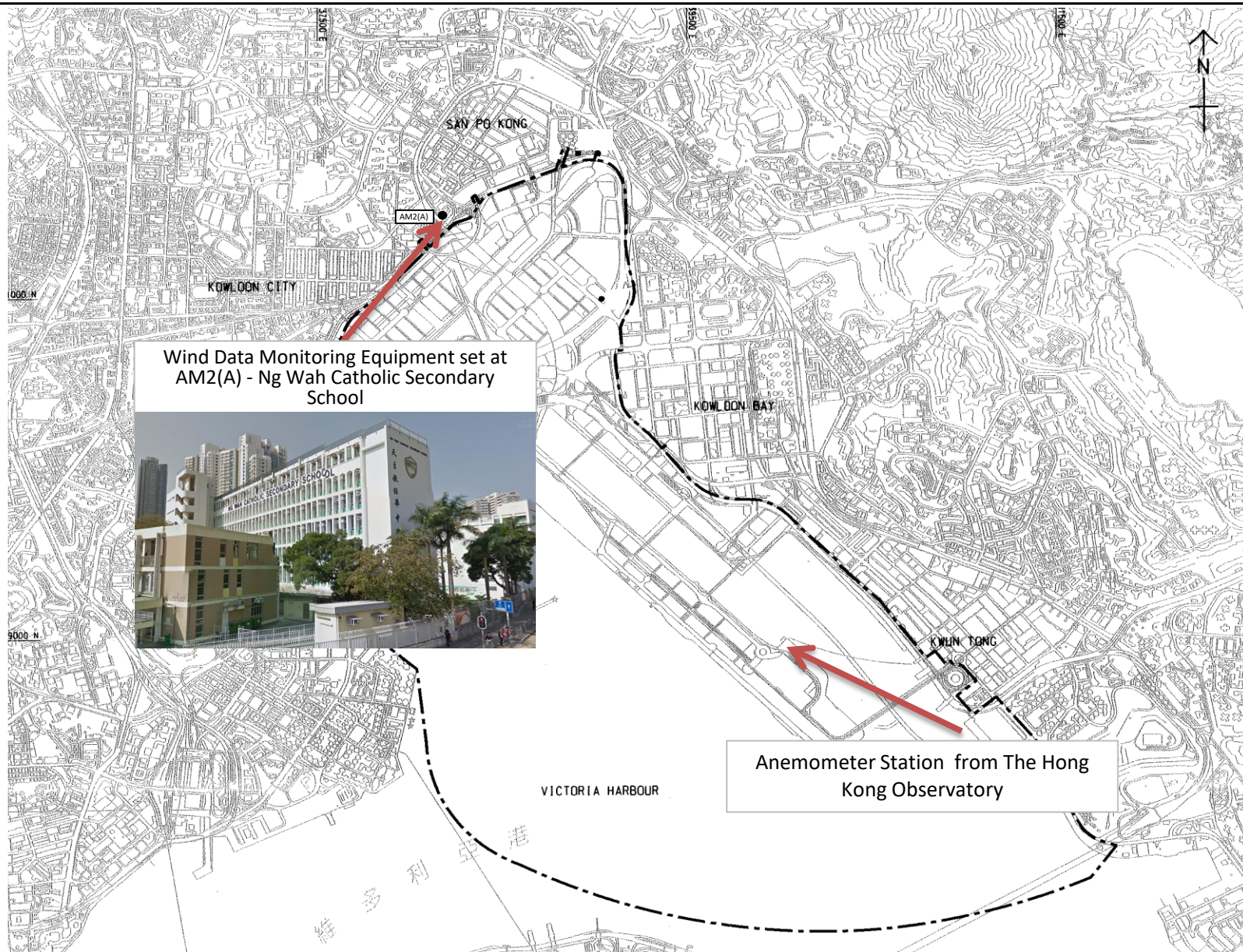
Title	Contract No. KLN/2016/04		Scale	Project	CINOTECH
	Environmental Monitoring Works for Contract No. KL/2015/02		N.T.S	No. MA16043	
Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area			Date	Figure	
Location of Air Quality Monitoring Stations			Aug-17	2	



KL/2015/02 KAI TAK - STAGE 5A INFRASTRUCTURE
AT FORMER NORTH APRON AREA

Location of Noise Monitoring Station

SCALE	1:5000@A4	DATE	Mar 2020
CHECK	KC	DRAWN	CC
JOB No.	MA16043	FIGURE NO.	3
		REV	-



Wind Data Monitoring Equipment set at AM2(A) - Ng Wah Catholic Secondary School



Anemometer Station from The Hong Kong Observatory

Title	Contract No. KLN/2016/04		Scale	Project No.	CINOTECH
	Environmental Monitoring Works for Contract No. KL/2015/02				
	Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area		Date	Figure	
Location of Wind Data Monitoring Equipment		Aug-17	4		

**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE**

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2	346	500

Table A-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2(A)	157	260

Table A-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. *70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

**APPENDIX B-1
COPIES OF CALIBRATION
CERTIFICATES (AIR)**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16043/13/0038

Project No. AM2(A) - Ng Wah Catholic Secondary School
 Date: 6-Sep-23 Next Due Date: 6-Nov-23 Operator: SK
 Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	302.4	Pressure, Pa (mmHg)	754.1

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05928	Intercept, bc	-0.03491
Last Calibration Date:	16-Jan-23	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	16-Jan-24	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	DH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	DW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.0	3.57	60.73	9.8	3.10
2	10.9	3.26	55.66	7.8	2.76
3	8.0	2.80	47.77	5.0	2.21
4	5.4	2.30	39.35	3.0	1.71
5	2.8	1.65	28.50	1.7	1.29

By Linear Regression of Y on X

Slope, mw = 0.0570 Intercept, bw = -0.4302

Correlation coefficient* = 0.9931

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.17

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 6-Sep-23

Checked by: Henry Leung Signature: Date: 6-Sep-23

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16043/13/0039

Project No. AM2(A) - Ng Wah Catholic Secondary School
 Date: 6-Nov-23 Next Due Date: 6-Jan-24 Operator: SK
 Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	300.6	Pressure, Pa (mmHg)	761.4

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05928	Intercept, bc	-0.03491
Last Calibration Date:	16-Jan-23	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	16-Jan-24	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	DW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.9	3.58	60.97	9.9	3.14
2	10.8	3.28	55.84	7.8	2.78
3	7.9	2.80	47.84	5.0	2.23
4	5.2	2.27	38.92	3.0	1.73
5	2.7	1.64	28.21	1.8	1.34

By Linear Regression of Y on X

Slope, mw = 0.0557 Intercept, bw = -0.3392

Correlation coefficient* = 0.9914

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.25

Remarks: _____

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 6-Nov-23

Checked by: Henry Leung Signature: [Signature] Date: 6-Nov-23

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 30-Sep-23
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-23
 Model No.: LD-5R
 Serial No.: 972780
 Equipment No.: SA-01-09 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 739 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 739 CPM

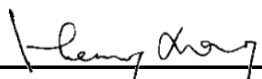
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	72.0	138.0
2	62.0	118.0
3	50.0	97.0
Average	61.3	117.7
By Linear Regression of Y on X Slope , mw = <u>1.8599</u> Intercept, bw = <u>3.5934</u> Correlation coefficient* = <u>0.9993</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	117.7	
Particulate Concentration by Dust Meter (µg/m ³)	61.3	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>1.9</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Limited)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

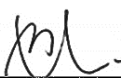
Description: Digital Dust Indicator Date of Calibration 30-Sep-23
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 30-Nov-23
 Model No.: LD-5R
 Serial No.: 972781
 Equipment No.: SA-01-10 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 734 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 734 CPM

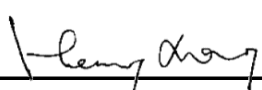
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	81.0	133.0
2	71.0	115.0
3	60.0	98.0
Average	70.7	115.3
By Linear Regression of Y on X Slope , mw = <u>1.6647</u> Intercept, bw = <u>-2.3021</u> Correlation coefficient* = <u>0.9990</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)		115.3
Particulate Concentration by Dust Meter (µg/m ³)		70.7
Measuring time, (min)		60.0
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]		<u>1.6</u>

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Limited)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)



Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 16, 2023	Rootsmer S/N: 438320	Ta: 293	°K
Operator: Jim Tisch		Pa: 749.0	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 3864		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4440	3.2	2.00
2	3	4	1	1.0220	6.4	4.00
3	5	6	1	0.9100	8.0	5.00
4	7	8	1	0.8710	8.8	5.50
5	9	10	1	0.7210	12.8	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)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
0.9981	0.6912	1.4159	0.9957	0.6896	0.8845
0.9938	0.9724	2.0024	0.9915	0.9701	1.2509
0.9917	1.0898	2.2388	0.9893	1.0872	1.3985
0.9906	1.1373	2.3480	0.9883	1.1346	1.4668
0.9853	1.3665	2.8318	0.9829	1.3633	1.7690
QSTD	m=	2.09452	QA	m=	1.31155
	b=	-0.03493		b=	-0.02182
	r=	0.99995		r=	0.99995

Calculations	
Vstd= $\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$	Va= $\Delta Vol((Pa-\Delta P)/Pa)$
Qstd= $Vstd/\Delta Time$	Qa= $Va/\Delta Time$
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= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmer 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

Certificate of Calibration - Wind Monitoring Station

Description: Ng Wah Catholic Secondary School - Weather Stations
 Manufacturer: Davis Instruments
 Model No.: Davis 6152, Vantage Pro2
 Serial No.: BC180522050
 Equipment No.: SA-03-03
 Date of Calibration: 5-Oct-2023
 Next Due Date: 5-Apr-2024

1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V1)	$D = V1 - V2$
0.0	0.0	0.0
1.3	1.4	-0.1
2.4	2.5	-0.1
3.5	3.5	0.0

2. Performance check of Wind Direction


Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer

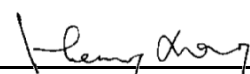
2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:



 Wong Shing Kwai

Approved by:



 Henry Leung

**APPENDIX B-2
COPIES OF CALIBRATION
CERTIFICATES (NOISE)**

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00361
Application No. : HP00236

Issue Date : 30 Mar 2023

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-04

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580238
Microphone No.	570605

Date Received : 27 Mar 2023

Test Period : 28 Mar 2023 to 28 Mar 2023

Test Requested : Performance checking for Sound Level Meter

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

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to be 'Lee Wai Kit', written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00361
Application No. : HP00236

Issue Date : 30 Mar 2023

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.2	+ 0.2	± 1.5
114.0	114.3	+ 0.3	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
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Report No. : 00364
Application No. : HP00240

Issue Date : 03 Apr 2023

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-05

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580287
Microphone No.	570610

Date Received : 03 Apr 2023

Test Period : 03 Apr 2023 to 03 Apr 2023

Test Requested : Performance checking for Sound Level Meter

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

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00364
Application No. : HP00240

Issue Date : 03 Apr 2023

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.2	+ 0.2	± 1.5
114.0	114.2	+ 0.2	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00370
Application No. : HP00242

Issue Date : 02 May 2023

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : SN-01-01

Manufacturer: : SVANTEK

Other information :

Model No.	SVAN 979
Serial No.	27189
Microphone No.	25202

Date Received : 02 May 2023

Test Period : 02 May 2023 to 02 May 2023

Test Requested : Performance checking for Sound Level Meter

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

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to be 'Lee Wai Kit', written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00370
Application No. : HP00242

Issue Date : 02 May 2023

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	93.9	- 0.1	± 1.5
114.0	114.0	± 0.0	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00288
Application No. : HP00176

Issue Date : 10 Nov 2022

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-13-03

Manufacturer: : SOUNDTEK

Other information	Model No.	ST-120
	Serial No.	181001637

Date Received : 10 Nov 2022

Test Period : 10 Nov 2022 to 10 Nov 2022

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00288

Issue Date : 10 Nov 2022

Application No. : HP00176

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Description	Sound Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	570183
Microphone No.	570605
Equipment No.	N-12-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+ 0.1	± 0.3
114.0	114.2	+ 0.2	± 0.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C230859
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC23-0255) Date of Receipt / 收件日期 : 7 February 2023

Description / 儀器名稱 : Acoustical Calibrator
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2326353
Supplied By / 委託者 : Cinotech Consultants Limited
Room 1710, Technology Park, 18 On Lai Street,
Shatin, N.T. Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(50 \pm 25)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 18 February 2023

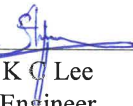
TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed specified limits.
These limits refer to manufacturer's published tolerances as requested by the customer.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By : 
測試 : _____
H T Wong
Assistant Engineer

Certified By : 
核證 : _____
K C Lee
Engineer

Date of Issue : 20 February 2023
簽發日期

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C230859
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C223647
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221750

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Limit (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Limit	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 - 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

APPENDIX C
WEATHER INFORMATION

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023

Date	Mean Pressure (hPa)	Air Temperature	Mean Relative Humidity (%)	Precipitation (mm)
		Mean (°C)		
1-Nov-23	1017.7	25.8	70	0
2-Nov-23	1015.5	25.8	75	0
3-Nov-23	1013.6	26.0	78	0
4-Nov-23	1013.9	26.3	76	0
5-Nov-23	1014.4	26.7	77	0
6-Nov-23	1015.1	27.6	65	0
7-Nov-23	1016.5	25.9	70	0
8-Nov-23	1015.8	25.2	77	0
9-Nov-23	1015.4	25.7	81	Trace
10-Nov-23	1016.0	26.9	82	0
11-Nov-23	1017.7	25.3	85	2.5
12-Nov-23	1020.2	24.0	77	0.6
13-Nov-23	1022.7	22.0	67	0
14-Nov-23	1022.6	20.8	70	0
15-Nov-23	1021.7	22.8	71	0
16-Nov-23	1023.6	21.5	65	0
17-Nov-23	1023.9	18.8	37	0
18-Nov-23	1022.9	19.5	42	0
19-Nov-23	1020.9	20.5	59	0
20-Nov-23	1019.4	21.3	65	0
21-Nov-23	1017.5	22.0	70	0
22-Nov-23	1016.3	22.6	73	0
23-Nov-23	1016.4	23.0	74	0
24-Nov-23	1019.6	22.9	67	0
25-Nov-23	1021.0	21.9	66	0
26-Nov-23	1020.1	22.1	68	0
27-Nov-23	1018.1	23.0	68	0
28-Nov-23	1018.7	22.8	61	Trace
29-Nov-23	1018.7	22.7	73	0.2
30-Nov-23	1019.9	23.8	73	0

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
1-Nov-23	0:00	0.6	SSE
1-Nov-23	1:00	0.7	S
1-Nov-23	2:00	0.5	SE
1-Nov-23	3:00	0.8	SSE
1-Nov-23	4:00	0.1	SE
1-Nov-23	5:00	0.4	S
1-Nov-23	6:00	0.5	SSE
1-Nov-23	7:00	0.3	SSE
1-Nov-23	8:00	1.2	S
1-Nov-23	9:00	2.0	S
1-Nov-23	10:00	1.8	SW
1-Nov-23	11:00	1.7	SSW
1-Nov-23	12:00	1.4	S
1-Nov-23	13:00	0.8	SE
1-Nov-23	14:00	0.9	S
1-Nov-23	15:00	1.3	WSW
1-Nov-23	16:00	1.3	SW
1-Nov-23	17:00	1.5	W
1-Nov-23	18:00	1.4	W
1-Nov-23	19:00	1.2	WNW
1-Nov-23	20:00	0.7	SW
1-Nov-23	21:00	0.6	S
1-Nov-23	22:00	0.6	SSE
1-Nov-23	23:00	0.3	SSW
2-Nov-23	0:00	0.5	SSE
2-Nov-23	1:00	0.6	S
2-Nov-23	2:00	0.2	SSE
2-Nov-23	3:00	0.0	SSW
2-Nov-23	4:00	0.4	S
2-Nov-23	5:00	0.3	SSE
2-Nov-23	6:00	0.2	SSE
2-Nov-23	7:00	0.5	SSE
2-Nov-23	8:00	1.2	SSE
2-Nov-23	9:00	0.8	SW
2-Nov-23	10:00	0.7	SE
2-Nov-23	11:00	0.5	SE
2-Nov-23	12:00	1.1	S
2-Nov-23	13:00	1.2	SSW
2-Nov-23	14:00	1.4	SSW
2-Nov-23	15:00	0.9	ESE
2-Nov-23	16:00	1.0	SW
2-Nov-23	17:00	1.3	W
2-Nov-23	18:00	0.7	SSE
2-Nov-23	19:00	0.7	SSE
2-Nov-23	20:00	0.4	SSE
2-Nov-23	21:00	0.4	SSE
2-Nov-23	22:00	0.3	SSE
2-Nov-23	23:00	0.3	SSE

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
3-Nov-23	0:00	0.2	SSE
3-Nov-23	1:00	0.0	S
3-Nov-23	2:00	0.1	S
3-Nov-23	3:00	0.5	S
3-Nov-23	4:00	0.2	S
3-Nov-23	5:00	0.4	SSE
3-Nov-23	6:00	0.4	SSE
3-Nov-23	7:00	0.3	SE
3-Nov-23	8:00	0.8	S
3-Nov-23	9:00	0.7	S
3-Nov-23	10:00	0.5	SSW
3-Nov-23	11:00	1.3	SW
3-Nov-23	12:00	1.1	SW
3-Nov-23	13:00	1.4	S
3-Nov-23	14:00	1.1	SW
3-Nov-23	15:00	1.2	SSE
3-Nov-23	16:00	1.0	S
3-Nov-23	17:00	0.7	SSE
3-Nov-23	18:00	0.4	S
3-Nov-23	19:00	0.4	S
3-Nov-23	20:00	0.4	SSE
3-Nov-23	21:00	0.5	SSE
3-Nov-23	22:00	0.9	WSW
3-Nov-23	23:00	0.9	W
4-Nov-23	0:00	0.6	SSW
4-Nov-23	1:00	0.3	SSE
4-Nov-23	2:00	0.1	S
4-Nov-23	3:00	0.2	SSE
4-Nov-23	4:00	0.2	S
4-Nov-23	5:00	0.0	SSE
4-Nov-23	6:00	0.0	SSE
4-Nov-23	7:00	0.0	S
4-Nov-23	8:00	0.6	S
4-Nov-23	9:00	0.6	SSE
4-Nov-23	10:00	1.0	SW
4-Nov-23	11:00	0.9	SE
4-Nov-23	12:00	1.4	S
4-Nov-23	13:00	1.3	WSW
4-Nov-23	14:00	1.8	WSW
4-Nov-23	15:00	1.6	WSW
4-Nov-23	16:00	1.1	SSW
4-Nov-23	17:00	1.0	SSW
4-Nov-23	18:00	1.1	SSW
4-Nov-23	19:00	0.8	SW
4-Nov-23	20:00	0.3	SE
4-Nov-23	21:00	0.1	SSE
4-Nov-23	22:00	0.0	SW
4-Nov-23	23:00	0.0	S

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
5-Nov-23	0:00	0.0	SSE
5-Nov-23	1:00	0.3	SSE
5-Nov-23	2:00	0.4	SSE
5-Nov-23	3:00	0.0	SSE
5-Nov-23	4:00	0.0	S
5-Nov-23	5:00	0.0	SSE
5-Nov-23	6:00	0.3	S
5-Nov-23	7:00	0.2	S
5-Nov-23	8:00	0.7	S
5-Nov-23	9:00	0.5	SSW
5-Nov-23	10:00	0.6	SSW
5-Nov-23	11:00	0.6	SSE
5-Nov-23	12:00	1.5	S
5-Nov-23	13:00	0.8	SSE
5-Nov-23	14:00	1.0	SSE
5-Nov-23	15:00	1.1	SSW
5-Nov-23	16:00	0.8	SSW
5-Nov-23	17:00	0.8	SW
5-Nov-23	18:00	0.7	S
5-Nov-23	19:00	0.4	SSE
5-Nov-23	20:00	0.0	SSE
5-Nov-23	21:00	0.2	SSE
5-Nov-23	22:00	0.1	SSE
5-Nov-23	23:00	0.0	SSE
6-Nov-23	0:00	0.3	S
6-Nov-23	1:00	0.5	S
6-Nov-23	2:00	0.3	SSE
6-Nov-23	3:00	0.2	S
6-Nov-23	4:00	0.0	SSE
6-Nov-23	5:00	0.0	S
6-Nov-23	6:00	0.1	SSE
6-Nov-23	7:00	0.2	SSW
6-Nov-23	8:00	0.8	S
6-Nov-23	9:00	2.1	S
6-Nov-23	10:00	2.3	S
6-Nov-23	11:00	3.1	S
6-Nov-23	12:00	2.6	S
6-Nov-23	13:00	2.7	S
6-Nov-23	14:00	3.1	S
6-Nov-23	15:00	3.1	S
6-Nov-23	16:00	2.8	S
6-Nov-23	17:00	2.3	S
6-Nov-23	18:00	1.8	SSE
6-Nov-23	19:00	0.8	S
6-Nov-23	20:00	1.2	SSE
6-Nov-23	21:00	0.8	SE
6-Nov-23	22:00	0.6	SSE
6-Nov-23	23:00	0.5	SSE

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
7-Nov-23	0:00	0.7	S
7-Nov-23	1:00	0.7	S
7-Nov-23	2:00	0.9	SSE
7-Nov-23	3:00	0.9	SSE
7-Nov-23	4:00	0.8	SSE
7-Nov-23	5:00	0.4	S
7-Nov-23	6:00	0.8	SSE
7-Nov-23	7:00	1.0	SSE
7-Nov-23	8:00	1.2	SSE
7-Nov-23	9:00	1.8	S
7-Nov-23	10:00	1.7	SSW
7-Nov-23	11:00	1.4	SSW
7-Nov-23	12:00	1.5	SSW
7-Nov-23	13:00	1.4	SW
7-Nov-23	14:00	1.2	SSW
7-Nov-23	15:00	1.1	SW
7-Nov-23	16:00	1.1	SW
7-Nov-23	17:00	1.2	S
7-Nov-23	18:00	0.5	S
7-Nov-23	19:00	1.0	SW
7-Nov-23	20:00	1.8	WSW
7-Nov-23	21:00	1.3	WSW
7-Nov-23	22:00	0.8	SSW
7-Nov-23	23:00	0.8	SW
8-Nov-23	0:00	0.6	SSW
8-Nov-23	1:00	1.5	W
8-Nov-23	2:00	0.7	WSW
8-Nov-23	3:00	0.7	SSW
8-Nov-23	4:00	0.5	SSW
8-Nov-23	5:00	0.9	S
8-Nov-23	6:00	0.7	SSW
8-Nov-23	7:00	1.3	SW
8-Nov-23	8:00	1.6	SSW
8-Nov-23	9:00	1.8	SW
8-Nov-23	10:00	1.4	SSW
8-Nov-23	11:00	1.4	SSW
8-Nov-23	12:00	1.4	SW
8-Nov-23	13:00	1.1	S
8-Nov-23	14:00	1.6	SSW
8-Nov-23	15:00	1.5	W
8-Nov-23	16:00	1.3	WSW
8-Nov-23	17:00	1.0	SSW
8-Nov-23	18:00	0.6	SSW
8-Nov-23	19:00	0.8	S
8-Nov-23	20:00	0.9	WSW
8-Nov-23	21:00	0.5	S
8-Nov-23	22:00	0.8	WSW
8-Nov-23	23:00	0.7	SW

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
9-Nov-23	0:00	0.7	N
9-Nov-23	1:00	0.9	S
9-Nov-23	2:00	0.9	SSW
9-Nov-23	3:00	1.0	S
9-Nov-23	4:00	0.6	SSW
9-Nov-23	5:00	1.1	SSW
9-Nov-23	6:00	0.8	SW
9-Nov-23	7:00	1.4	SSW
9-Nov-23	8:00	1.0	SW
9-Nov-23	9:00	1.1	SSW
9-Nov-23	10:00	1.6	SW
9-Nov-23	11:00	1.4	SW
9-Nov-23	12:00	1.5	W
9-Nov-23	13:00	1.8	SSW
9-Nov-23	14:00	1.2	SW
9-Nov-23	15:00	1.3	SSW
9-Nov-23	16:00	1.0	S
9-Nov-23	17:00	0.8	S
9-Nov-23	18:00	1.0	S
9-Nov-23	19:00	0.5	S
9-Nov-23	20:00	0.1	S
9-Nov-23	21:00	0.2	SSE
9-Nov-23	22:00	0.1	SSE
9-Nov-23	23:00	0.4	S
10-Nov-23	0:00	0.5	SSW
10-Nov-23	1:00	0.5	S
10-Nov-23	2:00	0.1	SSE
10-Nov-23	3:00	0.2	SSW
10-Nov-23	4:00	0.3	SE
10-Nov-23	5:00	0.7	S
10-Nov-23	6:00	0.3	S
10-Nov-23	7:00	0.6	SSE
10-Nov-23	8:00	1.0	SSE
10-Nov-23	9:00	0.8	SW
10-Nov-23	10:00	1.5	SW
10-Nov-23	11:00	0.9	S
10-Nov-23	12:00	1.5	SSW
10-Nov-23	13:00	1.7	S
10-Nov-23	14:00	0.9	S
10-Nov-23	15:00	1.7	WNW
10-Nov-23	16:00	1.4	W
10-Nov-23	17:00	1.7	WNW
10-Nov-23	18:00	1.2	WNW
10-Nov-23	19:00	1.3	W
10-Nov-23	20:00	0.9	WSW
10-Nov-23	21:00	0.5	S
10-Nov-23	22:00	0.5	SSE
10-Nov-23	23:00	0.3	S

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
11-Nov-23	0:00	0.5	SW
11-Nov-23	1:00	0.5	SW
11-Nov-23	2:00	0.5	SE
11-Nov-23	3:00	0.6	SSE
11-Nov-23	4:00	0.6	SSE
11-Nov-23	5:00	0.8	SSE
11-Nov-23	6:00	0.9	S
11-Nov-23	7:00	1.1	SSE
11-Nov-23	8:00	1.0	S
11-Nov-23	9:00	1.0	SSW
11-Nov-23	10:00	1.2	S
11-Nov-23	11:00	1.3	S
11-Nov-23	12:00	1.6	SW
11-Nov-23	13:00	1.5	SSW
11-Nov-23	14:00	1.5	SSW
11-Nov-23	15:00	1.5	SSW
11-Nov-23	16:00	1.9	SW
11-Nov-23	17:00	1.8	SW
11-Nov-23	18:00	1.3	SW
11-Nov-23	19:00	1.3	S
11-Nov-23	20:00	0.7	SSE
11-Nov-23	21:00	1.0	SSE
11-Nov-23	22:00	0.4	SSE
11-Nov-23	23:00	0.3	S
12-Nov-23	0:00	0.3	S
12-Nov-23	1:00	1.1	SSW
12-Nov-23	2:00	0.7	SSW
12-Nov-23	3:00	1.4	S
12-Nov-23	4:00	1.3	S
12-Nov-23	5:00	1.7	SSW
12-Nov-23	6:00	2.0	S
12-Nov-23	7:00	2.3	S
12-Nov-23	8:00	2.7	S
12-Nov-23	9:00	2.2	S
12-Nov-23	10:00	3.0	S
12-Nov-23	11:00	2.8	S
12-Nov-23	12:00	2.4	S
12-Nov-23	13:00	2.0	SSW
12-Nov-23	14:00	2.4	S
12-Nov-23	15:00	2.0	SSW
12-Nov-23	16:00	2.0	S
12-Nov-23	17:00	2.4	SSW
12-Nov-23	18:00	2.7	S
12-Nov-23	19:00	2.9	SSW
12-Nov-23	20:00	2.6	SSW
12-Nov-23	21:00	2.2	S
12-Nov-23	22:00	2.3	SSE
12-Nov-23	23:00	2.3	SSW

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
13-Nov-23	0:00	2.8	SSW
13-Nov-23	1:00	2.9	SSW
13-Nov-23	2:00	2.0	SSW
13-Nov-23	3:00	2.2	S
13-Nov-23	4:00	2.3	S
13-Nov-23	5:00	1.8	SSW
13-Nov-23	6:00	1.7	S
13-Nov-23	7:00	2.2	SSW
13-Nov-23	8:00	2.5	SSW
13-Nov-23	9:00	3.1	SSW
13-Nov-23	10:00	2.8	S
13-Nov-23	11:00	2.6	S
13-Nov-23	12:00	1.9	S
13-Nov-23	13:00	2.2	SSE
13-Nov-23	14:00	2.6	SSE
13-Nov-23	15:00	3.9	SSE
13-Nov-23	16:00	3.2	S
13-Nov-23	17:00	2.8	S
13-Nov-23	18:00	2.6	S
13-Nov-23	19:00	2.6	S
13-Nov-23	20:00	2.2	S
13-Nov-23	21:00	1.8	S
13-Nov-23	22:00	2.2	S
13-Nov-23	23:00	2.0	SSW
14-Nov-23	0:00	1.6	S
14-Nov-23	1:00	2.4	SSW
14-Nov-23	2:00	1.5	SSW
14-Nov-23	3:00	1.7	SSW
14-Nov-23	4:00	2.1	SSW
14-Nov-23	5:00	2.5	S
14-Nov-23	6:00	2.1	S
14-Nov-23	7:00	2.0	S
14-Nov-23	8:00	2.3	SSW
14-Nov-23	9:00	2.3	S
14-Nov-23	10:00	1.5	SSW
14-Nov-23	11:00	1.5	SSE
14-Nov-23	12:00	1.5	S
14-Nov-23	13:00	1.3	S
14-Nov-23	14:00	1.7	S
14-Nov-23	15:00	2.6	S
14-Nov-23	16:00	2.4	S
14-Nov-23	17:00	2.1	S
14-Nov-23	18:00	1.3	SSE
14-Nov-23	19:00	1.0	S
14-Nov-23	20:00	0.9	S
14-Nov-23	21:00	0.8	S
14-Nov-23	22:00	0.8	S
14-Nov-23	23:00	0.8	SSE

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
15-Nov-23	0:00	0.9	SSE
15-Nov-23	1:00	1.1	SSE
15-Nov-23	2:00	0.5	S
15-Nov-23	3:00	1.5	S
15-Nov-23	4:00	1.4	SSW
15-Nov-23	5:00	1.6	SSW
15-Nov-23	6:00	1.6	SSW
15-Nov-23	7:00	2.2	SSW
15-Nov-23	8:00	2.1	S
15-Nov-23	9:00	1.9	S
15-Nov-23	10:00	1.5	SSE
15-Nov-23	11:00	2.0	S
15-Nov-23	12:00	1.9	SSW
15-Nov-23	13:00	2.1	SSW
15-Nov-23	14:00	1.6	SSW
15-Nov-23	15:00	1.4	SSW
15-Nov-23	16:00	0.9	SSE
15-Nov-23	17:00	0.6	S
15-Nov-23	18:00	0.7	S
15-Nov-23	19:00	0.4	S
15-Nov-23	20:00	0.1	SE
15-Nov-23	21:00	0.3	SSE
15-Nov-23	22:00	0.1	S
15-Nov-23	23:00	0.1	SSE
16-Nov-23	0:00	0.3	SSE
16-Nov-23	1:00	0.1	SSE
16-Nov-23	2:00	0.3	SW
16-Nov-23	3:00	0.1	SSE
16-Nov-23	4:00	0.1	S
16-Nov-23	5:00	1.1	SSW
16-Nov-23	6:00	2.0	S
16-Nov-23	7:00	1.5	SSE
16-Nov-23	8:00	2.4	SSE
16-Nov-23	9:00	3.5	S
16-Nov-23	10:00	3.8	S
16-Nov-23	11:00	4.1	SSE
16-Nov-23	12:00	4.0	S
16-Nov-23	13:00	4.3	SSE
16-Nov-23	14:00	4.1	SSE
16-Nov-23	15:00	4.7	SSW
16-Nov-23	16:00	4.3	S
16-Nov-23	17:00	4.6	S
16-Nov-23	18:00	5.4	S
16-Nov-23	19:00	4.3	S
16-Nov-23	20:00	4.1	SSE
16-Nov-23	21:00	3.8	SSE
16-Nov-23	22:00	3.0	SSE
16-Nov-23	23:00	2.5	SSE

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
17-Nov-23	0:00	2.5	SSE
17-Nov-23	1:00	2.7	S
17-Nov-23	2:00	2.7	SSE
17-Nov-23	3:00	3.0	SSE
17-Nov-23	4:00	2.8	SSE
17-Nov-23	5:00	3.3	S
17-Nov-23	6:00	3.4	SSE
17-Nov-23	7:00	2.8	SSE
17-Nov-23	8:00	2.9	S
17-Nov-23	9:00	4.0	SSW
17-Nov-23	10:00	3.1	S
17-Nov-23	11:00	3.5	SSW
17-Nov-23	12:00	2.9	SSE
17-Nov-23	13:00	3.3	S
17-Nov-23	14:00	4.5	SSE
17-Nov-23	15:00	4.0	SSE
17-Nov-23	16:00	3.0	S
17-Nov-23	17:00	2.0	S
17-Nov-23	18:00	0.7	SSE
17-Nov-23	19:00	0.7	SE
17-Nov-23	20:00	0.5	SSE
17-Nov-23	21:00	0.7	S
17-Nov-23	22:00	1.0	SSE
17-Nov-23	23:00	0.2	ESE
18-Nov-23	0:00	0.4	SE
18-Nov-23	1:00	1.0	SSE
18-Nov-23	2:00	0.5	S
18-Nov-23	3:00	0.7	S
18-Nov-23	4:00	0.5	SSE
18-Nov-23	5:00	0.7	SSE
18-Nov-23	6:00	1.1	S
18-Nov-23	7:00	1.7	S
18-Nov-23	8:00	2.3	S
18-Nov-23	9:00	2.9	SSW
18-Nov-23	10:00	2.6	S
18-Nov-23	11:00	2.1	S
18-Nov-23	12:00	2.0	S
18-Nov-23	13:00	1.7	SSW
18-Nov-23	14:00	1.9	S
18-Nov-23	15:00	1.8	S
18-Nov-23	16:00	1.5	SE
18-Nov-23	17:00	0.2	SE
18-Nov-23	18:00	0.5	SSE
18-Nov-23	19:00	0.5	SSE
18-Nov-23	20:00	0.3	SE
18-Nov-23	21:00	0.2	S
18-Nov-23	22:00	0.4	SSE
18-Nov-23	23:00	0.4	SSE

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
19-Nov-23	0:00	0.5	S
19-Nov-23	1:00	0.4	SE
19-Nov-23	2:00	0.5	S
19-Nov-23	3:00	0.2	SSE
19-Nov-23	4:00	0.3	SSE
19-Nov-23	5:00	0.3	S
19-Nov-23	6:00	0.5	SSE
19-Nov-23	7:00	0.7	SSE
19-Nov-23	8:00	1.3	S
19-Nov-23	9:00	2.0	S
19-Nov-23	10:00	1.1	S
19-Nov-23	11:00	1.3	SE
19-Nov-23	12:00	1.1	S
19-Nov-23	13:00	0.9	S
19-Nov-23	14:00	1.1	S
19-Nov-23	15:00	1.0	SE
19-Nov-23	16:00	1.0	SSE
19-Nov-23	17:00	0.4	SSE
19-Nov-23	18:00	0.1	SSE
19-Nov-23	19:00	0.1	SSE
19-Nov-23	20:00	0.0	SSE
19-Nov-23	21:00	0.1	SSE
19-Nov-23	22:00	0.1	SE
19-Nov-23	23:00	0.0	SSE
20-Nov-23	0:00	0.1	SSE
20-Nov-23	1:00	0.0	SSE
20-Nov-23	2:00	0.1	SSE
20-Nov-23	3:00	0.3	SSE
20-Nov-23	4:00	0.4	SSE
20-Nov-23	5:00	0.1	SSE
20-Nov-23	6:00	0.2	S
20-Nov-23	7:00	0.0	SSE
20-Nov-23	8:00	1.4	S
20-Nov-23	9:00	1.7	S
20-Nov-23	10:00	1.3	SSE
20-Nov-23	11:00	1.7	S
20-Nov-23	12:00	1.3	SW
20-Nov-23	13:00	1.3	SW
20-Nov-23	14:00	1.2	SW
20-Nov-23	15:00	1.1	SSE
20-Nov-23	16:00	0.7	S
20-Nov-23	17:00	0.7	SSE
20-Nov-23	18:00	0.5	SSE
20-Nov-23	19:00	0.4	SSE
20-Nov-23	20:00	0.1	SE
20-Nov-23	21:00	0.3	SE
20-Nov-23	22:00	0.3	S
20-Nov-23	23:00	0.4	SSE

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
21-Nov-23	0:00	0.3	S
21-Nov-23	1:00	0.3	SSE
21-Nov-23	2:00	0.4	SSE
21-Nov-23	3:00	0.2	S
21-Nov-23	4:00	0.3	SSE
21-Nov-23	5:00	0.6	S
21-Nov-23	6:00	0.4	S
21-Nov-23	7:00	0.0	S
21-Nov-23	8:00	0.7	S
21-Nov-23	9:00	1.2	SSE
21-Nov-23	10:00	1.3	S
21-Nov-23	11:00	1.5	S
21-Nov-23	12:00	0.9	S
21-Nov-23	13:00	1.3	S
21-Nov-23	14:00	1.3	SSW
21-Nov-23	15:00	0.8	SSE
21-Nov-23	16:00	0.9	S
21-Nov-23	17:00	0.7	S
21-Nov-23	18:00	0.4	SSW
21-Nov-23	19:00	0.1	SE
21-Nov-23	20:00	0.0	SSE
21-Nov-23	21:00	0.0	SE
21-Nov-23	22:00	0.0	SSE
21-Nov-23	23:00	0.3	SSE
22-Nov-23	0:00	0.0	S
22-Nov-23	1:00	0.2	SSE
22-Nov-23	2:00	0.2	S
22-Nov-23	3:00	0.0	S
22-Nov-23	4:00	0.0	S
22-Nov-23	5:00	0.0	S
22-Nov-23	6:00	0.1	S
22-Nov-23	7:00	0.1	SE
22-Nov-23	8:00	0.6	SSE
22-Nov-23	9:00	1.4	SSE
22-Nov-23	10:00	0.8	SSW
22-Nov-23	11:00	0.9	W
22-Nov-23	12:00	0.9	S
22-Nov-23	13:00	0.6	SW
22-Nov-23	14:00	0.9	SE
22-Nov-23	15:00	0.8	SSE
22-Nov-23	16:00	0.8	SSE
22-Nov-23	17:00	0.2	SE
22-Nov-23	18:00	0.7	SSW
22-Nov-23	19:00	0.0	SSE
22-Nov-23	20:00	0.1	SSE
22-Nov-23	21:00	0.1	S
22-Nov-23	22:00	0.2	SSE
22-Nov-23	23:00	0.0	S

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
23-Nov-23	0:00	0.2	SSE
23-Nov-23	1:00	0.0	SSE
23-Nov-23	2:00	0.2	SE
23-Nov-23	3:00	0.1	SSE
23-Nov-23	4:00	0.5	S
23-Nov-23	5:00	0.4	SSE
23-Nov-23	6:00	0.0	SSE
23-Nov-23	7:00	0.0	SSE
23-Nov-23	8:00	0.8	SSE
23-Nov-23	9:00	1.0	S
23-Nov-23	10:00	1.2	SW
23-Nov-23	11:00	1.3	SSW
23-Nov-23	12:00	1.2	SSE
23-Nov-23	13:00	1.2	S
23-Nov-23	14:00	1.0	SSE
23-Nov-23	15:00	0.5	S
23-Nov-23	16:00	0.7	ESE
23-Nov-23	17:00	0.6	SSE
23-Nov-23	18:00	0.4	SE
23-Nov-23	19:00	0.1	SSE
23-Nov-23	20:00	0.0	SSE
23-Nov-23	21:00	0.1	SSE
23-Nov-23	22:00	0.0	SSE
23-Nov-23	23:00	0.5	SSE
24-Nov-23	0:00	0.0	SE
24-Nov-23	1:00	0.3	S
24-Nov-23	2:00	0.1	SE
24-Nov-23	3:00	0.2	SSE
24-Nov-23	4:00	0.2	SSE
24-Nov-23	5:00	0.4	SSE
24-Nov-23	6:00	0.3	SE
24-Nov-23	7:00	0.3	SSE
24-Nov-23	8:00	1.0	S
24-Nov-23	9:00	1.7	SSW
24-Nov-23	10:00	2.4	SSW
24-Nov-23	11:00	2.2	SSW
24-Nov-23	12:00	2.7	SW
24-Nov-23	13:00	3.1	SW
24-Nov-23	14:00	2.0	SSW
24-Nov-23	15:00	1.9	SW
24-Nov-23	16:00	1.6	SSW
24-Nov-23	17:00	1.0	SSW
24-Nov-23	18:00	0.6	SW
24-Nov-23	19:00	0.6	SSE
24-Nov-23	20:00	0.6	S
24-Nov-23	21:00	0.6	SW
24-Nov-23	22:00	0.8	SW
24-Nov-23	23:00	0.6	S

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
25-Nov-23	0:00	0.6	S
25-Nov-23	1:00	0.9	SW
25-Nov-23	2:00	0.9	SSW
25-Nov-23	3:00	1.6	SSW
25-Nov-23	4:00	0.7	SE
25-Nov-23	5:00	0.5	SSE
25-Nov-23	6:00	0.8	S
25-Nov-23	7:00	1.5	SSE
25-Nov-23	8:00	1.7	S
25-Nov-23	9:00	2.0	SSW
25-Nov-23	10:00	2.3	SSW
25-Nov-23	11:00	2.4	SSW
25-Nov-23	12:00	1.7	SW
25-Nov-23	13:00	1.4	SSW
25-Nov-23	14:00	1.1	SSE
25-Nov-23	15:00	1.3	SSE
25-Nov-23	16:00	0.9	SSE
25-Nov-23	17:00	1.3	SSW
25-Nov-23	18:00	0.9	SW
25-Nov-23	19:00	0.6	SSW
25-Nov-23	20:00	0.5	SW
25-Nov-23	21:00	0.4	S
25-Nov-23	22:00	0.4	S
25-Nov-23	23:00	0.1	SSE
26-Nov-23	0:00	0.0	SSE
26-Nov-23	1:00	0.3	SSW
26-Nov-23	2:00	0.5	SSE
26-Nov-23	3:00	0.7	S
26-Nov-23	4:00	0.1	SSE
26-Nov-23	5:00	0.0	SE
26-Nov-23	6:00	0.0	SSE
26-Nov-23	7:00	0.0	S
26-Nov-23	8:00	1.0	S
26-Nov-23	9:00	2.6	S
26-Nov-23	10:00	2.6	S
26-Nov-23	11:00	1.9	SSW
26-Nov-23	12:00	2.0	S
26-Nov-23	13:00	2.5	S
26-Nov-23	14:00	2.6	SSW
26-Nov-23	15:00	1.8	SSW
26-Nov-23	16:00	2.0	SSE
26-Nov-23	17:00	0.6	S
26-Nov-23	18:00	0.3	SSE
26-Nov-23	19:00	0.3	SSE
26-Nov-23	20:00	0.3	SSE
26-Nov-23	21:00	0.3	S
26-Nov-23	22:00	0.1	SSE
26-Nov-23	23:00	0.4	S

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
27-Nov-23	0:00	0.2	SSE
27-Nov-23	1:00	0.4	SSE
27-Nov-23	2:00	0.3	S
27-Nov-23	3:00	0.2	SSE
27-Nov-23	4:00	0.4	SSW
27-Nov-23	5:00	0.2	S
27-Nov-23	6:00	0.2	S
27-Nov-23	7:00	1.0	SSE
27-Nov-23	8:00	1.3	SSW
27-Nov-23	9:00	1.7	S
27-Nov-23	10:00	1.8	S
27-Nov-23	11:00	1.9	S
27-Nov-23	12:00	2.5	S
27-Nov-23	13:00	1.9	S
27-Nov-23	14:00	1.8	SSE
27-Nov-23	15:00	1.1	SE
27-Nov-23	16:00	0.5	S
27-Nov-23	17:00	0.2	SE
27-Nov-23	18:00	0.4	SSE
27-Nov-23	19:00	0.1	SSE
27-Nov-23	20:00	0.0	SSE
27-Nov-23	21:00	0.4	S
27-Nov-23	22:00	0.1	SSE
27-Nov-23	23:00	0.4	SSE
28-Nov-23	0:00	0.6	SSE
28-Nov-23	1:00	1.1	SSE
28-Nov-23	2:00	1.3	SSE
28-Nov-23	3:00	1.5	S
28-Nov-23	4:00	1.2	SSE
28-Nov-23	5:00	1.0	SSE
28-Nov-23	6:00	1.0	SSE
28-Nov-23	7:00	0.3	SSE
28-Nov-23	8:00	1.4	S
28-Nov-23	9:00	1.8	SW
28-Nov-23	10:00	1.7	S
28-Nov-23	11:00	1.8	S
28-Nov-23	12:00	1.9	SW
28-Nov-23	13:00	1.8	S
28-Nov-23	14:00	1.6	SW
28-Nov-23	15:00	1.7	SW
28-Nov-23	16:00	2.0	SW
28-Nov-23	17:00	1.0	SW
28-Nov-23	18:00	0.7	SW
28-Nov-23	19:00	0.4	SW
28-Nov-23	20:00	0.3	S
28-Nov-23	21:00	0.2	S
28-Nov-23	22:00	0.2	SSE
28-Nov-23	23:00	0.1	ESE

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
29-Nov-23	0:00	0.5	SSE
29-Nov-23	1:00	0.4	S
29-Nov-23	2:00	0.9	SSW
29-Nov-23	3:00	1.1	SSW
29-Nov-23	4:00	0.9	S
29-Nov-23	5:00	1.0	SSE
29-Nov-23	6:00	0.7	S
29-Nov-23	7:00	0.8	S
29-Nov-23	8:00	1.2	SSW
29-Nov-23	9:00	0.8	SSW
29-Nov-23	10:00	0.6	SSW
29-Nov-23	11:00	1.5	SSW
29-Nov-23	12:00	1.2	SW
29-Nov-23	13:00	1.3	SW
29-Nov-23	14:00	1.4	SSW
29-Nov-23	15:00	1.5	SSW
29-Nov-23	16:00	1.4	SSW
29-Nov-23	17:00	0.8	SW
29-Nov-23	18:00	0.4	SSW
29-Nov-23	19:00	0.4	SSE
29-Nov-23	20:00	0.6	S
29-Nov-23	21:00	0.4	S
29-Nov-23	22:00	0.2	SSE
29-Nov-23	23:00	0.2	S
30-Nov-23	0:00	0.3	SSE
30-Nov-23	1:00	0.1	SSE
30-Nov-23	2:00	0.3	SSE
30-Nov-23	3:00	0.1	SSE
30-Nov-23	4:00	0.4	SSE
30-Nov-23	5:00	0.2	SSE
30-Nov-23	6:00	0.3	SSE
30-Nov-23	7:00	0.2	SSE
30-Nov-23	8:00	0.7	S
30-Nov-23	9:00	1.6	S
30-Nov-23	10:00	1.2	SSE
30-Nov-23	11:00	0.5	S
30-Nov-23	12:00	1.1	ESE
30-Nov-23	13:00	0.1	SSE
30-Nov-23	14:00	0.4	SE
30-Nov-23	15:00	1.2	SSE
30-Nov-23	16:00	0.3	S
30-Nov-23	17:00	2.0	S
30-Nov-23	18:00	1.6	SSW
30-Nov-23	19:00	0.6	S
30-Nov-23	20:00	0.2	SSE
30-Nov-23	21:00	0.8	SSE
30-Nov-23	22:00	0.7	S
30-Nov-23	23:00	1.3	S

November 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction

**APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES**

Contract No. KLN/2016/04
Environmental Monitoring Works for Contract No. KL/2015/02
Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area
Impact Air and Noise Monitoring Schedule for November 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Nov	2-Nov	3-Nov	4-Nov
			1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]			
5-Nov	6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	11-Nov
	24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]				24-hr TSP [AM2(A)]
12-Nov	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov
	1-hr TSP x 3 [AM2]			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]	
19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov
			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]		
26-Nov	27-Nov	28-Nov	29-Nov	30-Nov		
		24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]			

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

* The noise level limit is 65dB(A) during the exam period

Air Quality Monitoring Station

AM2 - Lee Kau Yan Memorial School
AM2(A) - Ng Wah Catholic Secondary School

Noise Monitoring Station

M3(A) - The Bridge connecting The Latitude
M4 - Lee Kau Yan Memorial School
M5(C) - Mercy Grace's Home

Contract No. KLN/2016/04
Environmental Monitoring Works for Contract No. KL/2015/02
Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area
Impact Air and Noise Monitoring Schedule for December 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Dec	2-Dec
3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec
		1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]				24-hr TSP [AM2(A)]
10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec
	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]				24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]
17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec
				24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]	
24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec
			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2] Noise [M3(A), M4 & M5(C)]		
31-Dec						

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

* The noise level limit is 65dB(A) during the exam period

Air Quality Monitoring Station

AM2 - Lee Kau Yan Memorial School
AM2(A) - Ng Wah Catholic Secondary School

Noise Monitoring Station

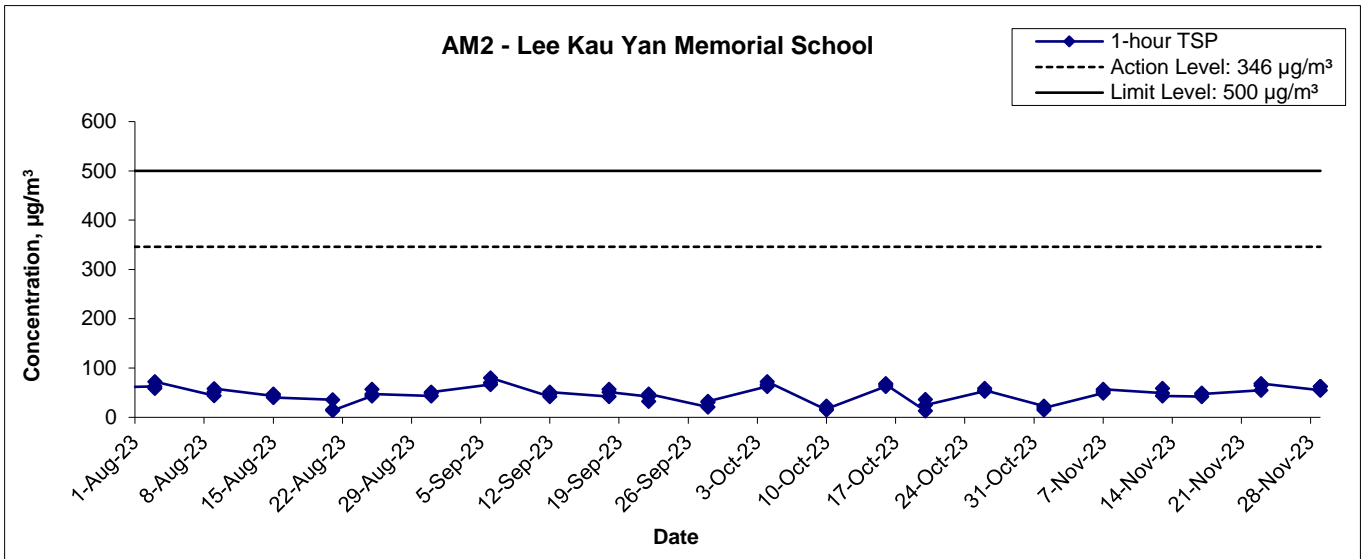
M3(A) - The Bridge connecting The Latitude
M4 - Lee Kau Yan Memorial School
M5(C) - Mercy Grace's Home

**APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATION**

Appendix E - 1-hour TSP Monitoring Results

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
1-Nov-23	9:00	Fine	22.8
1-Nov-23	10:00	Fine	15.2
1-Nov-23	11:00	Fine	19.0
7-Nov-23	9:00	Sunny	49.4
7-Nov-23	10:00	Sunny	53.2
7-Nov-23	11:00	Sunny	57.0
13-Nov-23	11:00	Sunny	49.4
13-Nov-23	12:00	Sunny	58.9
13-Nov-23	13:00	Sunny	43.7
17-Nov-23	13:00	Fine	41.8
17-Nov-23	14:00	Fine	49.4
17-Nov-23	15:00	Fine	47.5
23-Nov-23	13:00	Sunny	55.1
23-Nov-23	14:00	Sunny	64.6
23-Nov-23	15:00	Sunny	68.4
29-Nov-23	13:00	Sunny	55.1
29-Nov-23	14:00	Sunny	62.7
29-Nov-23	15:00	Sunny	62.7
		Average	48.7
		Maximum	68.4
		Minimum	15.2

1-hr TSP Concentration Levels



Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale	N.T.S	Project No.	MA16043	CINOTECH
	Date	Nov 23	Appendix	E	

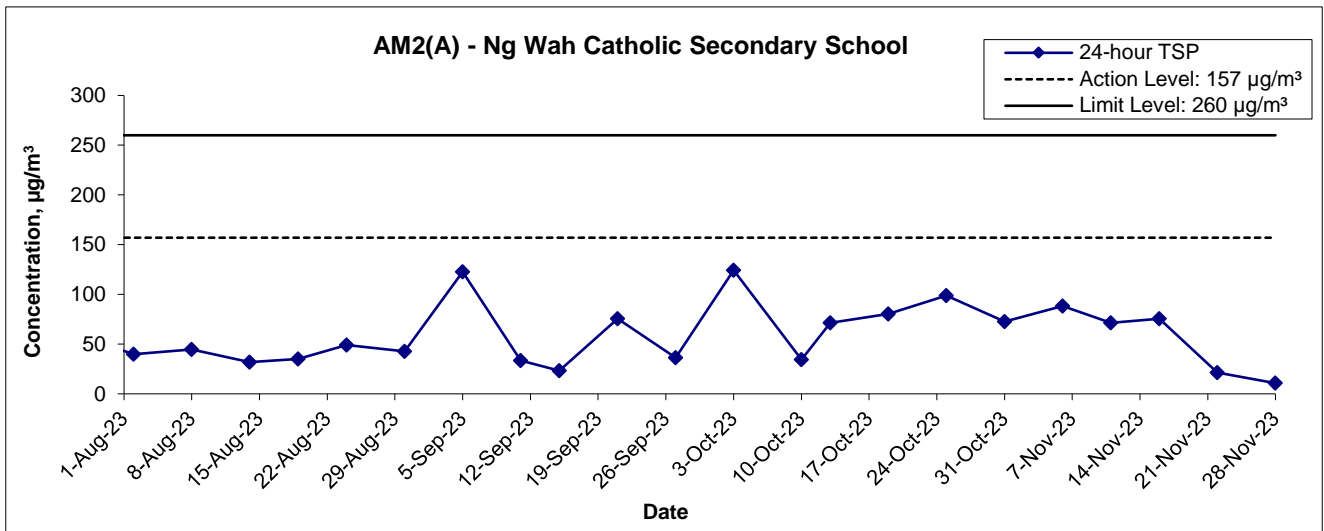
**APPENDIX F
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATION**

Appendix F - 24-hour TSP Monitoring Results

Location AM2(A) - Ng Wah Catholic Secondary School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m ³ /min.)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
6-Nov-23	Fine	299.8	762.9	3.7156	3.8718	0.1562	11488.3	11512.3	24.0	1.22	1.23	1.23	1766.0	88.4
11-Nov-23	Fine	297.7	765.2	3.7000	3.8259	0.1259	11512.3	11536.3	24.0	1.22	1.23	1.22	1762.5	71.4
16-Nov-23	Rainy	293.2	768.8	3.6559	3.7902	0.1342	11539.3	11563.3	24.0	1.23	1.24	1.23	1777.7	75.5
22-Nov-23	Fine	295.8	763.3	3.3336	3.3713	0.0377	11563.3	11587.3	24.0	1.23	1.23	1.23	1765.3	21.4
28-Nov-23	Fine	295.8	765.0	3.3431	3.3621	0.0190	11587.3	11611.3	24.0	1.23	1.23	1.23	1767.2	10.7
													Min	10.7
													Max	88.4
													Average	53.5

24-hr TSP Concentration Levels



Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16043	CINOTECH
	Date Nov 23	Appendix F	

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

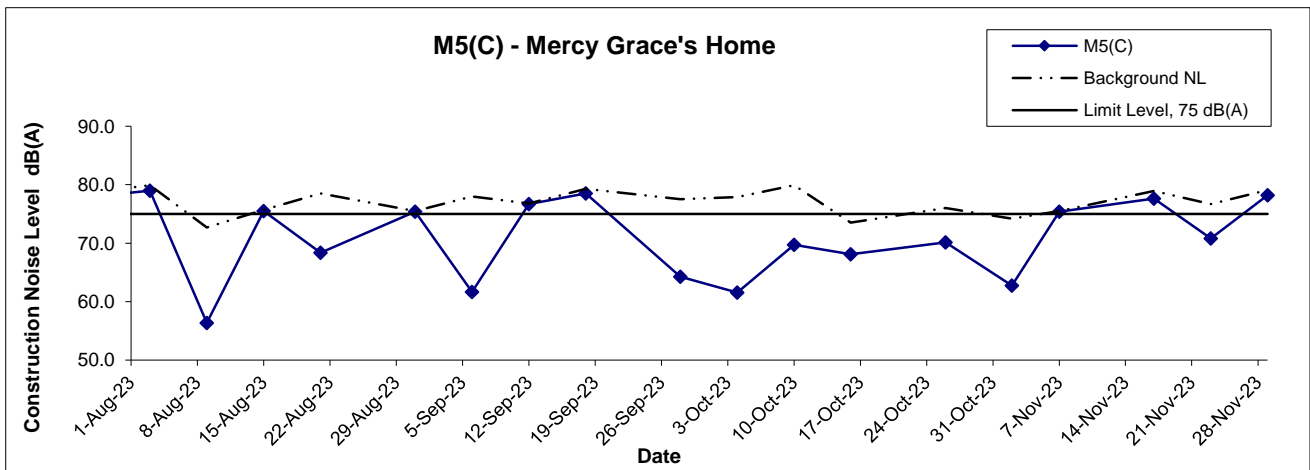
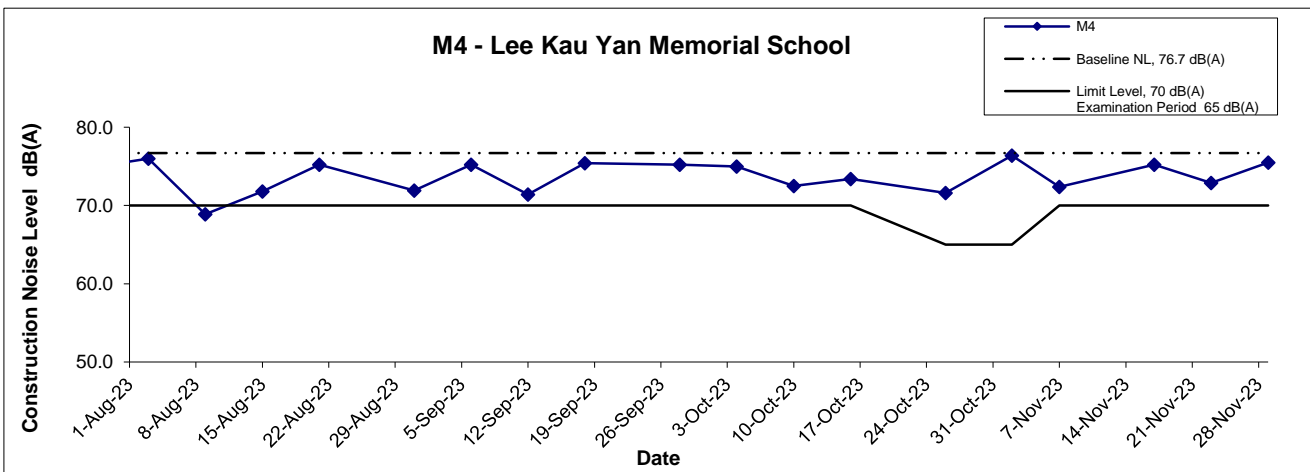
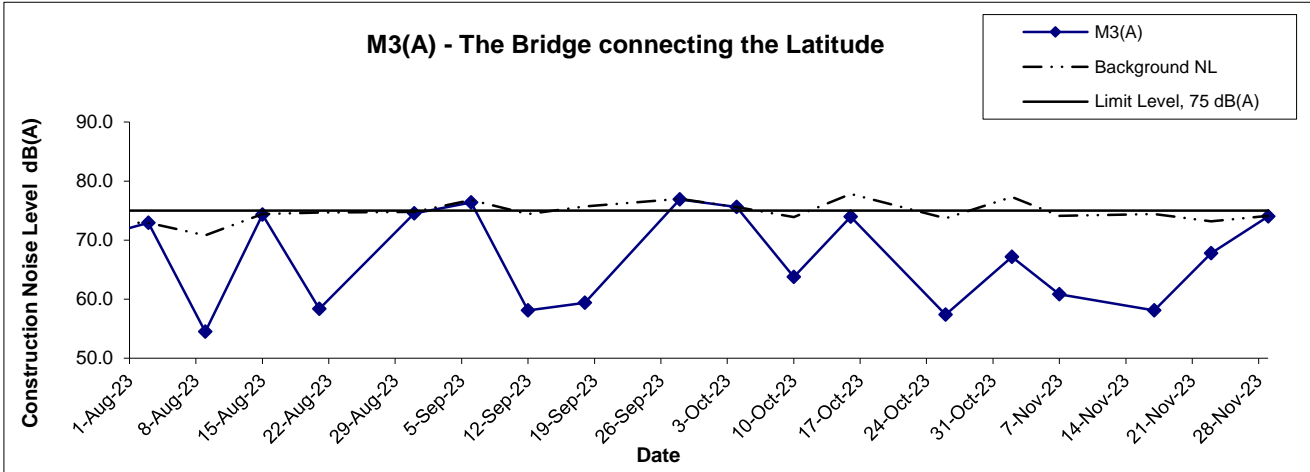
Appendix G - Noise Monitoring Results

Location M3(A) - The Bridge connecting The Latitude								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Background Noise	Construction Noise Level	
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	
1-Nov-23	11:30	Fine	77.7	79.7	74.9	77.3	67.1	
7-Nov-23	11:30	Sunny	74.3	76.8	71.5	74.1	60.8	
17-Nov-23	10:35	Fine	74.5	76.2	73.1	74.4	58.1	
23-Nov-23	11:30	Sunny	74.3	77.6	71.2	73.2	67.8	
29-Nov-23	11:30	Fine	74.0	76.2	71.4	74.1	74.0	Measured ≤ Background

Location M4 - Lee Kau Yan Memorial School								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Baseline Level	Construction Noise Level	
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	
1-Nov-23	9:30	Fine	76.4	77.7	74.5	76.7	76.4	Measured ≤ Baseline
7-Nov-23	9:00	Sunny	72.4	75.8	70.3		72.4	Measured ≤ Baseline
17-Nov-23	11:35	Fine	75.2	77.1	72.4		75.2	Measured ≤ Baseline
23-Nov-23	14:12	Sunny	72.9	74.6	69.7		72.9	Measured ≤ Baseline
29-Nov-23	13:34	Fine	75.5	78.3	72.2		75.5	Measured ≤ Baseline

Location M5(C) - Mercy Grace's Home								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Background Noise	Construction Noise Level	
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	
1-Nov-23	13:10	Fine	74.5	77.2	69.9	74.2	62.7	
7-Nov-23	13:00	Sunny	75.4	77.9	72.2	75.5	75.4	Measured ≤ Background
17-Nov-23	13:07	Fine	77.6	79.8	75.1	78.9	77.6	Measured ≤ Background
23-Nov-23	13:12	Sunny	77.7	79.8	72.5	76.7	70.8	
29-Nov-23	14:19	Fine	78.2	80.7	75.1	79.1	78.2	Measured ≤ Background

Noise Levels



Remarks: ^[1] The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA16043	CINOTECH
	Date	Nov 2023	Appendix	G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Appendix H – Summary of Exceedance

Exceedance Record for Contract No. KL/2015/02

Reporting Month: November 2023

(A) Exceedance Record for Air Quality
(NIL in the reporting month)

(B) Exceedance Record for Construction Noise
(NIL in the reporting month)

(C) Exceedance Record for Landscape and Visual
(NIL in the reporting month)

**APPENDIX I
SITE AUDIT SUMMARY**

Contract No. KLN/2016/04



Environmental Monitoring Works for Contract No. KL/2015/02

Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	231106
Date	06 November 2023 (Monday)
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Visual and Landscape</i>	
	• No environmental deficiency was identified during site inspection	
	<i>G. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Others</i>	
	No follow-up items are required from the previous site inspection (ref no.: 231030).	

	Name	Signature	Date
Recorded by	Serena Ng		06 November 2023
Checked by	Charles Fung		08 November 2023

Contract No. KLN/2016/04



Environmental Monitoring Works for Contract No. KL/2015/02

Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	231115
Date	15 November 2023 (Wednesday)
Time	09:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Visual and Landscape</i>	
	• No environmental deficiency was identified during site inspection	
	<i>G. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Others</i>	
	No follow-up items are required from the previous site inspection (ref no.: 231106).	

	Name	Signature	Date
Recorded by	KK Kwan		15 November 2023
Checked by	Charles Fung		16 November 2023

Contract No. KLN/2016/04



Environmental Monitoring Works for Contract No. KL/2015/02

Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	231120
Date	20 November 2023 (Monday)
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Visual and Landscape</i>	
	• No environmental deficiency was identified during site inspection	
	<i>G. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Others</i>	
	No follow-up items are required from the previous site inspection (ref no.: 231115).	

	Name	Signature	Date
Recorded by	Serena Ng		20 November 2023
Checked by	Charles Fung		22 November 2023

Contract No. KLN/2016/04



Environmental Monitoring Works for Contract No. KL/2015/02

Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area

**Weekly Site Inspection Record Summary
Inspection Information**

Checklist Reference Number	231127
Date	27 November 2023 (Monday)
Time	14:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Visual and Landscape</i>	
	• No environmental deficiency was identified during site inspection	
	<i>G. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Others</i>	
	No follow-up items are required from the previous site inspection (ref no.: 231120).	

	Name	Signature	Date
Recorded by	Serena Ng		27 November 2023
Checked by	Charles Fung		29 November 2023

APPENDIX J
EVENT ACTION PLANS

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues. 	<ol style="list-style-type: none"> 1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of Contractor's remedial actions and keep 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within three

Appendix J - Event Action Plans

	<p>EPD, IEC and ER informed of the results.</p>	<p>4. Advise the ER on the effectiveness of the proposed remedial measures.</p>	<p>implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.</p>	<p>working days of notification; 4. Implement the agreed proposals.</p>
<p>Limit Level being exceeded by two or more consecutive sampling</p>	<p>1. Notify IEC, ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results; 7. If exceedance stops, cease additional monitoring.</p>	<p>1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</p>	<p>1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise 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.</p>	<p>1. Take immediate action to avoid further exceedance; 2. Discuss with ET, ER and IEC on proper remedial actions; 3. Submit proposals for remedial actions to IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</p>

Appendix J - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 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. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 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. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 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. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 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; 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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;

Appendix J - Event Action Plans

	<p>5. Carry out analysis of Contractor's working procedures;</p> <p>6. Discuss with the IEC, Contractor and ER on remedial measures required;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>measures to be implemented;</p> <p>4. Supervise the implementation of remedial measures;</p> <p>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.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>4. Submit further proposal if problem still not under control;</p> <p>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
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Appendix J - Event Action Plans

Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary	1. Undertake remedial design if necessary	
Non-conformity on one occasion	1. Identify Source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	1. Notify Contractor 2. Ensure remedial measures are properly	1. Amend working methods 2. Rectify damage and

Appendix J - Event Action Plans

	<p>ER</p> <p>2. Increase monitoring frequency</p> <p>3. Discuss remedial actions with IEC, ER and Contractor</p> <p>4. Monitor remedial actions until rectification has been completed</p> <p>5. If non-conformity stops, cease additional monitoring</p>	<p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise ER on effectiveness of proposed remedial measures</p> <p>5. Supervise implementation of remedial measures.</p>	<p>implemented</p>	<p>undertake any necessary replacement</p>
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**APPENDIX K
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	Recommended Mitigation Measures	Implementation Status
<i>Construction Air Quality</i>		
S6.5	8 times daily watering of the work site with active dust emitting activities.	^
S6.8	<p>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 minimize cumulative dust impacts.</p> <ul style="list-style-type: none"> • Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. • Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards. • Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. • The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. • The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials. • Vehicle washing facilities should be provided at every vehicle exit point. • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. • Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A(1)</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

<p>S6.8</p>	<ul style="list-style-type: none"> • <u>DWFI compound for JVBC:</u> A DWFI compound is proposed at the downstream of JVC to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of JVBC and hence fully mitigate the potential odour emissions from the headspace of JVBC near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere. • <u>Desilting compound for KTN:</u> Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of KTN and hence fully mitigate the potential odour emissions from the headspace of KTN near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere. • <u>Decking or reconstruction of KTN within apron area:</u> It is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with nonodorous fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more than 16m. • <u>Localised maintenance dredging:</u> Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new development in the immediate vicinity of KTAC to avoid potential localized odour impacts at the future ASRs during the maintenance 	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
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Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

	<p>dredging operation.</p> <ul style="list-style-type: none"> • <u>Improvement of water circulation in KTAC and KTTS:</u> 600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased. • <u>In-situ sediment treatment by bioremediation:</u> Bioremediation would be applied to the entire KTAC and KTTS. 	N/A
Construction Noise		
S7.8	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S7.9	<p>Good Site Practice:</p> <ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	^ ^ ^ ^ ^
S7.9	Scheduling of Construction Works during School Examination Period	^
S7.8	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A
S7.8	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A

Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S7.8	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and (ii) Setback of building about 5m from site boundary.	N/A N/A
S7.8	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
S7.8	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and Avoid the sensitive façade of class room facing Road L2 and L4; and (ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A N/A
S7.8	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or (ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground	N/A N/A
S7.8	(i) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road	^
S7.8	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot	N/A N/A N/A N/A
S7.8	Installation of retractable roof or other equivalent measures	N/A
<i>Construction Water Quality</i>		
S8.8	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: <ul style="list-style-type: none"> Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities 	N/A N/A N/A N/A

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S8.8	<p>Construction Phase</p> <p><u>Marine-based Construction</u></p> <p><i>Capital and Maintenance Dredging for Cruise Terminal</i></p> <p>Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.</p>	N/A
S8.8	<p><i>Fireboat Berth, Runway Opening and Road T2</i></p> <p>Silt curtains should be deployed around the close grab dredger to minimize release of sediment and other contaminants for any dredging and filling activities in open water.</p>	N/A
S8.8	<p>Dredging at and near the seawall area for construction of the public landing steps cum fireboat berth should be carried out at a maximum production rate of 1,000m³ per day using one grab dredger.</p>	N/A
S8.8	<p>The proposed construction method for runway opening should adopt an approach where the existing seawall at the runway will not be removed until completion of all excavation and dredging works for demolition of the runway. Thus, excavation of bulk fill and majority of the dredging works will be carried out behind the existing seawall, and the sediment plume can be effectively contained within the works area. As there is likely some accumulation of sediments alongside the runway, there will be a need to dredge the existing seabed after completion of all the demolition works. Dredging alongside the 600m opening should be carried out at a maximum production rate of 2,000m³ per day using one grab dredger.</p>	N/A
8.8	<p>Dredging for Road T2 should be conducted at a maximum rate of 8,000m³ per day (using four grab dredgers) whereas the sand filling should be conducted at a maximum rate of 2,000m³ per day (using two grab dredgers).</p>	N/A
8.8	<p>Silt screens shall be applied to seawater intakes at WSD seawater intake.</p>	N/A

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S8.8	<p><u>Land-based Construction</u></p> <p><i>Construction Runoff</i></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> • use of sediment traps • adequate maintenance of drainage systems to prevent flooding and overflow 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S8.8	<p>Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty</p>	<p style="text-align: center;">^</p>

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	surface runoff during storm events.	
S8.8	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	N/A(1)
S8.8	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	^
S8.8	<i>Drainage</i> It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea	^
S8.8	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	^
S8.8	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
S8.8	<i>Sewage Effluent</i> Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	^

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S8.8	<i>Stormwater Discharges</i> Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	^
S8.8	<i>Debris and Litter</i> In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur	^
S8.8	<i>Construction Works at or in Close Proximity of Storm Culvert or Seafront</i> The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	^
S8.8	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.	^
S8.8	Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works	^
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	^
S8.8	Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.	^
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	^
S8.8	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	^
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	^
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	N/A
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	N/A
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	N/A

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S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
S8.8	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	N/A
<i>Construction Waste Management</i>		
S9.5	<p>Good Site Practices</p> <p>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during the dredging activities include:</p> <ul style="list-style-type: none"> • Nomination of an approved person, such as a site manager, 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 measure to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites). 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
S9.5	<p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> • Sort C&D waste from demolition of the remaining 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 should be recycled • Proper storage and site practices to minimise the potential for damage or contamination of construction materials 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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S9.5	<p>Dredged Marine Sediment</p> <p>The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the Director of Environmental Protection (DEP)</p>	N/A
S9.5	<p>The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 - Open Sea Disposal. Contaminated sediment would require either Type 1 – Open Sea Disposal (Dedicated Sites), Type 2 - Confined Marine Disposal, or Type 3 – Special Treatment / Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment and disposed properly at the designated disposal site</p>	N/A
S9.5	<p>It will be the responsibility of the contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works should apply for allocation of marine disposal sites and all necessary permits from relevant authorities for the disposal of dredged sediment. During transportation and disposal of the dredged marine sediments requiring Type 1, Type 2, or Type 3 disposal, the following measures should be taken to minimise potential impacts on water quality:</p> <ul style="list-style-type: none"> • Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic selfmonitoring devices as required under the Dumping at Sea Ordinance and as specified by the DEP • Barges or hopper barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation 	<p>N/A</p> <p>N/A</p> <p>N/A</p>
S9.5	<p>Construction and Demolition Material</p> <p>Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none"> • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the 	^

Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

	<p>transient stockpiles should be located away from waterfront or storm drains as far as possible</p> <ul style="list-style-type: none"> • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading <p>When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
S9.5/-	<p>Chemical Waste</p> <p>(i) After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p> <p>(ii) Maintenance of vehicles and equipment involving activities with potential of leakage and spillage should only be undertaken within the areas which are appropriately equipped to control these discharges.</p>	<p>^</p> <p>^</p>

Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S9.5	General Refuse	
	General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem	^
<i>Construction Landscape and Visual</i>		
S13.9	CM1 All existing trees should be carefully protected during construction.	^
	CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	^
	CM3 Control of night-time lighting.	N/A(1)
	CM4 Erection of decorative screen hoarding.	^

Remarks:

^	Compliance of mitigation measure
*	Recommendations were made during site audits but improved/rectified by the Contractor
#	Recommendations were made during site audits but has not yet been improved/rectified by the Contractor
•	Non-compliance but rectified by the Contractor
X	Non-compliance of mitigation measure
N/A	Not Applicable at this stage
N/A(1)	Not observed

**APPENDIX L
SUMMARIES OF ENVIRONMENTAL
COMPLAINT, WARNING, SUMMON
AND NOTIFICATION OF SUCCESSFUL
PROSECUTION**

Contract No. KLN/2016/04
Environmental Monitoring Works for Contract No. KL/2015/02
Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution

Complaint Log

EPD Complaint Ref No.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
17-34438	Dakota Drive and Olympic Avenue	23 October 2017	The complainant concerned about the dust emission when vehicle running on the dry surface outside Dakota Drive and Olympic Avenue. In addition, vehicles were not clear enough before leaving the construction site.	<p>In accordance with the information gathered in the investigation, construction activities were conducted with proper mitigation measures to minimize the dust impact arise from the construction site to the vicinity of this Project.</p> <p>Regular water spraying was provided to haul roads and unpaved areas within the site areas to reduce the dust impact arise from the construction site to the vicinity of this Project. The Contractor had also ensured vehicles and plants were wheel washed to be cleaned of mud and debris before leaving the construction site area. Therefore, the complaint is considered as non-project related.</p> <p>The following recommendations were made to further enhance the mitigation measures:</p> <ul style="list-style-type: none"> ● Where practicable, to provide sheltered area on the top and three sides for stockpiles of dusty materials, or perform frequent water spraying so as to maintain the entire surface wet; ● Frequent checking and repair the gaps or broken tarpaulin sheets; and ● To provide a hard-surfaced road between any cleaning facility and the public Road 	Closed

Remarks: No complaint was received in the reporting month.

Contract No. KLN/2016/04
Environmental Monitoring Works for Contract No. KL/2015/02
Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution

Warnings / Summons and Successful Prosecutions received

Log Ref.	Received Date	Details of Warning / Summons and Successful Prosecutions	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A

Remarks: No warning/summon and prosecution was received in the reporting month.

**APPENDIX M
SUMMARY OF WASTE GENERATION
AND DISPOSAL RECORDS**

Department: CEDD
 Contract No.: KL/2015/02
 Project : Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area



Peako - Wo Hing Joint Venture

Monthly Summary Waste Flow Table for 2023

As at 1 December 2023

Month	Quantities of Inert C & D Materials Generated Monthly						Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(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)
Jan	0.306	0	0	0	0.306	0	0	0	0	0	0.007
Feb	0	0	0	0	0	0	0	0	0	0	0
Mar	0.288	0	0	0	0.288	0	0	0	0	0	0.007
Apr	0.054	0	0	0	0.054	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0.007
June	0.027	0	0	0	0.027	0	0	0	0	0	0.007
Sub-total	69.31	0	0	0.406	68.904	0	0	0	0	0	2.905
July	0.162	0	0	0	0.162	0	0	0	0	0	0
Aug	0.027	0	0	0	0.027	0	0	0	0	0	0
Sept	0.198	0	0	0	0.198	0	0	0	0	0	0.007
Oct	0.423	0	0	0	0.423	0	0	0	0	0	0
Nov	0.027	0	0	0	0.027	0	0	0	0	0	0.007
Dec											
Total	70.147	0	0	0.406	69.741	0	0	0	0	0	2.919

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
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 (see Note 3)	Chemical Waste	Others, e.g. general refuse
(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)
72	0	0	1	69	0	0	0	0	0	3

- Notes:
- (1) The performance targets are given in PS clause 6(14).
 - (2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.
 - (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,00 m³. (PS Clause 25.02A(7) refers).

**APPENDIX N
CONSTRUCTION PROGRAMME**

**FUGRO TECHNICAL SERVICES
LIMITED**

19/F, Fugro House – KCC2,
1 Kwai On Road,
Kwai Chung, N.T.,
Hong Kong.

Tel : +852 2450 8238
Fax : +852 2450 8032
E-mail : mcl@fugro.com
Website : fugro.com



Appendix B

**Monthly EM&A Report
For**

Contract No. ED/2018/01

Kai Tak Development – Stage 4 infrastructure at the former runway and south apron

Environmental Monitoring and Audit Report
for
Contract No. ED/2018/01 –
Kai Tak Development – Stage 4 infrastructure at the
former runway and south apron

Contract No.: EDO 15/2018

November 2023

(Version 1.1)

Certified By: _____



(Environmental Team Leader)

Ref.: CEDKTDS4EM00_0_0324L.23

14 December 2023

AECOM Asia Company Limited
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong

By Post and Email

Attention: Ms. Fanny Lau

Dear Madam,

**Re: Contract No. ED/2018/01 – Kai Tak Development
Stage 4 Infrastructure at the Former Runway and South Apron**

Monthly EM&A Report for November 2023

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for November 2023 (Version 1.1) certified by the ET Leader and provided to us via email on 13 December 2023.

Please be advised that we have no further comment on the captioned Monthly EM&A Report in accordance with Condition 3.3 of EP-337/2009 and Condition 3.2 of EP-445/2013/B.

The ET Leader is reminded that it is the ET's responsibility to carry out the complaint investigation and ensure the report be timely submitted to the Director of Environmental Protection in accordance with the EM&A Manuals and Environmental Permits.

Thank you for your attention. Please do not hesitate to contact the undersigned should you have any queries.

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



Y H Hui
Independent Environmental Checker

c.c. CEDD
Ka Shing
Penta-Ocean

Attn.: Mr. Jason Wong
Attn.: Mr. Chan Pang
Attn.: Mr. Daniel Ho

Fax: 2739 0076
By Email
Fax: 2572 4080

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EXECUTIVE SUMMARY

This is the 47th Monthly Environmental Monitoring & Audit (EM&A) report which summaries the findings of the EM&A Programme during the reporting period from 1 to 30 November 2023.

Breaches of Action and Limit Levels

- 1) 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2) 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 3) Construction noise monitoring was conducted as scheduled in the reporting month. No Action Level and Limit Level exceedance was recorded in the reporting month.
- 4) Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

Table I Non-compliance Record in the Reporting Month

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Construction noise	0	0	N/A

Complaint log

- 5) No complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table II.

Table II Summary of complaints in the Reporting Month

Date of complaint received	Description of complaint	Investigation / Recommendations / Action taken	Close-out date / Status
NA	NA	NA	NA

Notifications of summons and successful prosecutions

- 6) No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table III.

Table III Summary of summons and successful prosecutions in the Reporting Month

Date of receiving notification of summons or prosecutions	Date of event	Description of event	Action take	Close-out date / Status
No notification of summons and successful prosecutions were received in the reporting month.	NA	NA	NA	NA

Report changes

- 7) There was no reporting change in the reporting month.

Key construction works in the reporting month

- 8) Major construction activities undertake during the reporting month included:
- Laying of stormwater drainage pipes/ sewer pipes/watermains and construction of associated manholes at Road L12d and at-grade road.
 - E&M works for Underpass 03
 - Construction of remaining works for Noise Barrier
 - Construction of RC structure for Lift LT-1 and LT-2
 - Construction of profile barrier for NDR
 - Modification works at Shing Kai Road

- Installation of Lift LT-4
- Laying of stormwater drainage pipes/ sewer pipes/ watermains
- Waterproofing works for ELD
- Construction of Seawater Intake Box Culvert
- Concreting and RC structure of Pumping Stations
- Construction of Observation Deck
- Construction of emergency walkway
- Construction of Harbour Steps
- Concreting and RC structure of Toilet cum Changing Room

Future key issues

9) The future key issues and potential impact in the coming month are given in Table IV.

Table IV Summary of future key issues and potential impact in the coming month

Future key issues in the coming month	Potential impact
Construction of manholes and chambers at Shing Kai Road and the at-grade road near NDR, SDR, South Depressed Road, Lift LT-4 and Noise Barrier;	Noise and Air Quality, Chemical and Waste Management
Watermain connection and pressure test for watermains at Shing Kai Road and at-grade road near NDR;	Noise, Air and Water Quality
Waterproofing work of ELD	Noise and Air Quality, Chemical and Waste Management
Construction of bus stop at at-grade road and noise barrier	Noise and Air Quality, Chemical and Waste Management
Installation of precast parapet for Bridge D3;	Noise and Air Quality, Chemical and Waste Management
Concreting and RC structure of Toilet cum Changing Room	Noise, Air and Water Quality
Install the lift cart for Lift LT-4;	Noise and Air Quality, Chemical and Waste Management
Concreting and RC structure of Pumping Stations	Noise and Air Quality, Chemical and Waste Management
Construction of Seawater Intake Box Culvert;	Noise and Air Quality, Chemical and Waste Management
Construction of RC structure for Lift LT-1 & LT-2;	Noise, Air and Water Quality
Construction of remaining works for Noise Barrier;	Noise, Air and Water Quality
Construction of Harbour Steps.	Noise, Air and Water Quality
Diversion/ connection works (involving confined space) of Box Culvert	Noise and Air Quality, Chemical and Waste Management
Construction of Outfall 1&2	Noise, Air and Water Quality
Rising main laying works	Noise, Air and Water Quality
Laying of stormwater drainage pipes/ sewer pipes / watermains and construction of associated manholes at Road L12d.	Noise, Air and Water Quality

Future key issues in the coming month	Potential impact
E&M works for Underpass D3	Noise and Air Quality, Chemical and Waste Management
Construction of Observation Deck	Noise, Air and Water Quality

1. INTRODUCTION

Project Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.2 Contract No. ED/2018/01 - Kai Tak Development – stage 4 infrastructure at the former runway and south apron (The Project), comprises mainly the design and construction of a dual two-lane Road D3 (Metro Park Section), a single 2-lane Road L12d, a salt water pumping station, a sewage pumping station, landscaped deck and promenade above and adjoining Road D3 (Metro Park Section) respectively, some remaining road works at Road L14, noise barrier at Road D3A, and other associated works at the former runway and south apron. The proposed works are shown in Figure 1 and Figure 2. During the course of the Contract No. ED/2018/01, there may be modification of noise barriers in association with the construction of footbridges connecting to the landscaped deck of Road D3A by developers of adjacent lands (Figure 3). The proposed works and site boundary are shown in Figure 4.
- 1.3 The new road connecting Shing Fung Road & Shing Kai Road has been open for public vehicles since 31 December 2022. Detailed location referring to Figure 5.
- 1.4 Civil Engineering and Development Department (CEDD) had completed an Environmental Impact Assessment (EIA) and is the Permit Holder.
- 1.5 The construction work under ED/2018/01 comprises the EM&A Manuals (EIA Register Nos. AEIAR-130/2009 for Kai Tak Development and EIA Register Nos. AEIAR-170/2013 for Roads D3A and D4A) and Environmental Permit (EP) Nos. EP-337/2009 and Variation to the EP (VEP) No. EP-445/2013/B.
- 1.6 Air quality and noise monitoring has been proposed in the EM&A Manual with EIA Register Nos. AEIAR-130/2009 for Kai Tak Development while no air quality and noise monitoring are proposed in EM&A Manual with EIA Register Nos. AEIAR-170/2013 for Roads D3A and D4A.

Project Organization

1.7 The project organization chart and with respect to the EM&A programme is shown in Appendix A. Information of key personnel contact names and telephone numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Role	Contact Person	Position	Phone No.	Fax No.
Civil Engineering and Development Department (CEDD)	Project Proponent	Mr. Jason Wong	Senior Engineer	3579 2453	2739 0076
		Ms. Chan Ka Yan	Engineer	3579 2458	2739 0076
AECOM Asia Co. Ltd. (AECOM)	Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual)	Ms. Fanny Lau	CRE	3911 4201	3911 4288
Ramboll Hong Kong Limited (Ramboll)	Independent Environmental Checker (IEC)	Mr. Y H Hui	IEC	3465 2850	3465 2899
Ka Shing Management Consultant Limited (Ka Shing)	Environmental Team (ET)	Mr. Chan Pang	ET Leader	6082 2973	2120 7752
Penta-Ocean Construction Co., Ltd. (Penta-Ocean)	Contractor	Mr. Tony Tang	Environmental Officer	9433 2628	3465 8898

Works Area and Construction Programme

1.8 The construction works commenced on 20 January 2020. The construction programme of the Project is given in Appendix B.

Construction works undertaken during reporting month

1.9 Major construction works of the Project in the reporting month are summarized in Table 1.2:

Table 1.2 Major activities of the Project during reporting month

Laying of stormwater drainage pipes/ sewer pipes/watermains and construction of associated manholes at Road L12d and at-grade road	E&M works for Underpass 03
Construction of remaining works for Noise Barrier	Construction of RC structure for Lift LT-1 and LT-2
Construction of Permanent railing for NDR	Modification works at Shing Kai Road
Installation of Lift LT-4	Laying of stormwater drainage pipes/ sewer pipes/ watermains
Waterproofing works for ELD	Construction of Seawater Intake Box Culvert;
Concreting and RC structure of Pumping Stations	Construction of Observation Deck
Construction of emergency walkway	Construction of Harbour Steps;
Concreting and RC structure of Toilet cum Changing Room	

Submission Status under the Environmental Permits

1.10 The status of required submission under Environmental Permit (EP) conditions under EP-337/2009 and Variation to the EP (VEP) No. EP-445/2013/B are summarized in Table 1.3.

Table 1.3 Summary of Status of Required Submission of EPs

EP Condition EP-337/2009	EP Condition EP-445/2013/B	Submission	Submission Date
Condition 1.11	Condition 1.12	Notification of Commencement Date of Construction of the Project	6 Jan 2020
Condition 2.3	Condition 2.3	Management Organization of Main Construction Companies	9 Sep 2019
Condition 2.3	Condition 2.3	Updated Management Organization of Main Construction Companies	17 Aug 2021
Condition 2.4	Condition 2.4	Design Drawings	6 Jan 2020
Condition 2.11	Condition 2.5	Landscape Mitigation Plans	13 Nov 2020
Condition 2.1	Condition 2.5	Landscape Mitigation Plans (Revision 2)	18 May 2021
NA	Condition 2.9	Detailed Design Plan of Traffic Noise Mitigation Measures	9 Dec 2022
Condition 3.2	NA	Baseline Monitoring Report	2 Jan 2020
Condition 3.2	NA	Revised Baseline Monitoring Report	28 Mar 2020

EP Condition EP-337/2009	EP Condition EP-445/2013/B	Submission	Submission Date
Condition 3.3	Condition 3.2	Monthly EM&A Report (October 2023)	17 Nov 2023

2. AIR QUALITY MONITORING

Monitoring Requirements

2.1 In accordance with EM&A Manuals (EIA Register Nos. AEIAR-130/2009), impact air quality monitoring shall be carried out during the construction phase of the Project. For regular impact monitoring, a sampling frequency of at least once in every six days will be strictly observed at all of the monitoring stations for 24-hour TSP. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days will be undertaken when the highest dust impact occurs.

Monitoring Locations

2.2 Three designated monitoring stations were selected for air quality monitoring programme. Impact air quality monitoring was conducted at three air quality monitoring stations in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in Figure 6.

Table 2.1 Locations of Air Quality Monitoring Stations

Air Quality Monitoring Locations for the Project	Location of Measurement
AM3 - Sky Tower	Podium floor near T7
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop	Ground
AM7 – Hong Kong Children's Hospital	Rooftop

2.3 Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A) while 1-hr TSP monitoring at AM4(A) were conducted on the ground floor with orienting to the Project site.

2.4 ET approached the potential sensitive receivers for monitoring station relocation since May 2022. ET conducted site visit in nearby area and found that there was no property management company in most of the nearby premises and could not approach the residents regarding the

environmental monitoring. No permission can be applied for environmental monitoring.

2.5 For those premises have property management company, ET sent the proposal to owner / property management company and explained the purpose of environmental monitoring (refer to Appendix C – Apply permission for Environmental Monitoring). Figure 7 shows the proposed alternative monitoring locations. No permission of setup and entry is received until the reporting month.

2.6 Summary of the status of for proposed alternative monitoring locations for AM4(A) are given in Table 2.2.

Table 2.2 Proposed alternative monitoring locations for AM4(A)

Proposed alternative monitoring locations for M11	Status upto reporting month
A1 - The Lok Sin Tong Modular Social Housing Scheme	Rejected application on 13 Oct 2022
A2 - Freder Centre	No reply from building management office
A3 - New Port Centre	No reply from building management office
A4 - 112 - 138 To Kwa Wan Road	No property management company and could not apply the permission.
A5 - 2 - 26 Hok Ling Street	No property management company and could not apply the permission.
A6 - 1 - 27 Hok Ling Street	No property management company and could not apply the permission.
A7 - 2 - 28 Tsun Fat Street	No property management company and could not apply the permission.
A8 - 1 - 27 Tsun Fat Street	No property management company and could not apply the permission.
A9 - 2 - 28 Yin On Street	No property management company and could not apply the permission.
A10 - 1 - 27 Yin On Street	No property management company and could not apply the permission.
A11 - 2 - 28 Shim Luen Street	No property management company and could not apply the permission.
A12 - 1 - 27 Shim Luen Street	No property management company and could not apply the permission.
A13 - 2 - 28 Hung Wan Street	No property management company and could not apply the permission.
A14 - 1 - 27 Hung Wan Street	No property management company and could not apply the permission.
A15 - 2 - 28 Pang Ching Street	No property management company and could not apply the permission.
A16 - 1 - 27 Pang Ching Street	No property management company and could not apply the permission.
A17 - 2 - 28 Ying Yeung Street	No property management company and could not apply the permission.
A18 - 1 - 27 Ying Yeung Street	No property management company and could not apply the permission.

Proposed alternative monitoring locations for M11	Status upto reporting month
	not apply the permission.
A19 - 2 - 28 Lun Cheung Street	No property management company and could not apply the permission.
A20 - 1 - 27 Lun Cheung Street	No property management company and could not apply the permission.
A21 - 2 - 28 Luk Ming Street	No property management company and could not apply the permission.
A22 - 1 - 27 Luk Ming Street	No property management company and could not apply the permission.
A23 - 2 - 28 Fung Yi Street	No property management company and could not apply the permission.

2.7 No update for the approval of monitoring relocation in the reporting month and ET will resume the impact monitoring once the alternative monitoring location for AM4(A) are confirmed.

Monitoring Parameters, Frequency and Duration

2.8 The air quality monitoring locations and monitoring frequency are listed in Table 2.3.

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

Air Monitoring Station	Location for Measurement	Parameter	Duration	Frequency
AM3 - Sky Tower	Podium floor near T7			
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop	Ground	- 24-hour average TSP	- 24 hours	- Once every 6 days
AM7 - Hong Kong Children's Hospital	Rooftop	- 1-hour average TSP	- 1 hour	- Three times every 6 days

2.9 The monitoring schedule for reporting month and next month is presented in Appendix D

2.10 Photographic records of the impact monitoring setup are shown in Appendix E.

Monitoring Equipment

2.11 24-hour average TSP and 1-hour average TSP levels were measured for impact monitoring.

24-hour average TSP levels were measured by the High Volume Samplers (HVS) and 1-hour average TSP levels were measured by direct reading method to indicate short-term impacts. Wind data monitoring equipment was set up at conspicuous locations for logging wind speed and wind direction near to the dust monitoring locations. Table 2.4 summarizes the equipment to be used in the air quality monitoring.

Table 2.4 Air Quality Monitoring Equipment

Equipment	Model	Quantity
HVS Sampler	TE-5170 X c/w of TSP sampling inlet	2
Calibrator	TISCH TE-5025A	1
1-hour TSP Dust Meter	TSI Model AM510 SidePak Personal Aerosol Monitor	2
Wind Anemometer	Davis Vantage Pro2 Weather Station	1

2.12 High volume samplers (HVS) (TE-5170 X c/w of TSP sampling inlet) comprising with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

2.13 Calibration certificates, catalogue of equipment are given in Appendix F.

Monitoring Methodology and QA/QC Procedure

24-hour TSP Monitoring

Operating/Analytical Procedures

2.14 Setup criteria of HVS are shown as follows:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- No two samplers were placed less than 2m apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2m of separation from walls, parapets and penthouses was set for the rooftop samples.
- A minimum of 2m separation from any supporting structure, measured horizontally was set.

- No furnaces or incineration flues was nearby.
- Airflow around the sampler was unrestricted.
- Any wire fence and gate, to protect the samplers, was not caused any obstruction during monitoring.
- Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity was provided to operate the samplers.

2.15 Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m³/min. and 1.7 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.16 For TSP sampling, Glass Fiber Filter Media 8" x 10" have a collection efficiency of > 99 % for particles of 0.3 µm diameter were used.

2.17 The power supply was checked to ensure the sampler worked properly and then placed any filter media at the designated air monitoring station.

2.18 The filter holding frame was removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

2.19 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure was sufficient to avoid air leakage at the edges.

2.20 The shelter lid was closed and secured with the aluminium strip.

2.21 The timer was programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

2.22 After sampling, the filter was removed from the HVS and put into a clean and labeled seal plastic bag to avoid cross contamination. The elapsed time was also be recorded. The sampled filters were sent to the HOKLAS accredited or other internationally accredited laboratory for weighting.

Maintenance/Calibration

2.23 The following maintenance/calibration are required for the HVS:

- The HVS and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated with at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

1-hour TSP Monitoring

Measurement Procedures

2.24 The measurement procedures of the 1-hour TSP were conducted in accordance with the Manufacturer's Instruction Manual as follows:

- Set up the dust meter on a tripod at 1.2m level.
- Turned on the dust meter and check the battery, if too low, change new ones. Pointed the meter to the source area or the planned measurement area.
- The zero calibration of the instrument was conducted before and after each sampling.
- TSP levels were recorded for 1-hour with 5-minute data logging interval.
- Recorded down the general meteorological conditions, Test ID no., start/end time, spot check reading at each sampling location for data processing.
- Recorded any activities that may generate dust during measurement period.

Maintenance/Calibration

2.25 The following maintenance/calibration are required for the direct dust meters:

- To validity the accuracy of dust meter, compare the results measured by dust meter and HVS by direct reading method every 12 months throughout all stages of the air quality monitoring.

Wind Data Monitoring

2.26 Wind Anemometer was installed at the roof-top of AM7 - Hong Kong Children's Hospital with 10m above ground and clear of constructions or turbulence caused by the buildings.

2.27 The wind data was captured by a data logger and the data was downloaded at least once per month for analysis.

2.28 The wind data monitoring equipment will be re-calibrated at least once every six months.

2.29 Wind direction is divided into 16 sectors of 22.5 degrees each.

2.30 Details of weather information during the monitoring period are shown in Appendix G.

Action and Limit Levels

2.31 The Action and Limit Levels of 24-hour average TSP and 1-hour average TSP are summarized in Table 2.5 and Table 2.6 respectively.

Table 2.5 Action and Limit Levels of 24-hour average TSP for Construction Dust Monitoring

Parameter	Air Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
24-hour average TSP	AM3	182	260
	AM4(A)	187	260
	AM7	181	260

Table 2.6 Action and Limit Levels of 1-hour average TSP for Construction Dust Monitoring

Parameter	Air Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
1-hour average TSP	AM3	297	500
	AM4(A)	326	500
	AM7	315	500

Impact Air Quality Monitoring results

2.32 Impact monitoring results for 24-hour average TSP and 1-hour average TSP levels at the designed air quality monitoring stations are summarized in Table 2.7 and Table 2.8 respectively.

2.33 Due to the relocation of The Hong Kong Society for the Blind’s Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A) while 1-hr TSP monitoring at AM4(A) were conducted on the ground floor with orienting to the Project site. ET will resume

the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

Table 2.7 Summary of 24-hour average TSP Monitoring Data during the reporting month

Air Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM3	54	45 – 71	182	260
AM4(A)	/	/ – /	187	260
AM7	65	55 – 74	181	260

Table 2.8 Summary of 1-hour average TSP Monitoring Data during the reporting month

Air Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM3	54	39 – 73	297	500
AM4(A)	69	53 – 81	326	500
AM7	62	56 – 72	315	500

2.34 There was no Action and Limit Level exceedance of 24-hour average TSP and 1-hour average TSP levels recorded during the reporting month.

2.35 Graphical presentation and detailed monitoring results of 24-hour average TSP and 1-hour average TSP levels are shown in Appendix H and Appendix I respectively.

2.36 The Event and Action Plan is provided in Appendix J.

2.37 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

3. NOISE MONITORING

Monitoring Requirements

- 3.1 In accordance with EM&A Manuals (EIA Register Nos. AEIAR-130/2009), impact noise monitoring shall be carried out during the construction phase of the Project.
- 3.2 Regular monitoring, $L_{Aeq, 30\text{-minute}}$, for each station will be on a weekly basis and conduct one set of measurements between 0700 – 1900 on normal weekdays.
- 3.3 If construction works are extended to include works during 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring will be carried out during the respective restricted hours periods.

Monitoring Locations

- 3.4 Two designated monitoring stations were selected for noise monitoring programme. Impact noise monitoring was conducted at two noise monitoring stations in the reporting month. Table 3.1 describes the noise monitoring locations, which are also depicted in Figure 8.

Table 3.1 Locations of Noise Monitoring Stations

Noise Monitoring Locations for the Project	Location of Measurement
M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop	Ground (Façade)
M12 - Hong Kong Children's Hospital	Rooftop (Façade)

- 3.5 Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022.
- 3.6 ET approached the potential sensitive receivers for monitoring station relocation since May 2022. ET conducted site visit in nearby area and found that there was no property management company in most of the nearby premises and could not approach the residents regarding the environmental monitoring. No permission can be applied for environmental monitoring.

3.7 For those premises have property management company, ET sent the proposal to owner / property management company and explained the purpose of environmental monitoring (refer to Appendix C – Apply permission for Environmental Monitoring). Figure 9 shows the proposed alternative monitoring locations. No permission of setup and entry is received until the reporting month.

3.8 Summary of the status of for proposed alternative monitoring locations for M11 are given in Table 3.2.

Table 3.2 Proposed alternative monitoring locations for M11

Proposed alternative monitoring locations for M11	Status upto reporting month
A1 - The Lok Sin Tong Modular Social Housing Scheme	Rejected application on 13 Oct 2022
A2 - Freder Centre	No reply from building management office
A3 - New Port Centre	No reply from building management office
A4 - 112 - 138 To Kwa Wan Road	No property management company and could not apply the permission.
A5 - 2 - 26 Hok Ling Street	No property management company and could not apply the permission.
A6 - 1 - 27 Hok Ling Street	No property management company and could not apply the permission.
A7 - 2 - 28 Tsun Fat Street	No property management company and could not apply the permission.
A8 - 1 - 27 Tsun Fat Street	No property management company and could not apply the permission.
A9 – 2 - 28 Yin On Street	No property management company and could not apply the permission.
A10 – 1 – 27 Yin On Street	No property management company and could not apply the permission.
A11 – 2 – 28 Shim Luen Street	No property management company and could not apply the permission.
A12 - 1 - 27 Shim Luen Street	No property management company and could not apply the permission.
A13 - 2 - 28 Hung Wan Street	No property management company and could not apply the permission.
A14 - 1 - 27 Hung Wan Street	No property management company and could not apply the permission.
A15 - 2 - 28 Pang Ching Street	No property management company and could not apply the permission.
A16 - 1 - 27 Pang Ching Street	No property management company and could not apply the permission.
A17 - 2 - 28 Ying Yeung Street	No property management company and could not apply the permission.
A18 - 1 - 27 Ying Yeung Street	No property management company and could not apply the permission.
A19 - 2 - 28 Lun Cheung Street	No property management company and could

Proposed alternative monitoring locations for M11	Status upto reporting month
	not apply the permission.
A20 - 1 - 27 Lun Cheung Street	No property management company and could not apply the permission.
A21 - 2 - 28 Luk Ming Street	No property management company and could not apply the permission.
A22 - 1 - 27 Luk Ming Street	No property management company and could not apply the permission.
A23 - 2 - 28 Fung Yi Street	No property management company and could not apply the permission.

3.9 No update for the approval of monitoring relocation in the reporting month and ET will resume the impact monitoring once the alternative monitoring location for M11 are confirmed.

Monitoring Parameters, Frequency and Duration

3.10 The noise monitoring locations and monitoring frequency are listed in Table 3.3.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Noise Monitoring Station	Location for Measurement	Parameter	Frequency and Duration
M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	Ground (Façade)	L_{Aeq} , L_{A10} and L_{A90}	30 - minutes measurement at each monitoring station between 0700 – 1900 hrs on normal weekdays (Monday to Saturday) at frequency of once per week.
M12 - Hong Kong Children's Hospital	Rooftop (Façade)		

* Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022.

3.11 The monitoring schedule for reporting month and next month is presented in Appendix D.

3.12 Photographic records of the monitoring setup are shown in Appendix E.

Monitoring Equipment

3.13 As referred to in the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the IEC 61672-1 (Type 1) standard [this

standard replaced the International Electrotechnical Commission Publications 60651:1979 (Type 1) and 60804:1985 (Type 1)] were used for noise monitoring. Table 3.4 summarizes the equipment to be used in the noise monitoring.

Table 3.4 Noise Monitoring Equipment

Equipment	Model	Quantity
Sound Level Meter	RION NL52	2
Sound Level Calibrator	RION NC 74	2
Air Flowmeter	TSI TA440 Air Velocity	2

3.14 Calibration certificates, catalogue of equipment are given in Appendix K.

Monitoring Methodology and QA/QC Procedure

3.15 The noise level measurement was conducted at 1m from the exterior of the nearby noise sensitive receivers building façade and at 1.2m above the ground and facing to the source area or the planned measurement area.

3.16 No noise measurement was conducted in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. Air flow was measured by air flow meter.

3.17 Turned on the sound level meter and check the battery, if too low, change new ones.

3.18 Calibration was conducted immediately prior to and after each noise measurement, the accuracy of the sound level meters was checked by using sound calibrator generating 1,000 Hz with 94dB. Measurement data was found to be valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.

3.19 Noise level was recorded.

3.20 Recorded any activities that may generate noise during measurement period.

Maintenance and Calibration

3.21 The microphone head of the sound level meter and calibrator was cleaned with a soft cloth at

quarterly intervals.

3.22 The sound level meter and sound calibrator were calibrated annually.

3.23 Calibration for sound level meter was conducted immediately prior to and following each noise measurement by using sound calibrator generating a known sound pressure level at a known frequency (1,000 Hz with 94dB). Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Action and Limit Levels

3.24 The Baseline Noise Levels and Action and Limit Levels for construction noise is presented in Table 3.5.

Table 3.5 Baseline Noise Level and Action and Limit Levels for Construction Noise Monitoring

Time Period	Noise Monitoring Station	Baseline Noise Levels, dB (A)	Action Level	Limit Level [^]
0700 – 1900 on normal weekdays	M11	68.3	When one documented complaint is received.	75 dB(A)
	M12	61.9		

Note: ^ If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

Impact Noise Monitoring results

3.25 Impact noise monitoring results at the designed noise monitoring stations are summarized in Table 3.6 respectively.

3.26 Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 30-min noise monitoring at M11 were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for M11 is confirmed.

Table 3.6 Summary of Noise Monitoring Data during the reporting month

Noise Monitoring Station	Measured $L_{Aeq, 30\text{-min}}$, Average, dB(A)	Measured $L_{Aeq, 30\text{-min}}$, Range, dB(A)	Action Level	Limit Level [^]
M11	73.4	72.9 – 74.1	When one documented complaint is received	75 dB(A)
M12	64.1	62.1 – 65.6		

Note: [^] If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

3.27 There were no Action Level exceedance of noise monitoring and Limit Level exceedance of $L_{Aeq, 30\text{min}}$ recorded during the reporting month.

3.28 Graphical presentation and detailed monitoring results are shown in Appendix L.

3.29 The Event and Action Plan is provided in Appendix J.

3.30 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The environmental impacts predictions were given in Agreement No. CE 35/2006(CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction - Kai Tak Development Environmental Impact Assessment Report, EIA Register Nos. AEIAR-130/2009 for Kai Tak Development (The EIA Report). The EM&A data was compared with the EIA predictions as summarized in Table 4.1 to Table 4.3.

Table 4.1 Comparison of 24-hour average TSP Monitoring Data with EIA predictions

Air Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 24-hour average TSP concentration		Measured 24-hr average TSP in Reporting Month (November 2023) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM3 - Sky Tower	A40 [^]	106	138	45 – 71
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	A43 [^]	123	195	/ – /
AM7 – Hong Kong Children's Hospital	PA60	NA	NA	55 – 74

Note:

[^] Prediction results are given in the Table 3.13 of the EIA report EIA Register Nos. AEIAR-130/2009 for Kai Tak Development.

* Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A) because of the assess limitation in the reporting month.

Table 4.2 Comparison of 1-hour average TSP Monitoring Data with EIA predictions

Air Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 1-hour average TSP concentration		Measured 1-hr average TSP in Reporting Month (November 2023) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM3 - Sky Tower	A40	217 [^]	247 [^]	39 – 73
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	A43	283 [^]	409 [^]	53 – 81
AM7 – Hong Kong Children's Hospital	PA60	NA	NA	56 – 72

Note:

^ Prediction results are given in the Table 3.13 of the EIA report EIA Register Nos. AEIAR-130/2009 for Kai Tak Development.

* Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hour TSP monitoring was conducted on the ground floor outside AM4(A) with facing to the Project Site because of the access limitation in the reporting month.

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Noise Monitoring Station	NSR No. in EIA report	Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour L _{Aeq, 30min} , dB(A)	Measured Noise Level in Reporting Month (November 2023) L _{Aeq, 30min} , dB(A)
M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	N18	50 – 76*	72.9 – 74.1
M12 - Hong Kong Children's Hospital	PN83, PN84, PN84A	NA	62.1 – 65.6

Note:

* Prediction results are given in the Table 3.20 of the EIA report EIA Register Nos. AEIAR-130/2009 for Kai Tak Development.

*Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. Construction noise monitoring was conducted on the ground floor outside M11 with facing to the Project Site because of the access limitation in the reporting month.

4.2 24-hour TSP monitoring results at AM3 were recorded lower than the prediction in the EIA Report. Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A) because of the assess limitation in the reporting month. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

4.3 No prediction in the EIA Report for 24-hour TSP monitoring results at AM7.

4.4 1-hour TSP monitoring results at AM3 and AM4(A) were recorded lower than the prediction in the EIA Report. Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hour TSP monitoring was conducted on the ground floor outside AM4(A) with facing to the Project Site because of the access limitation in the reporting month. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

4.5 No prediction in the EIA Report for 1-hour TSP monitoring results at AM7.

4.6 Noise monitoring results at M11 were recorded lower than the prediction in the EIA Report. Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered

Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. Construction noise monitoring was conducted on the ground floor outside M11 with facing to the Project Site because of the access limitation in the reporting month. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

4.7 No prediction in the EIA Report for noise monitoring results at M12.

5. LANDSCAPE AND VISUAL MONITORING

5.1 In accordance with EM&A Manuals (EIA Register Nos. AEIAR-130/2009 and AEIAR-170/2013), Landscape and Visual Monitoring shall be carried out during the construction phase of the Project. Regular impact monitoring will be conducted at least once per week.

Results and Observations

5.2 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

5.3 Site inspections were conducted on 2, 7, 16, 23 and 30 November 2023 in the reporting month.

5.4 The summaries of site audits are attached in Table 5.1.

Table 5.1 Summary of observations of Landscape and Visual impact during the reporting month

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
02 November 2023	No	NA	NA
07 November 2023	No	NA	NA
16 November 2023	No	NA	NA
23 November 2023	No	NA	NA
30 November 2023	No	NA	NA

5.5 No non-compliance of the landscape and visual impact was recorded in the reporting month.

5.6 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in Appendix N shall be performed.

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT



Site Inspection





6.1 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

6.2 Site inspections were conducted on 2, 7, 16, 23 and 30 November 2023 in the reporting month.

6.3 The summaries of site audits are attached in Table 6.1.

Table 6.1 Summary of site inspections observations during the reporting month

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
02 November 2023	No	NA	NA
07 November 2023	No	NA	NA
16 November 2023	 <p>Observation: The NRMM label should be displayed on PMEs.</p>	 <p>Action Taken: The NRMM label is properly demonstrated.</p>	Closed-out on 23 November 2023
23 November 2023	 <p>Observation: The accumulating waste should</p>	 <p>Action Taken:</p>	Closed-out on 30 November 2023

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
	<p>be cleared at pumping stations.</p>  <p>Observation: The chemicals should be stored in the drip tray at pumping station.</p>	<p>The accumulating waste was cleared at pumping stations.</p>  <p>Action Taken: The chemicals have been removed.</p>	<p>Closed-out on 30 November 2023</p>
<p>30 November 2023</p>	 <p>Observation: The accumulating waste should be cleared at toilet cum.</p>	 <p>Action Taken: The accumulating waste have been removed at toilet cum.</p>	<p>Closed-out on 07 December 2023</p>

Status of Waste Management

6.4 The amount of wastes generated by the major site activities of the work contracts within the Project during the reporting month is shown in Appendix O.

6.5 The Contractor was registered as a chemical waste producer for the Project. The Contractor was 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.

Status of Environmental Licenses, Notification and Permits

6.6 A summary of the relevant permits, licenses and/or notifications on environmental protection for the Project is shown in Table 6.2.

Table 6.2 Summary of Environmental Licenses, Notifications and Permits

Environmental Licenses, Notifications and Permits	Ref. No.	Valid Form	Valid Till
Environmental Permit under EIAO	EP-337/2009	23 Apr 2009	N/A
	EP-445/2013/B	3 May 2022	N/A
Construction Dust Notification under APCO	445956	6 June 2019	N/A
Wastewater Discharge License under WPCO	WT00034610-2019	26 Sep 2019	30 Sep 2024
Waste Disposal Billing Account	7034450	28 June 2019	N/A
Registration as a Chemical Waste Producer	5218-286-P3182-03	18 Jul 2019	N/A
Construction Noise Permit	GW-RE0560-23	02 Jun 2023	14 Nov 2023
	GW-RE0724-23	14 Jul 2023	13 Nov 2023
	GW-RE0877-23	14 Aug 2023	13 Feb 2024
	GW-RE0983-23	01 Sep 2023	30 Nov 2023
	GW-RE1013-23	01 Sep 2023	30 Nov 2023
	GW-RE1072-23	07 Sep 2023	06 Jan 2024
	GW-RE1252-23	19 Oct 2023	15 Apr 2024
	GW-RE1296-23	02 Nov 2023	01 Mar 2024
	GW-RE1364-23	14 Nov 2023	13 May 2024
	GW-RE1368-23	15 Nov 2023	14 May 2024

Implementation Status of Environmental Mitigation Measures

6.7 The Contractor has implemented environmental mitigation measures and requires as stated in the EIA reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month is summarized in Appendix P.

6.8 In response to the site audit findings, the Contractor carried out corrective actions with summary given in Appendix P.

Environmental Complaint and Non-compliance

6.9 No complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table 6.3.

Table 6.3 Summary of complaints in the Reporting Month

Date of complaint received	Description of complaint	Investigation / Recommendations / Action taken	Close-out date / Status
NA	NA	NA	NA

6.10 Complaint log and Complaint Investigation report are shown in Appendix Q.

Notifications of summons and successful prosecutions

6.11 No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table 6.4.

Table 6.4 Summary of summons and successful prosecutions in the Reporting Month

Date of receiving notification of summons or prosecutions	Date of event	Description of event	Action taken	Close-out date / Status
No notification of summons and successful prosecutions were received in the reporting month.	NA	NA	NA	NA

6.12 The summaries of cumulative environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in Appendix Q.

7. FUTURE KEY ISSUES

Construction Programme in the coming month

7.1 The major construction activities and potential impacts in the next reporting month as follow:

Table 7.1 Summary of future key issues and potential impact in the coming month

Future key issues in the coming month	Potential impact
Construction of manholes and chambers at Shing Kai Road and the at-grade road near NDR, SDR, Lift LT-4 and Noise Barrier	Noise and Air Quality, Chemical and Waste Management
Watermain connection and pressure test for watermains at Shing Kai Road and at-grade road near NDR	Noise and Air Quality, Landscape and Visual
Waterproofing work of ELD	Noise and Air Quality, Chemical and Waste Management
Construction of bus stop at at-grade road and noise barrier	Noise and Air Quality, Chemical and Waste Management
Installation of precast parapet for Bridge D3	Noise and Air Quality, Chemical and Waste Management
Concreting and RC structure of Toilet cum Changing Room	Noise, Air and Water Quality
Install the lift cart for Lift LT-4	Noise and Air Quality, Chemical and Waste Management
Concreting and RC structure of Pumping Stations	Noise and Air Quality, Chemical and Waste Management
Construction of Seawater Intake Box Culvert;	Noise and Air Quality, Chemical and Waste Management
Construction of RC structure for Lift LT-1 & LT-2	Noise, Air and Water Quality
Construction of remaining works for Noise Barrier	Noise, Air and Water Quality
Construction of Harbour Steps	Noise, Air and Water Quality
Diversion/ connection works (involving confined space) of Box Culvert	Noise, Air and Water Quality
Construction of Outfall 1&2	Noise, Air and Water Quality
Rising main laying works	Noise, Air and Water Quality
Laying of stormwater drainage pipes/ sewer pipes / watermains and construction of associated manholes at Road L12d	Noise, Air and Water Quality
E&M works for Underpass D3	Noise and Air Quality, Chemical and Waste Management
Construction of Observation Deck	Noise, Air and Water Quality

7.2 The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:

- Sufficient watering of the works site with the active dust emitting activities,

- Limitation of the speed for vehicles on unpaved site roads,
- Properly cover the stockpiles,
- Good maintenance to the plant and equipment,
- Use of quieter plant and Quality Powered Mechanical Equipment (QPME),
- Provide movable noise barriers,
- Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,
- Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,
- Onsite waste sorting and implementation of trip ticket system,
- Good management and control on construction waste reduction,
- Erection of decorative screen hoarding,
- Strictly following the Environmental Permits and Licenses, and
- Provide sufficient mitigation measures as recommended in Approved EIA Reports.

Environmental Site Inspection and Monitoring Schedule for next month

7.3 The tentative schedule for weekly site inspection and air quality and noise monitoring in the next month is provided in Appendix D.

8. CONCLUSIONS

- 8.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 8.2 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hour TSP monitoring was conducted on the ground floor outside AM4(A) with facing to the Project Site because of the access limitation in the reporting month.
- 8.3 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-hour TSP monitoring was conducted at AM4(A) because of the assess limitation in the reporting month.
- 8.4 Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. Impact monitoring was conducted on the ground floor outside M11 with facing to the Project Site because of the access limitation in the reporting month.
- 8.5 No complaint was received in the reporting month.
- 8.6 No notification of summons and successful prosecutions was received in the reporting month.

Figure

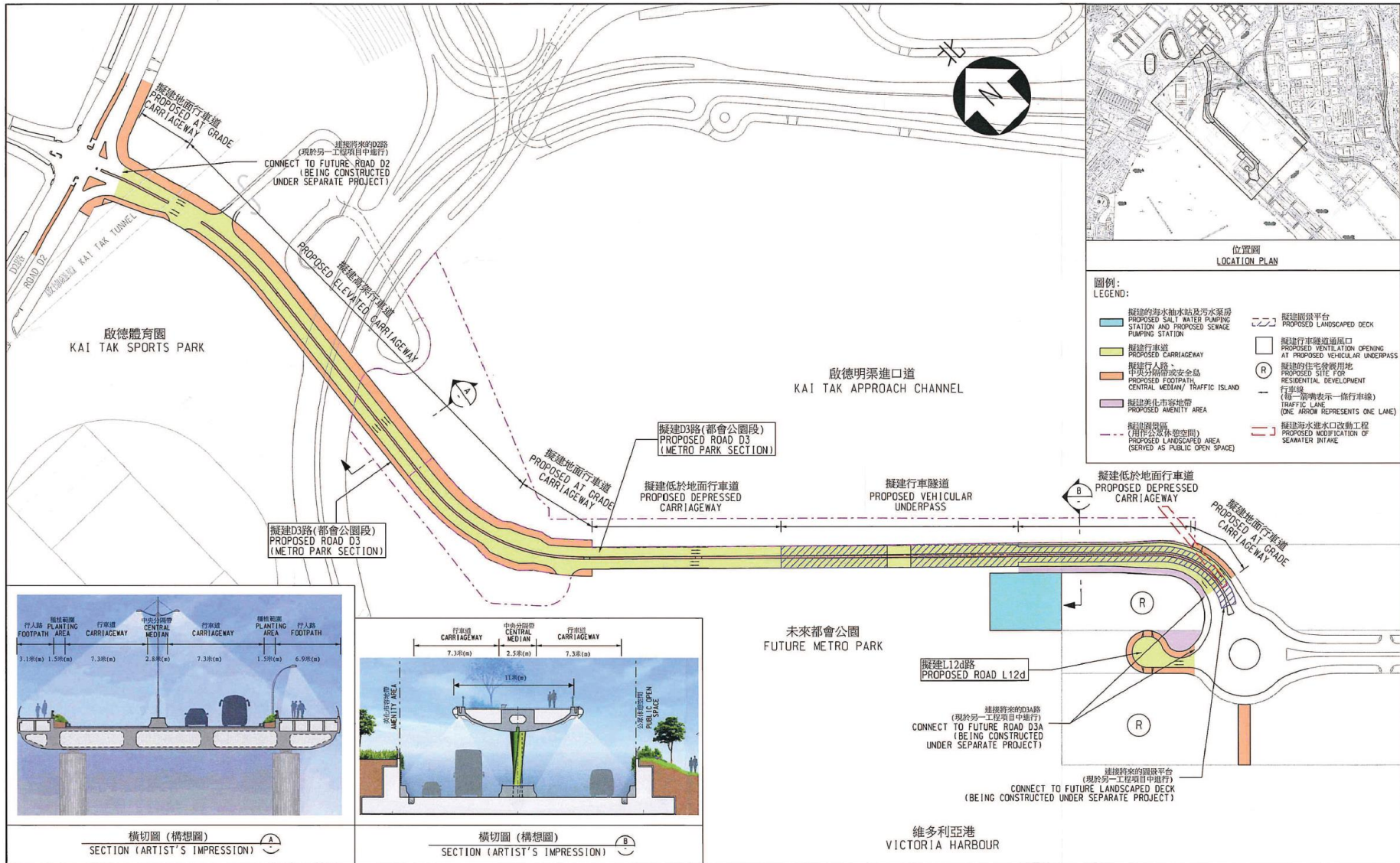


Figure 1 – Proposed works of Contract No. ED/2018/01

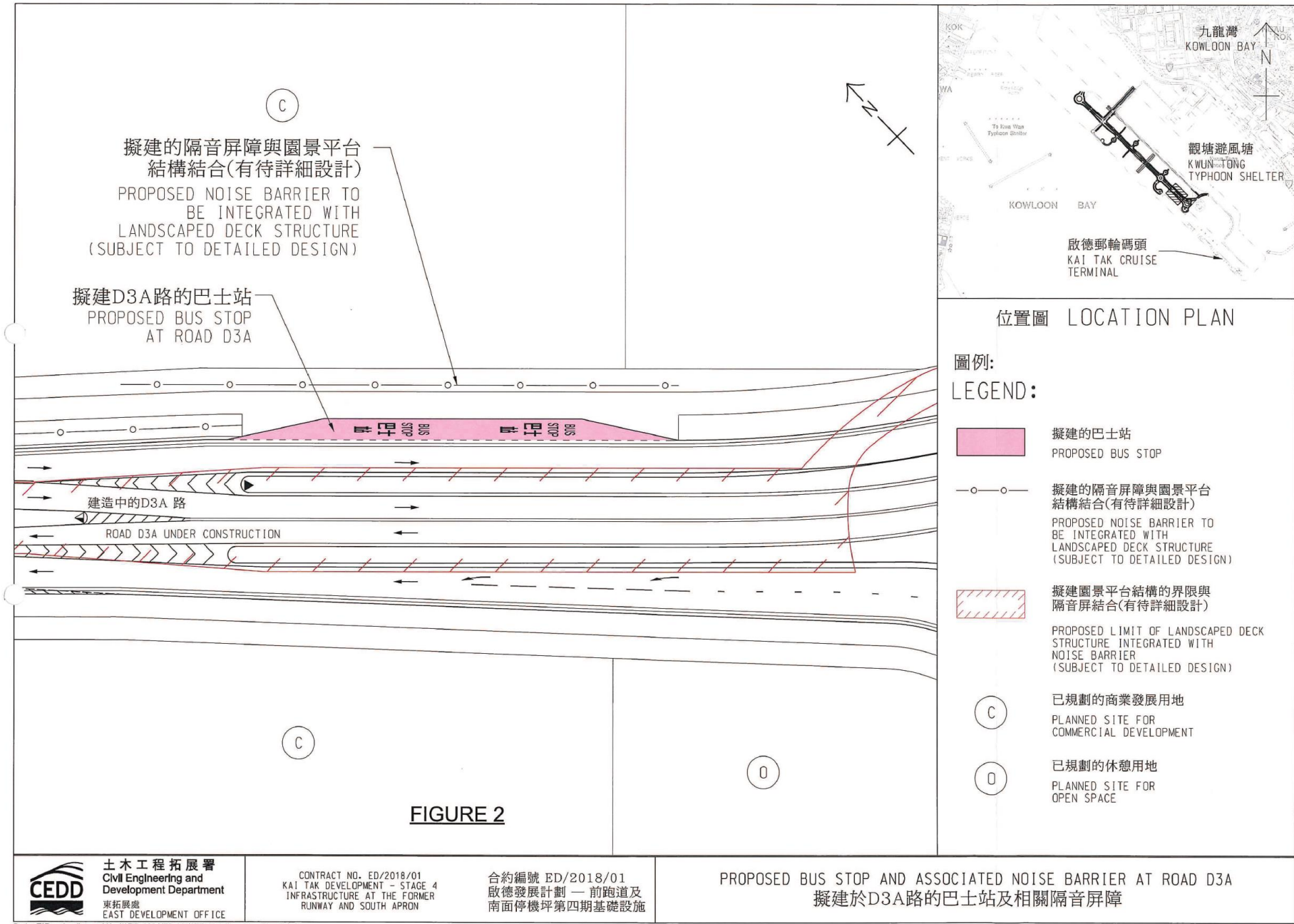


Figure 2 – Proposed Bus Stop And Associated Noise Barrier At Road D3A



Path : Z:\KL2014011TO Team\Drawing (Internal Use)\KTD-400-KTD-499\KTD-414 (PL Location).dgn

Print Date : 7/3/2019

Figure 3 – Future Pedestrian Connection Between Landscaped Deck And Private Developments

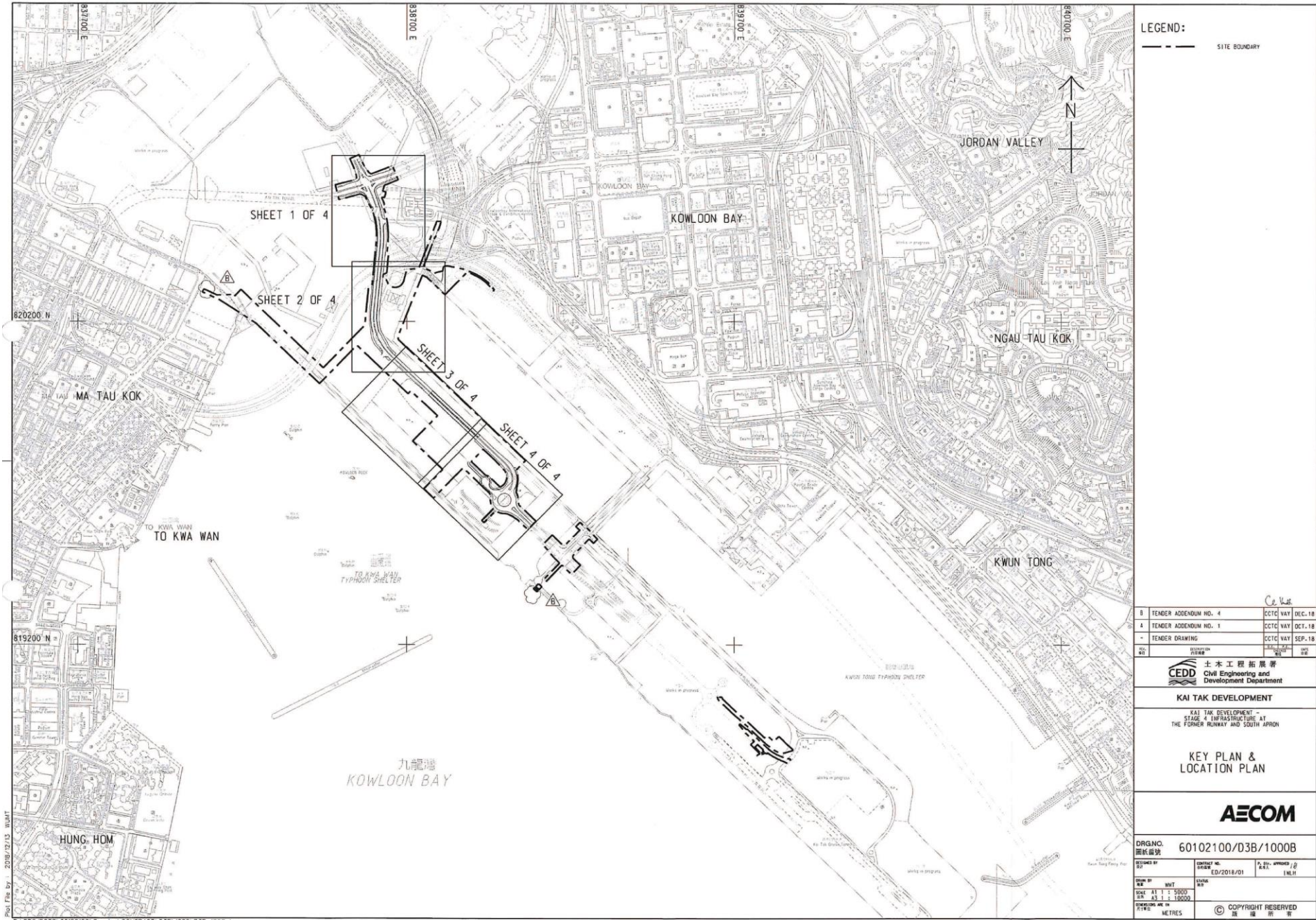


Figure 4 – Site Layout Plan

Special Traffic & Transport Arrangement

Notices on Clearways

Notices on Public Transports

Notices on Prohibited Zone

Notices on Temporary Speed Limits

Notices on Temporary Road Closure

Notices on Expressways

Other Notices

TRAFFIC NOTICES

TRANSPORT DEPARTMENT NOTICE

Temporary Traffic Arrangement on Newly Constructed Unnamed Road (Road D3 - (Metro Park Section)), Kowloon City

Notice is hereby given that the newly constructed unnamed road (Kai Tak Development - Road D3 (Metro Park Section)) connecting Shing Fung Road and Shing Kai Road/Muk Tai Street junction in Kowloon City District will be partially opened with effect from 2:00 p.m. on 31 December 2022.

Appropriate traffic signs will be erected on site to guide motorists.

LEE Sui-chun, Macella Commissioner for Transport (Acting)

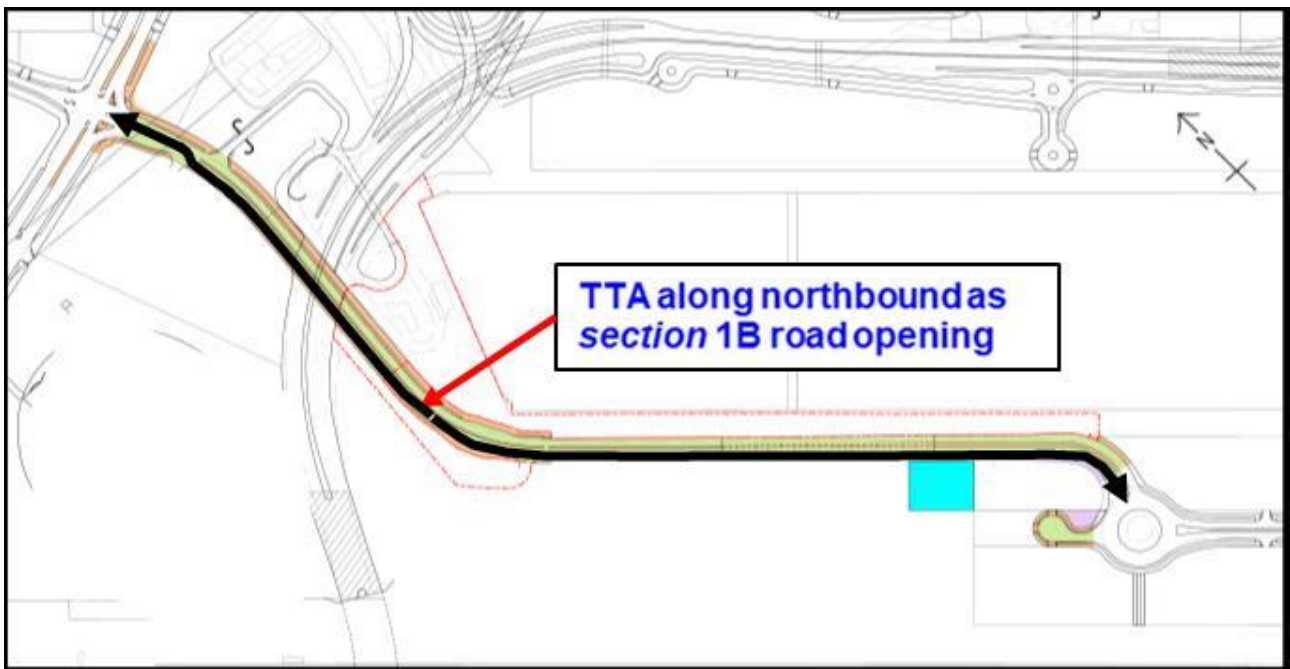


Figure 5 – New Opened Road on 31 December 2022

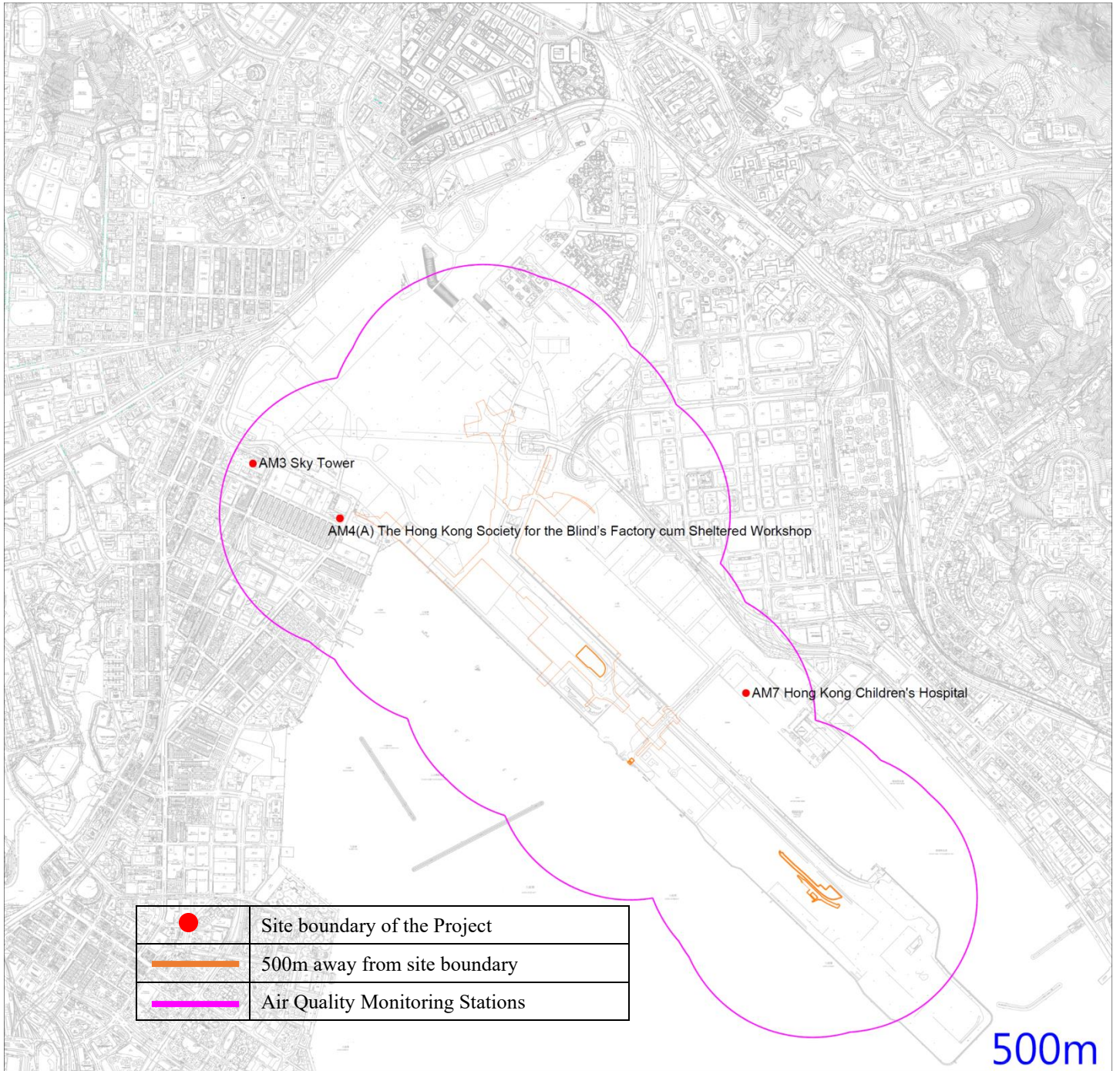


Figure 6 – Air Quality Monitoring Stations

* Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. Construction noise monitoring was conducted on the ground floor outside M11 with facing to the Project Site because of the access limitation in the reporting month.

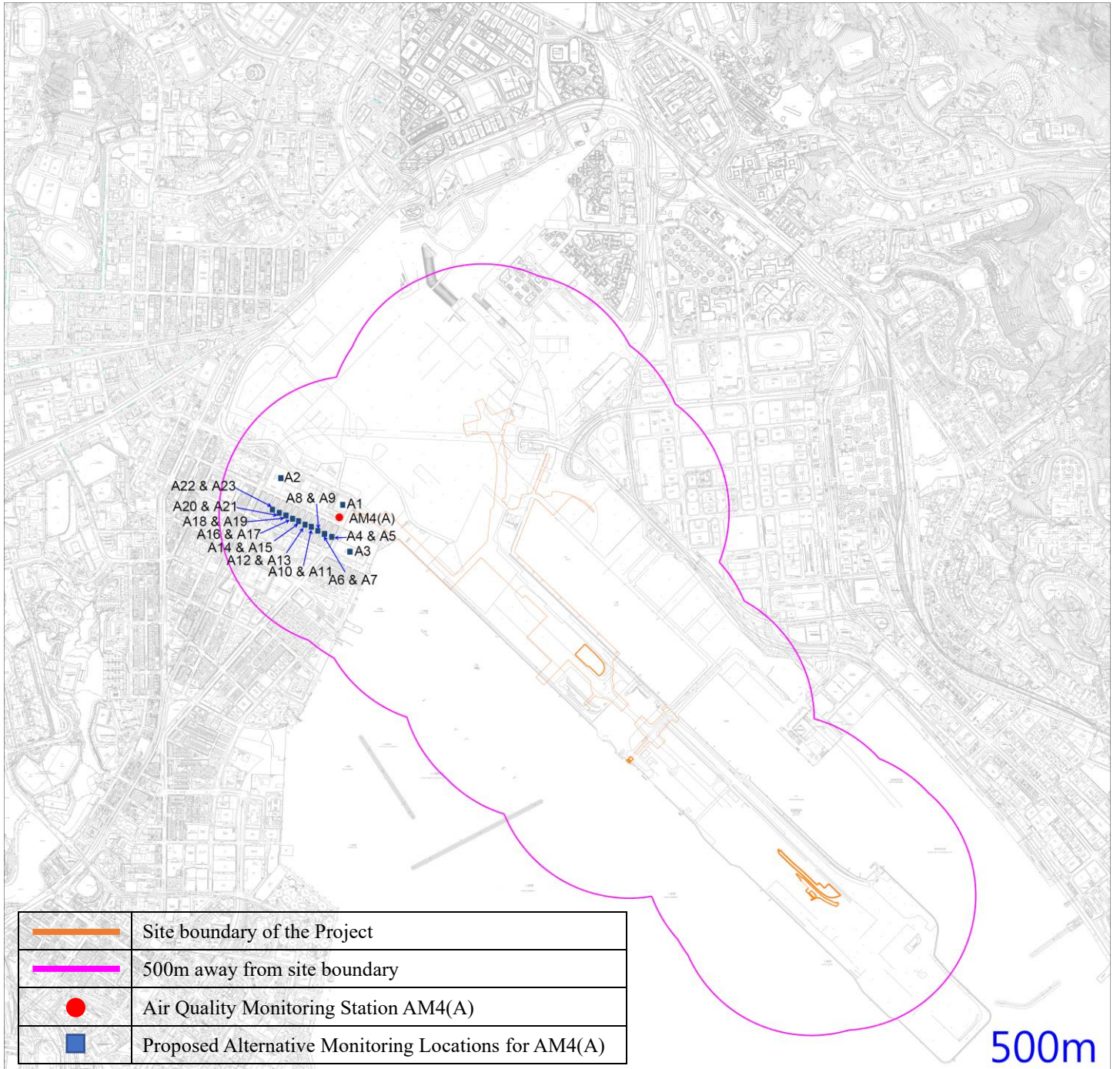


Figure 7 – Proposed Alternative Monitoring Locations for AM4(A)

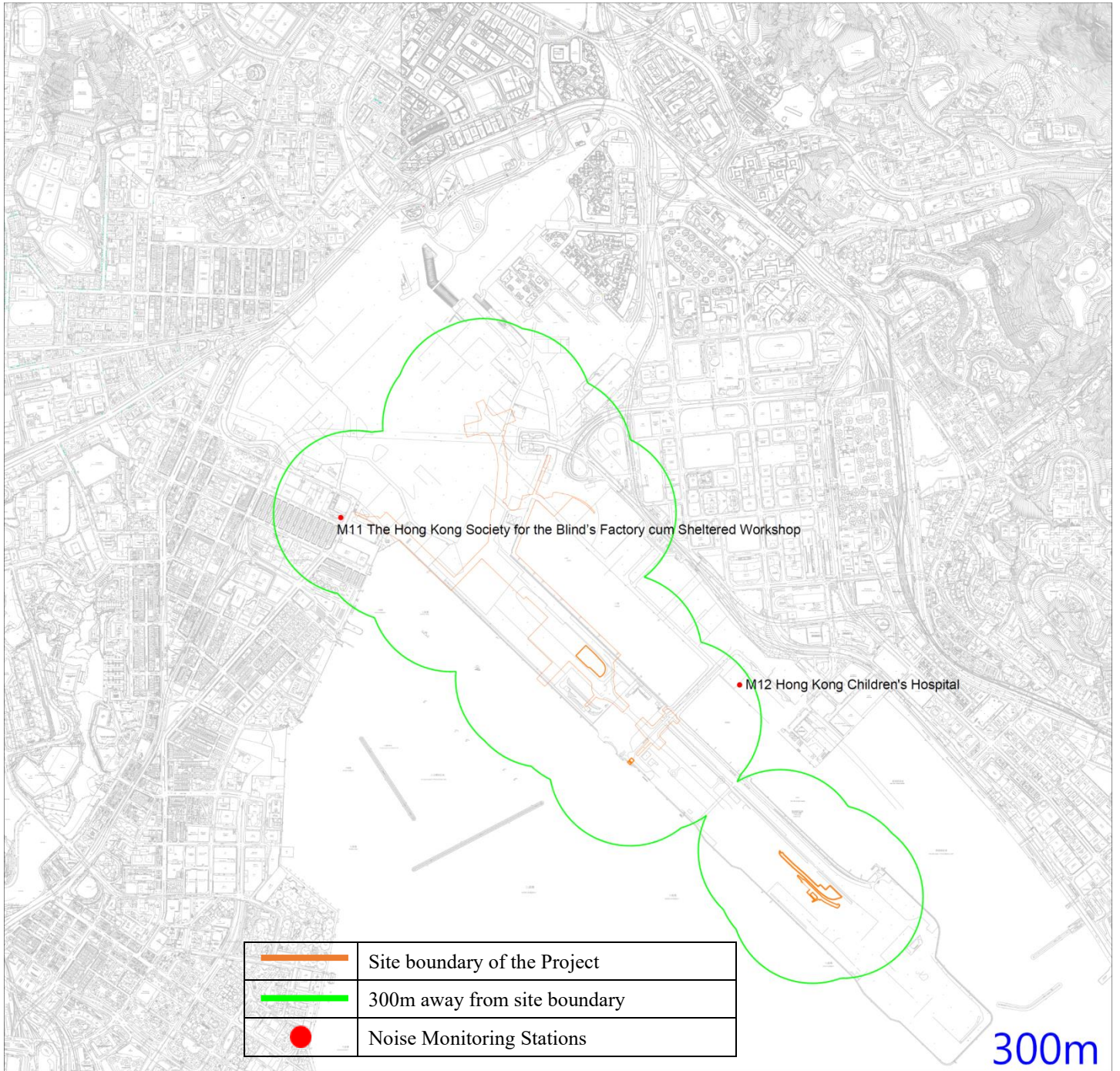
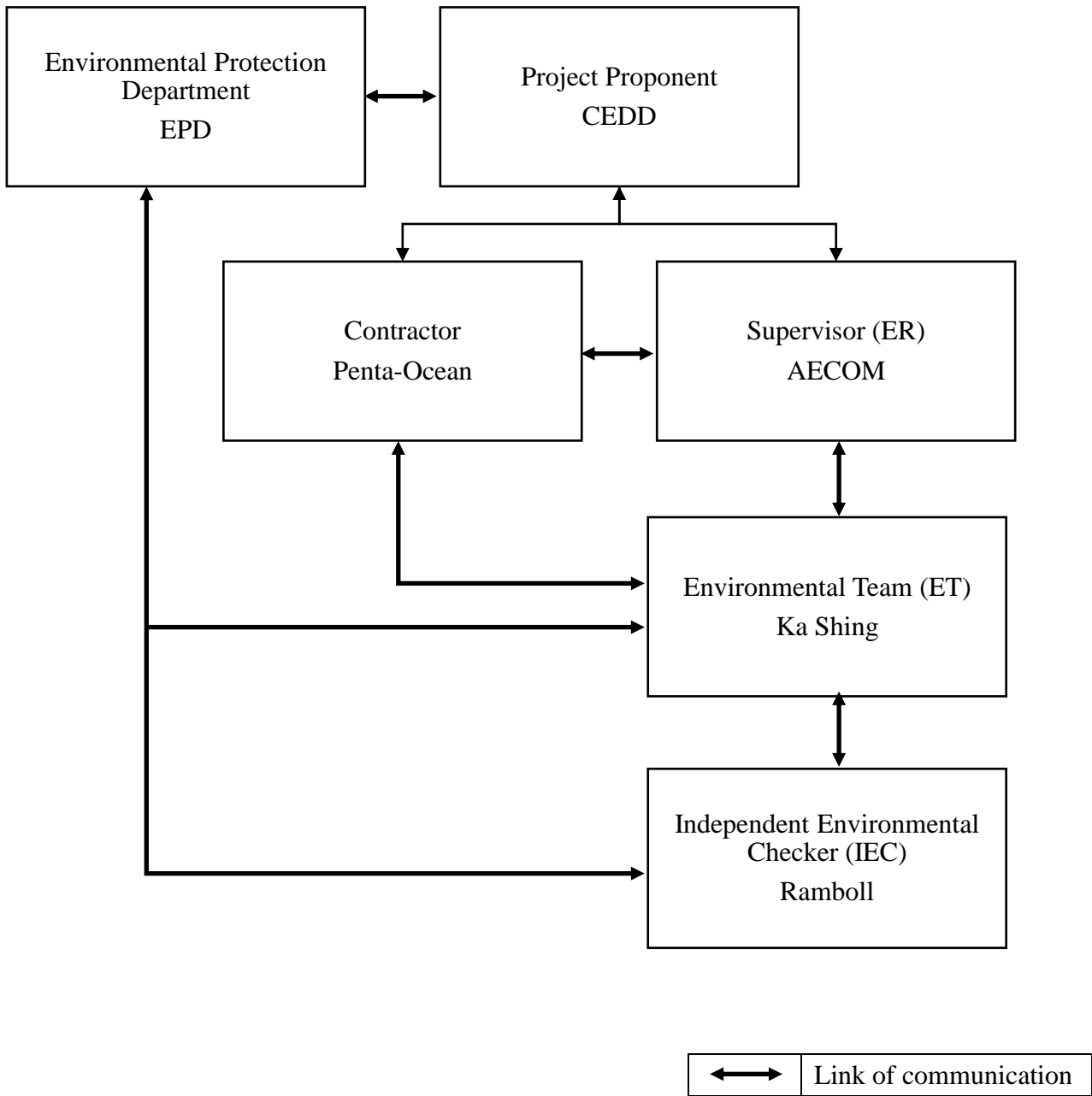


Figure 8 – Noise Monitoring Stations

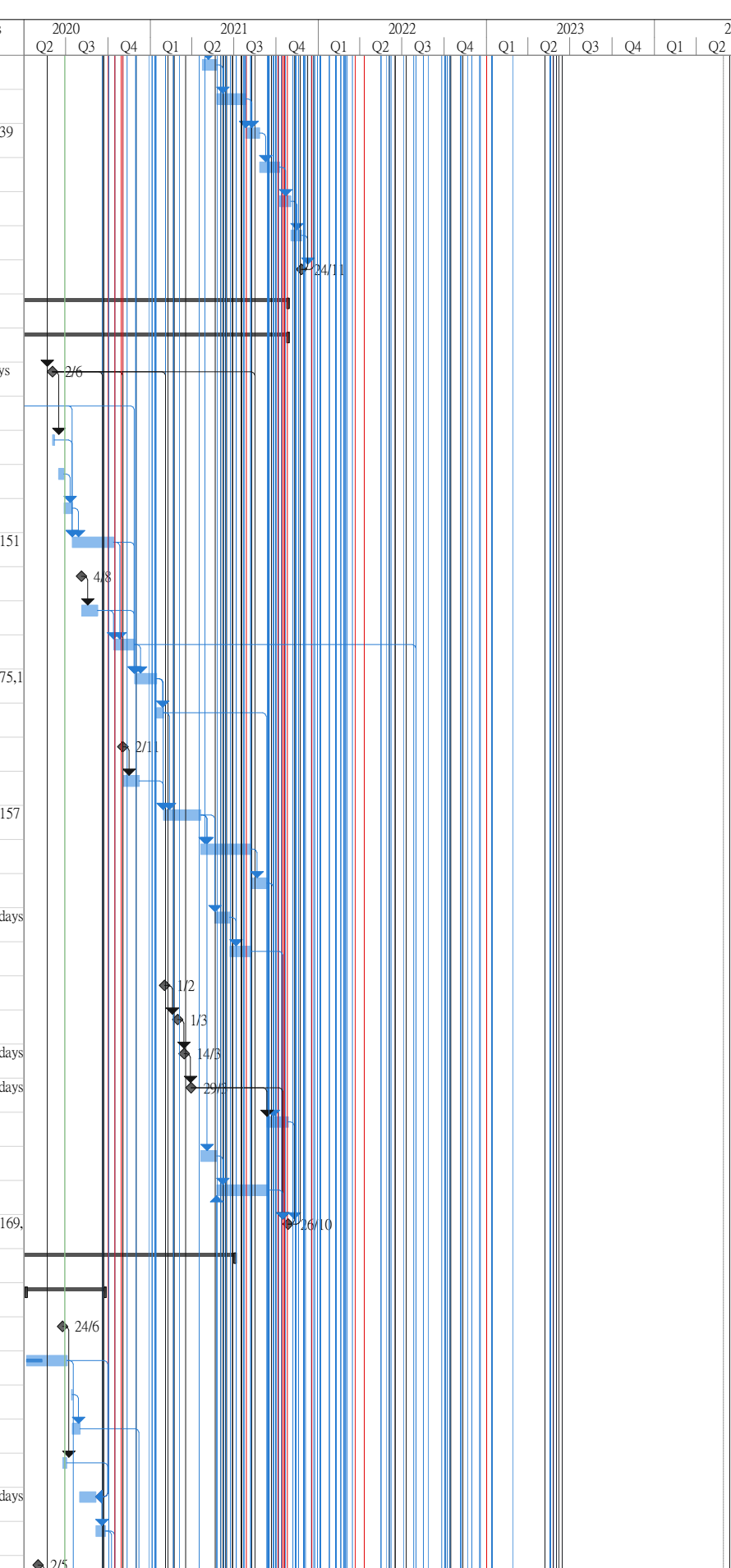
Appendix A – Organization Chart of EM&A Team



Appendix B – Construction Programme

Contract No. ED/2018/01 KTD Project

ID	Task Name	Duration	Actual Duration	Remaining Duration	Physical % Complete	Early Start	Early Finish	Actual Start	Actual Finish	Late Start	Late Finish	Total Slack	TRA	Predecessors	2020				2021				2022				2023			
															Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1138	Sheetpile Installation	25 days	0 days	25 days	0%	Fri 23/4/21	Mon 24/5/21	NA	NA	Mon 3/5/21	Tue 1/6/21	7 days	1 day	1137																
1139	Excavation with Shoring	52 days	0 days	52 days	0%	Tue 25/5/21	Mon 26/7/21	NA	NA	Wed 2/6/21	Tue 3/8/21	7 days	1 day	1138																
1140	Diversion of existing DCS box culvert	26 days	0 days	26 days	0%	Tue 27/7/21	Wed 25/8/21	NA	NA	Wed 4/8/21	Thu 2/9/21	7 days	2 days	1137,410,1139																
1141	Break up existing box culvert (4 walls) + top slab	35 days	0 days	35 days	0%	Thu 26/8/21	Thu 7/10/21	NA	NA	Fri 3/9/21	Sat 16/10/21	7 days	2 days	1140																
1142	Construct new walls at existing box culvert	20 days	0 days	20 days	0%	Fri 8/10/21	Mon 1/11/21	NA	NA	Mon 18/10/21	Tue 9/11/21	7 days	1 days	1141																
1143	Abandon existing DCS box culvert	20 days	0 days	20 days	0%	Tue 2/11/21	Wed 24/11/21	NA	NA	Wed 10/11/21	Thu 2/12/21	7 days	1 days	1142																
1144	Planned Completion for Section 8	0 days	0 days	0 days	0%	Wed 24/11/21	Wed 24/11/21	NA	NA	Thu 2/12/21	Thu 2/12/21	7 days	0 days	1143																
1145	Section 3	729 days	0 days	729 days	0%	Thu 16/5/19	Tue 26/10/21	NA	NA	Tue 2/6/20	Tue 2/11/21	6 days																		
1146	Part 2C - Lift LT3 & LT4	729 days	0 days	729 days	0%	Thu 16/5/19	Tue 26/10/21	NA	NA	Tue 2/6/20	Tue 2/11/21	6 days																		
1147	Access Date - Part 2A,2C	0 days	0 days	0 days	0%	Tue 2/6/20	Tue 2/6/20	NA	NA	Tue 2/6/20	Tue 2/6/20	0 days	0 days	4FS+369 days																
1148	Mobilization of plant and materials	15 days	0 days	15 days	0%	Thu 16/5/19	Sat 1/6/19	NA	NA	Sat 4/7/20	Tue 21/7/20	337 days	1 days																	
1149	TTA implementation	4 days	0 days	4 days	0%	Tue 2/6/20	Fri 5/6/20	NA	NA	Fri 17/7/20	Tue 21/7/20	37 days	1 day	1147																
1150	Carry out Titpit and Identify Underground Utilities location	12 days	0 days	12 days	0%	Mon 15/6/20	Fri 26/6/20	NA	NA	Mon 22/6/20	Fri 3/7/20	7 days																		
1151	Discuss with Relevant Utilities Undertakers	18 days	0 days	18 days	0%	Sat 27/6/20	Tue 14/7/20	NA	NA	Sat 4/7/20	Tue 21/7/20	7 days		1150																
1152	Slew CLP Cable and Abandon Telecom Cable (tentative)	75 days	0 days	75 days	0%	Wed 15/7/20	Mon 12/10/20	NA	NA	Wed 22/7/20	Mon 19/10/20	6 days	4 days	1148,1149,1151																
1153	Lift Tower Foundation - Temp. Works Design and Method Statement Submission	0 days	0 days	0 days	0%	Tue 4/8/20	Tue 4/8/20	NA	NA	Tue 15/9/20	Tue 15/9/20	42 days	1 day																	
1154	Lift Tower Foundation - Temp. Works Design and Method Statement Comment & Approval	35 days	0 days	35 days	0%	Tue 4/8/20	Mon 7/9/20	NA	NA	Tue 15/9/20	Mon 19/10/20	42 days	1 day	1153																
1155	Intall Sheetpile, ELS, Excavation and Temp. Works Installation (Shoring, Drainage & Slope Protection)	38 days	0 days	38 days	0%	Tue 13/10/20	Thu 26/11/20	NA	NA	Tue 20/10/20	Thu 3/12/20	6 days	2 days	1154,1152																
1156	Foundation Construction (Pad Footing include blinding layer, formwork erection, rebar fixing & concreting)	38 days	0 days	38 days	0%	Fri 27/11/20	Wed 13/1/21	NA	NA	Fri 4/12/20	Wed 20/1/21	6 days	2 days	1148,1152,175,1																
1157	Sheepile Extraction & Backfilling	13 days	0 days	13 days	0%	Thu 14/1/21	Thu 28/1/21	NA	NA	Thu 21/1/21	Thu 4/2/21	6 days	1 day	1156																
1158	Lift Tower - Temp. Works Design and Method Statement Submission	0 days	0 days	0 days	0%	Mon 2/11/20	Mon 2/11/20	NA	NA	Fri 1/1/21	Fri 1/1/21	60 days	1 day																	
1159	Lift Tower - Temp. Works Design and Method Statement Comment & Approval	35 days	0 days	35 days	0%	Mon 2/11/20	Sun 6/12/20	NA	NA	Fri 1/1/21	Thu 4/2/21	60 days	1 day	1158																
1160	Lift Shaft Tower: 3 Lifts x 20 day/Lift, Falsework & Formwork Erection, Rebar Fixing & Concreting	63 days	0 days	63 days	0%	Fri 29/1/21	Mon 19/4/21	NA	NA	Fri 5/2/21	Mon 26/4/21	6 days	3 days	1156,1159,1157																
1161	Lift installation (LT3 & LT4)	90 days	0 days	90 days	0%	Tue 20/4/21	Fri 6/8/21	NA	NA	Tue 27/4/21	Fri 13/8/21	6 days	5 days	1160,713																
1162	E & M installation	30 days	0 days	30 days	0%	Sat 7/8/21	Fri 10/9/21	NA	NA	Sat 14/8/21	Fri 17/9/21	6 days	3 days	1161																
1163	Louvers and Glazing Installation	26 days	0 days	26 days	0%	Fri 21/5/21	Mon 21/6/21	NA	NA	Sat 14/8/21	Mon 13/9/21	71 days	2 days	1160FS+25 days																
1164	Parapet Installation and Finishing Works	40 days	0 days	40 days	0%	Tue 22/6/21	Sat 7/8/21	NA	NA	Tue 14/9/21	Tue 2/11/21	71 days	4 days	1163																
1165	CLP Meter Installation	0 days	0 days	0 days	0%	Mon 1/2/21	Mon 1/2/21	NA	NA	Fri 20/8/21	Fri 20/8/21	200 days	0.5 day																	
1166	EMSD Submission Form 5 for Lift Inspection	0 days	0 days	0 days	0%	Mon 1/3/21	Mon 1/3/21	NA	NA	Fri 20/8/21	Fri 20/8/21	172 days	0.5 day	1165																
1167	EMSD Lift Inspection	0 days	0 days	0 days	0%	Sun 14/3/21	Sun 14/3/21	NA	NA	Fri 3/9/21	Fri 3/9/21	172 days	0.5 day	1166FS+14 days																
1168	Issuance of Lift Use Permit	0 days	0 days	0 days	0%	Mon 29/3/21	Mon 29/3/21	NA	NA	Sat 18/9/21	Sat 18/9/21	172 days	0.5 day	1167FS+15 days																
1169	Testing & commissioning with Statutory Inspection	36 days	0 days	36 days	0%	Sat 11/9/21	Tue 26/10/21	NA	NA	Sat 18/9/21	Tue 2/11/21	6 days	1 days	1162,1168																
1170	Footpath	28 days	0 days	28 days	0%	Tue 20/4/21	Mon 24/5/21	NA	NA	Tue 8/6/21	Mon 12/7/21	40 days	1 days	1160																
1171	Open Space within Part 2C	94 days	0 days	94 days	0%	Tue 25/5/21	Mon 13/9/21	NA	NA	Tue 13/7/21	Tue 2/11/21	40 days	4 days	1170,1230																
1172	Planned Completion for Section 3	0 days	0 days	0 days	0%	Tue 26/10/21	Tue 26/10/21	NA	NA	Tue 2/11/21	Tue 2/11/21	6 days	0 days	1171,1168,1169,																
1173	Sections 5 and 9: Noise Barrier Installation	380 days	6.83 days	373.17 days	0%	Fri 20/3/20	Sat 3/7/21	Fri 20/3/20	NA	Fri 20/3/20	Mon 5/7/21	1 day	1 day																	
1174	1.0 Noise Barrier Shop Drawing Preparation, Offsite Fabrication	141 days	20.86 days	120.14 days	0%	Mon 6/4/20	Thu 24/9/20	Mon 6/4/20	NA	Mon 6/4/20	Mon 7/12/20	60 days																		
1175	CNP and TTA available	0 days	0 days	0 days	0%	Wed 24/6/20	Wed 24/6/20	NA	NA	Thu 20/8/20	Thu 20/8/20	47 days	1 day																	
1176	Expose the Existing Noise Barrier Foundation	70 days	25 days	45 days	36%	Mon 6/4/20	Fri 3/7/20	Mon 6/4/20	NA	Mon 6/4/20	Tue 7/7/20	3 days	1 day																	
1177	Implement TTA	2 days	0 days	2 days	0%	Mon 13/7/20	Tue 14/7/20	NA	NA	Wed 18/11/20	Thu 19/11/20	107 days	0.5 day																	
1178	Expose the Existing Noise Barrier Foundation under Existing Footpath	15 days	0 days	15 days	0%	Wed 15/7/20	Fri 31/7/20	NA	NA	Fri 20/11/20	Mon 7/12/20	107 days	1 day	1177																
1179	Carry out the Site Survey for Existing Holding Down Bolt at Existing Landscaped Deck	6 days	0 days	6 days	0%	Wed 24/6/20	Thu 2/7/20	NA	NA	Thu 20/8/20	Wed 26/8/20	47 days	1 day	1175																
1180	Noise Barrier Shop Drawings Preparation	30 days	0 days	30 days	0%	Fri 31/7/20	Thu 3/9/20	NA	NA	Fri 21/8/20	Thu 24/9/20	18 days	0.5 day	1176FF+18 days																
1181	Noise Barrier Shop Drawings Comment by PM	18 days	0 days	18 days	0%	Fri 4/9/20	Thu 24/9/20	NA	NA	Fri 25/9/20	Sat 17/10/20	18 days	0.5 day	1180																
1182	PMAA Panel Material Sample Submission	0 days	0 days	0 days	0%	Sat 2/5/20	Sat 2/5/20	NA	NA	Sat 6/6/20	Sat 6/6/20	30 days	1 days																	



Title: Rev.11 Prog with Progress as of 22-May-20

Task	Summary	Inactive Milestone	Duration-only	Start-only	External Milestone	Critical Split
Split	Project Summary	Inactive Summary	Manual Summary Rollup	Finish-only	Deadline	Progress
Milestone	Inactive Task	Manual Task	Manual Summary	External Tasks	Critical	Manual Progress

Contract No. ED/2018/01 KTD Project

ID	Task Name	Duration	Actual Duration	Remaining Duration	Physical % Complete	Early Start	Early Finish	Actual Start	Actual Finish	Late Start	Late Finish	Total Slack	TRA	Predecessors	2020				2021				2022				2023							
															Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1362	FSD Inspection	0 days	0 days	0 days	0%	Sat 29/4/23	Sat 29/4/23	NA	NA	Thu 11/5/23	Thu 11/5/23	8 days	0.5 days	1361FS+15 days																				
1363	Issuance of FS Certificate	0 days	0 days	0 days	0%	Thu 18/5/23	Thu 18/5/23	NA	NA	Tue 30/5/23	Tue 30/5/23	8 days	0.5 days	1362FS+15 days																				
1364	Salt Water and Sewage Pumping Station: Landscaping hardworks and softworks	110 days	0 days	110 days	0%	Wed 30/11/22	Sat 15/4/23	NA	NA	Wed 11/1/23	Mon 29/5/23	35 days	2 days	562,1351,548																				
1365	Salt Water and Sewage Pumping Station: Planting Works	110 days	0 days	110 days	0%	Wed 30/11/22	Sat 15/4/23	NA	NA	Wed 11/1/23	Mon 29/5/23	35 days	2 days	562,1351,548																				
1366	Section 6 Completion	0 days	0 days	0 days	0%	Tue 30/5/23	Tue 30/5/23	NA	NA	Tue 30/5/23	Tue 30/5/23	0 days		1350,1363,1364																				
1367	Seawater Intake Box Culvert (~169m)	647 days	0 days	647 days	0%	Fri 5/3/21	Mon 8/5/23	NA	NA	Fri 5/3/21	Tue 30/5/23	0 days																						
1368	Access Date - Part 4	0 days	0 days	0 days	0%	Fri 5/3/21	Fri 5/3/21	NA	NA	Fri 5/3/21	Fri 5/3/21	0 days	0 days	4FS+645 days																				
1369	Part 4 - CHA.0-79 (79m)	290 days	0 days	290 days	0%	Thu 19/5/22	Mon 8/5/23	NA	NA	Fri 10/6/22	Tue 30/5/23	18 days																						
1370	CHA 0-24 Precast Section	34 days	0 days	34 days	0%	Thu 19/5/22	Tue 28/6/22	NA	NA	Fri 10/6/22	Wed 20/7/22	18 days																						
1371	Temporary ELS & Excavation and Shoring Installation	24 days	0 days	24 days	0%	Thu 19/5/22	Thu 16/6/22	NA	NA	Fri 10/6/22	Fri 8/7/22	18 days	1 days	1384,1386,1238																				
1372	Install 3 nos. 8 m long precast units (2.5 days per unit)	10 days	0 days	10 days	0%	Fri 17/6/22	Tue 28/6/22	NA	NA	Sat 9/7/22	Wed 20/7/22	18 days	2.5 days	1371																				
1373	CHA 24-79 (75m) (5 units)	256 days	0 days	256 days	0%	Wed 29/6/22	Mon 8/5/23	NA	NA	Thu 21/7/22	Tue 30/5/23	18 days																						
1374	Temporary ELS & Excavation	50 days	0 days	50 days	0%	Wed 29/6/22	Fri 26/8/22	NA	NA	Thu 21/7/22	Sat 17/9/22	18 days	1 day	1372																				
1375	Unit 1 & 3 (41 days per unit)	44 days	0 days	44 days	0%	Sat 27/8/22	Thu 20/10/22	NA	NA	Mon 19/9/22	Thu 10/11/22	18 days	3 days	1374																				
1376	Unit 2 & 4 (41 days per unit)	44 days	0 days	44 days	0%	Fri 21/10/22	Sat 10/12/22	NA	NA	Fri 11/11/22	Mon 2/1/23	18 days	3 days	1375																				
1377	Unit 5 & 6 (41 days per unit)	44 days	0 days	44 days	0%	Mon 12/12/22	Sat 4/2/23	NA	NA	Tue 3/1/23	Sat 25/2/23	18 days	3 days	1376																				
1378	Remove struts and backfilling	24 days	0 days	24 days	0%	Mon 6/2/23	Sat 4/3/23	NA	NA	Mon 27/2/23	Sat 25/3/23	18 days	1 days	1376,1377																				
1379	Reinstate seawall	50 days	0 days	50 days	0%	Mon 6/3/23	Mon 8/5/23	NA	NA	Mon 27/3/23	Tue 30/5/23	18 days	1 days	1378																				
1380	Part 10 - CHA79-89 (10m)	286 days	0 days	286 days	0%	Wed 2/6/21	Wed 18/5/22	NA	NA	Wed 2/6/21	Thu 9/6/22	0 days																						
1381	Access Date - Part 10	0 days	0 days	0 days	0%	Wed 2/6/21	Wed 2/6/21	NA	NA	Wed 2/6/21	Wed 2/6/21	0 days	0 days	4FS+734 days,1																				
1382	Tempoary Works Design and Method Statement Submission	0 days	0 days	0 days	0%	Sun 2/1/22	Sun 2/1/22	NA	NA	Tue 22/2/22	Tue 22/2/22	40 days																						
1383	Tempoary Works Design and Method Statement Comment by PM	21 days	0 days	21 days	0%	Mon 3/1/22	Wed 26/1/22	NA	NA	Tue 22/2/22	Thu 17/3/22	40 days		1382																				
1384	Temporary ELS & Excavation	14 days	0 days	14 days	0%	Fri 25/2/22	Sat 12/3/22	NA	NA	Fri 18/3/22	Sat 2/4/22	18 days	0 days	1388,1381,1391																				
1385	Box Culvert with Feeder Installation	47 days	0 days	47 days	0%	Mon 14/3/22	Wed 11/5/22	NA	NA	Mon 4/4/22	Wed 1/6/22	18 days	6 days	1384,1381,1391																				
1386	Remove struts and backfilling	6 days	0 days	6 days	0%	Thu 12/5/22	Wed 18/5/22	NA	NA	Thu 2/6/22	Thu 9/6/22	18 days	1 days	1392,1385																				
1387	Part 1 - CH89-165 (76m) 6 Units	193 days	0 days	193 days	0%	Mon 16/8/21	Fri 8/4/22	NA	NA	Mon 6/9/21	Wed 1/6/22	18 days																						
1388	Temporary ELS & Excavation	25 days	0 days	25 days	0%	Mon 16/8/21	Mon 13/9/21	NA	NA	Mon 6/9/21	Wed 6/10/21	18 days	0.5 days	9,1147,1445																				
1389	Unit 1 & 3 (41 days per unit)	44 days	0 days	44 days	0%	Tue 14/9/21	Sat 6/11/21	NA	NA	Thu 7/10/21	Sat 27/11/21	18 days	4 days	1388,418,570																				
1390	Unit 2 & 4 (41 days per unit)	44 days	0 days	44 days	0%	Mon 8/11/21	Thu 30/12/21	NA	NA	Mon 29/11/21	Fri 21/1/22	18 days	4 days	1389																				
1391	Unit 5 & 6 (41 days per unit)	44 days	0 days	44 days	0%	Fri 31/12/21	Thu 24/2/22	NA	NA	Sat 22/1/22	Thu 17/3/22	18 days	4 days	1390																				
1392	Remove struts and backfilling	36 days	0 days	36 days	0%	Fri 25/2/22	Fri 8/4/22	NA	NA	Thu 21/4/22	Wed 1/6/22	43 days	1 days	1390,1391																				
1393	Elevated Landscape Deck CH1920 - 2090	1178 days	11.27 days	1166.74 days?	0%	Thu 16/5/19	Sat 29/4/23	Thu 16/5/19	NA	Thu 16/5/19	Wed 29/5/24	321 da...																						
1394	Agree Interface Coordination Plan with KL/2014/01 Contractor	14 days	14 days	0 days	100%	Thu 16/5/19	Fri 31/5/19	Thu 16/5/19	Fri 31/5/19	Thu 16/5/19	Fri 31/5/19	0 days	0 days																					
1395	Ch1920-CH2060	1 day?	0 days	1 day?	0%	Sat 23/5/20	Sat 23/5/20	NA	NA	Wed 29/5/24	Wed 29/5/24	1467 d...																						
1396	Part 1 - CH1919-2020 (70m) 4 bays	181 days	0 days	181 days	0%	Mon 5/7/21	Thu 10/2/22	NA	NA	Wed 8/9/21	Mon 14/2/22	3 days																						
1397	Pier Temporary Works Design and Method Statement Submission	0 days	0 days	0 days	0%	Mon 5/7/21	Mon 5/7/21	NA	NA	Wed 8/9/21	Wed 8/9/21	65 days	1 day																					
1398	Pier Temporary Works Design and Method Statement Comment & Approval	45 days	0 days	45 days	0%	Mon 5/7/21	Wed 18/8/21	NA	NA	Wed 8/9/21	Fri 22/10/21	65 days	1 day	1397																				
1399	CH1930 Pier (1set x 3nos.):	12 days	0 days	12 days	0%	Tue 5/10/21	Tue 19/10/21	NA	NA	Fri 8/10/21	Fri 22/10/21	3 days		1075,1076,1066																				
1400	CH1950-CH2020: Pier (3sets x 3nos) - 1 day/no.. 1 team	11 days	0 days	11 days	0%	Wed 20/10/21	Mon 1/11/21	NA	NA	Sat 23/10/21	Thu 4/11/21	3 days	2 day	579,1398,1399																				
1401	Falsework Temporary Works Design and Method Statement Submission	0 days	0 days	0 days	0%	Wed 1/9/21	Wed 1/9/21	NA	NA	Tue 21/9/21	Tue 21/9/21	20 days	1 day																					
1402	Falsework Temporary Works Design and Method Statement Comment & Approval	45 days	0 days	45 days	0%	Wed 1/9/21	Fri 15/10/21	NA	NA	Tue 21/9/21	Thu 4/11/21	20 days	1 day	1401																				
1403	Falsework erection	10 days	0 days	10 days	0%	Tue 2/11/21	Fri 12/11/21	NA	NA	Fri 5/11/21	Tue 16/11/21	3 days	1 day	1400,1402																				
1404	Deck & Secondary Upstand Beam Temporary Works Design and Method Statement Submission	0 days	0 days	0 days	0%	Wed 1/9/21	Wed 1/9/21	NA	NA	Sun 3/10/21	Sun 3/10/21	32 days	1 day																					
1405	Deck & Secondary Upstand Beam Temporary Works Design and Method Statement Comment & Approval	45 days	0 days	45 days	0%	Wed 1/9/21	Fri 15/10/21	NA	NA	Sun 3/10/21	Tue 16/11/21	32 days	1 day	1404																				
1406	Deck (4 bays) 12d/bay & link bridge (12d/bay)	25 days	0 days	25 days	0%	Sat 13/11/21	Sat 11/12/21	NA	NA	Wed 17/11/21	Wed 15/12/21	3 days	1 day	1403,625,623FS																				

Title: Rev.11 Prog with Progress as of 22-May-20

Task		Summary		Inactive Milestone		Duration-only		Start-only		External Milestone		Critical Split	
Split		Project Summary		Inactive Summary		Manual Summary Rollup		Finish-only		Deadline		Progress	
Milestone		Inactive Task		Manual Task		Manual Summary		External Tasks					

Appendix C – Apply permission for Environmental Monitoring

Propose alternative monitoring location: The Lok Sin Tong Modular Social Housing Scheme

Status: Rejected application

Email on: 10 May 2022

Subject **The Lok Sin Tong Benevolent Society Kowloon - Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From [Redacted]
To [Redacted]
Bcc [Redacted]

Date 2022-05-10 15:48

- Figure 1 Impact dust measurement setup.jpg(~1.2 MB)
- Figure 2 Impact noise measurement setup.jpg(~979 KB)

Company: The Lok Sin Tong Benevolent Society Kowloon

By Email ([Redacted])

Dear Madam
5 May 2022

Dear Sir/ Madam, [Redacted]

Re: Environmental Monitoring for Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron

We, Ka Shing Management Consultant Limited (KS), is appointed by Civil Engineering and Development Department (CEDD), working as Environmental Team (ET) to conduct the monitoring and audit works as part of the EM&A programme of the Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron (KTD Stage 4 Project) starting from July 2019 to May 2024.

KTD Stage 4 project is located in the south-eastern part of Kowloon Peninsular of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. Your premise, Hong Kong Society for Blind Workshop and Hotels, is one of the proposed sensitive receivers.

We would like to obtain your kind permission for entering the premise to carry out baseline and impact monitoring, baseline dust monitoring (1-hour and 24-hour TSP monitoring) and baseline noise monitoring (30-minute) would need to conduct continuously for 14 days, our propose baseline monitoring date is June 2022.

After baseline monitoring, impact dust monitoring (1-hour and 24-hour TSP monitoring) and impact noise monitoring (30-minute) would take place between 08:00 hrs to 18:00 hrs in normal working days once every six days.

The monitoring location will be located on the roof top floor of The Lok Sin Tong Modular Social Housing Scheme at Junction of Sung Wong Toi Road and To Kwa Wan Road facing to Kai Tak Development area. 220V power supply is needed for 24-hour TSP monitor with size 0.5m (L) x 0.5m (W) x 1.4m (H). We will pay for the electricity. Similar setup photo records are shown in Figure 1 and Figure 2 for your kindly reference. Our technician will stay at the measurement point for 1-hour TSP and 30-minute noise measurement.

We hope to conduct site visit at 13:30 pm of 25 May 2022 (Wed).

Should you have any enquires regarding the measurement, please do not hesitate to contact [Redacted] at [Redacted]

Thank you for your kind attention and I look forward to receiving your favourable reply soon.

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Email on: 13 October 2022

Subject **The Lok Sin Tong Benevolent Society Kowloon - Reject to Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From [Redacted]
To [Redacted]
Bcc [Redacted]

Date 2022-10-13 15:52

Company: The Lok Sin Tong Benevolent Society Kowloon

By Email [Redacted]

Dear Sir/ [Redacted]

Referring to the communication between your staff and me regarding the captioned work at 21 September 2022, the Lok Sin Tong Benevolent Society Kowloon was rejected the apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development. Due to electricity supply and security concern in Modular House , Environmental monitoring at Modular House is not allowed open.

Should you have any enquires regarding the measurement, please do not hesitate to contact [Redacted] at [Redacted]

Thank you for your kind attention and I look forward to receiving your favourable reply soon.

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Propose alternative monitoring location: Freder Centre
Status: No reply from building management office unit the reporting month

Email on: 19 July 2022

Subject **Freder Centre - Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From [Redacted]
To [Redacted]
Bcc [Redacted]

Date 2022-07-19 13:33

- Figure 1 Impact dust measurement setup.jpg(~1.2 MB)
- Figure 2 Impact noise measurement setup.jpg(~979 KB)

Company: Freder Centre

By Email [Redacted]
Dear Sir [Redacted]

Re: Environmental Monitoring for Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron

We, Ka Shing Management Consultant Limited (KS), is appointed by Civil Engineering and Development Department (CEDD), working as Environmental Team (ET) to conduct the monitoring and audit works as part of the EM&A programme of the Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron (KTD Stage 4 Project) starting from July 2019 to May 2024.

KTD Stage 4 project is located in the south-eastern part of Kowloon Peninsular of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. Your premise, Hong Kong Society for Blind Workshop and Hotels, is one of the proposed sensitive receivers.

We would like to obtain your kind permission for entering the premise to carry out baseline and impact monitoring, baseline dust monitoring (1-hour and 24-hour TSP monitoring) and baseline noise monitoring (30-minute) would need to conduct continuously for 14 days, our propose baseline monitoring date is August 2022.

After baseline monitoring, impact dust monitoring (1-hour and 24-hour TSP monitoring) and impact noise monitoring (30-minute) would take place between 08:00 hrs to 18:00 hrs in normal working days once every six days.

The monitoring location will be located on the roof top floor of Freder Centre at Junction of Sung Wong Toi Road and To Kwa Wan Road facing to Kai Tak Development area. 220V power supply is needed for 24-hour TSP monitor with size 0.5m (L) x 0.5m (W) x 1.4m (H). We will pay for the electricity. Similar setup photo records are shown in Figure 1 and Figure 2 for your kindly reference. Our technician will stay at the measurement point for 1-hour TSP and 30-minute noise measurement.

We hope to conduct site visit at 15:30pm of 26 July 2022 (Tue).

Should you have any enquires regarding the measurement, please do not hesitate to contact [Redacted] at [Redacted]

Thank you for your kind attention and I look forward to receiving your favourable reply soon.

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Propose alternative monitoring location: New Port Centre
Status: No reply from building management office unit the reporting month

Email on: 19 July 2022

Subject **New Port Centre - Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From [Redacted]
To [Redacted]
Bcc [Redacted]

Date 2022-07-19 13:33

- Figure 1 Impact dust measurement setup.jpg(~1.2 MB)
- Figure 2 Impact noise measurement setup.jpg(~979 KB)

Company: New Port Centre & Synergis management services limited

By Email [Redacted]

Dear Sir,

Re: Environmental Monitoring for Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron

We, Ka Shing Management Consultant Limited (KS), is appointed by Civil Engineering and Development Department (CEDD), working as Environmental Team (ET) to conduct the monitoring and audit works as part of the EM&A programme of the Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron (KTD Stage 4 Project) starting from July 2019 to May 2024.

KTD Stage 4 project is located in the south-eastern part of Kowloon Peninsular of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. Your premise, New Port Centre, is one of the proposed sensitive receivers.

We would like to obtain your kind permission for entering the premise to carry out baseline and impact monitoring, baseline dust monitoring (1-hour and 24-hour TSP monitoring) and baseline noise monitoring (30-minute) would need to conduct continuously for 14 days, our propose baseline monitoring date is August 2022.

After baseline monitoring, impact dust monitoring (1-hour and 24-hour TSP monitoring) and impact noise monitoring (30-minute) would take place between 08:00 hrs to 18:00 hrs in normal working days once every six days.

The monitoring location will be located on the roof top floor of New Port Centre at Junction of Sung Wong Toi Road and To Kwa Wan Road facing to Kai Tak Development area. 220V power supply is needed for 24-hour TSP monitor with size 0.5m (L) x 0.5m (W) x 1.4m (H). We will pay for the electricity. Similar setup photo records are shown in Figure 1 and Figure 2 for your kindly reference. Our technician will stay at the measurement point for 1-hour TSP and 30-minute noise measurement.

We hope to conduct site visit at 13:30pm of 26 July 2022 (Tue).

Should you have any enquires regarding the measurement, please do not hesitate to contact [Redacted] at [Redacted]

Thank you for your kind attention and I look forward to receiving your favourable reply soon.

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Email on: 17 August 2022

Subject **Kum Shing Group and Hong Kong Energy Infrastructure Limited - Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From [Redacted]
To [Redacted]
Bcc [Redacted]

Date 2022-08-17 11:54

- Figure 1 Impact dust measurement setup.jpg(~1.2 MB)
- Figure 2 Impact noise measurement setup.jpg(~979 KB)
- plug 01.jpg(~2.6 MB)

Company: Kum Shing Group and Hong Kong Energy Infrastructure Limited

By Email [Redacted]

Dear Sir,

Re: Environmental Monitoring for Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron

We, Ka Shing Management Consultant Limited (KS), is appointed by Civil Engineering and Development Department (CEDD), working as Environmental Team (ET) to conduct the monitoring and audit works as part of the EM&A programme of the Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron (KTD Stage 4 Project) starting from July 2019 to May 2024.

KTD Stage 4 project is located in the south-eastern part of Kowloon Peninsular of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. Your premise, New Port Centre, is one of the proposed sensitive receivers.

We would like to obtain your kind permission for entering the premise to carry out baseline and impact monitoring, baseline dust monitoring (1-hour and 24-hour TSP monitoring) and baseline noise monitoring (30-minute) would need to conduct continuously for 14 days, our propose baseline monitoring date is August 2022.

After baseline monitoring, impact dust monitoring (1-hour and 24-hour TSP monitoring) and impact noise monitoring (30-minute) would take place between 08:00 hrs to 18:00 hrs in normal working days once every six days.

The monitoring location will be located on the roof top floor of New Port Centre at Junction of Sung Wong Toi Road and To Kwa Wan Road facing to Kai Tak Development area. 220V power supply is needed for 24-hour TSP monitor with size 0.5m (L) x 0.5m (W) x 1.4m (H). We will pay for the electricity. Similar setup photo records are shown in Figure 1 and Figure 2 for your kindly reference. Our technician will stay at the measurement point for 1-hour TSP and 30-minute noise measurement.

We hope to loan the company on the roof top floor of Plug 01 for 24-hour TSP monitor of power supply.

Should you have any enquires regarding the measurement, please do not hesitate to contact [Redacted] at [Redacted]

Thank you for your kind attention and I look forward to receiving your favourable reply soon.

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Propose alternative monitoring location: New Port Centre
Status: No reply from building management office unit the reporting month

Email on: 19 August 2022

Subject **RE: Kum Shing Group and Hong Kong Energy Infrastructure Limited - Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From

To

Cc

Date 2022-08-19 08:36

Dear Mr. LEE,

As we do not have ownership to the roof, we'd suggest you to approach the management company of Newport Center for further discussion.

<https://www.synergis.com.hk/html/en/>

best,
Paul Lee

Email on: 15 September 2022

Subject **New Port Centre - Apply permission for Environmental Monitoring for Stage 4 of Kai Tak Development**



From

To
Bcc

Date 2022-09-15 15:35

- Figure 1 Impact dust measurement setup.jpg(~1.2 MB)
- Figure 2 Impact noise measurement setup.jpg(~979 KB)
- Figure 3 expect Impact dust measurement setup.png(~267 KB)
- Figure 4 power supply plug.jpg(~2.6 MB)

Company: New Port Centre & Synergis management services limited

By Email

Dear Sir,

Re: Environmental Monitoring for Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron

We, Ka Shing Management Consultant Limited (KS), is appointed by Civil Engineering and Development Department (CEDD), working as Environmental Team (ET) to conduct the monitoring and audit works as part of the EM&A programme of the Kai Tak Development - Stage 4 Infrastructure at the former runway and south apron (KTD Stage 4 Project) starting from July 2019 to May 2024.

KTD Stage 4 project is located in the south-eastern part of Kowloon Peninsular of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. Your premise, New Port Centre, is one of the proposed sensitive receivers.

We would like to obtain your kind permission for entering the premise to carry out baseline and impact monitoring, baseline dust monitoring (1-hour and 24-hour TSP monitoring) and baseline noise monitoring (30-minute) would need to conduct continuously for 14 days, our propose baseline monitoring date is August 2022.

After baseline monitoring, impact dust monitoring (1-hour and 24-hour TSP monitoring) and impact noise monitoring (30-minute) would take place between 08:00 hrs to 18:00 hrs in normal working days once every six days.

The monitoring location will be located on the roof top floor of New Port Centre at Junction of Sung Wong Toi Road and To Kwa Wan Road facing to Kai Tak Development area. 220V power supply is needed for 24-hour TSP monitor with size 0.5m (L) x 0.5m (W) x 1.4m (H). We will pay for the electricity. Similar setup photo records are shown in Figure 1 and Figure 2 for your kindly reference. The expect of impact dust measurement setup photo records are shown in Figure 3 and the power supply will come from the roof of the socket (Figure 4) for reference. Our technician will stay at the measurement point for 1-hour TSP and 30-minute noise measurement.

Should you have any enquires regarding the measurement, please do not hesitate to contact [redacted] at [redacted]

Thank you for your kind attention and I look forward to receiving your favourable reply soon.

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Appendix D – Environmental monitoring schedules

Contract No. EDO 15/2018 Environmental Monitoring at Kai Tak Development Stage 4 Infrastructure at the former runway and south apron
Environmental Monitoring and Weekly Site Inspection Schedule for November 2023

November 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 Weekly Site Inspection 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	3	4
5	6	7 Weekly Site Inspection + SSMC meeting	8 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	9	10	11
12	13	14 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	15	16 Weekly Site Inspection	17	18
19	20 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	21	22	23 Weekly Site Inspection	24	25 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7
26	27	28	29	30 Weekly Site Inspection		

NOTE:

- Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A) and M11), the premises owner rejected ET to conduct impact monitoring starting from 1 Sept 2022. No 24-TSP monitoring will be conducted at AM4(A) while 1-hr TSP at AM4(A) and 30-min noise monitoring at M11 will be conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for AM4(A) and M11 are confirmed.

Air Quality Monitoring Station

AM3 - Sky Tower

AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

AM7 - Hong Kong Children's Hospital

Noise Quality Monitoring Station

M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

M12 - Hong Kong Children's Hospital

Contract No. EDO 15/2018 Environmental Monitoring at Kai Tak Development Stage 4 Infrastructure at the former runway and south apron
Tentative Environmental Monitoring and Weekly Site Inspection Schedule for December 2023

December 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	2
3	4	5	6	7 Weekly Site Inspection 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	8	9
10	11	12 Weekly Site Inspection+ SSMC meeting	13 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	14	15	16
17	18	19 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	20	21 Weekly Site Inspection	22	23 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7
24	25	26	27	28 Weekly Site Inspection	29 24-hr TSP: AM3, AM4(A), AM7 1-hr X3 TSP: AM3, AM4(A), AM7 30-min Noise: M11, M12	30
31						

NOTE:

- 1) Site inspection schedule and Impact monitoring schedule may be changed due to unforeseen circumstance (e.g. adverse weather).
- 2) Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A) and M11), the premises owner rejected ET to conduct impact monitoring starting from 1 Sept 2022. No 24-TSP monitoring will be conducted at AM4(A) while 1-hr TSP at AM4(A) and 30-min noise monitoring at M11 will be conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for AM4(A) and M11 are confirmed.

Air Quality Monitoring Station

AM3 - Sky Tower

AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

AM7 - Hong Kong Children's Hospital

Noise Quality Monitoring Station

M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

M12 - Hong Kong Children's Hospital

Appendix E – Photographic records

Impact TSP Monitoring



Measurement setup at AM3



Measurement setup at AM4(A)

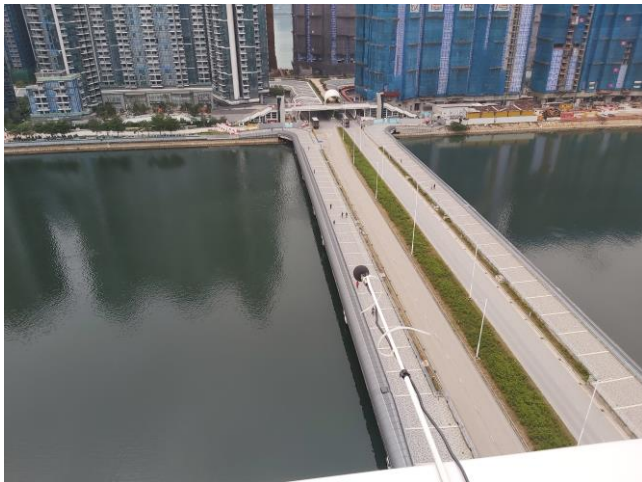


Measurement setup at AM7

Impact Noise Monitoring



Measurement setup at M11



Measurement setup at M12



Weather Station at the rooftop of Hong Kong Children's Hospital

**Appendix F – Calibration certificates, catalogue of air quality
monitoring equipment**

Catalogue of High Volume Sampler (HVS)



TSP MFC

Total Suspended Particulate, Mass Flow Controlled



MFC TSP
Ambient Air Sampler

The TE-5170 is a high volume ambient Total Suspended Particulate (TSP) air sampler featuring a mass flow controller (MFC) for accurate and consistent particulate sampling. The mass flow controller adjust the motor speed as the filter media collects particulate to maintain a constant flow rate throughout the entire sample duration. The system utilizes a stainless steel filter holder for use with standard 8" x 10" filter paper. The anodized aluminum shelter and robust electrical components allow the system to operate a continuous 24 hour sample.

ABOUT US: Tisch Environmental Inc. Tisch Environmental is the benchmark for high volume air sampling, particulate, metals, volatiles, and specialty monitoring equipment. Since the company's inception in 1953 as General Metal Works, our product line has expanded from the first high volume air sampler to include high-tech and custom samplers. Our clients are professionals from every sector of the regulatory and industrial markets.

- ✔ Meets EPA CFR, Appendix B to Part 50
- ✔ Total Suspended Particulate(TSP)
- ✔ Mass Flow Controlled
- ✔ 7-Day Mechanical Timer
- ✔ Elapsed Time Indicator
- ✔ Aluminum Outdoor Shelter
- ✔ Brush Style Motor
- ✔ Dickson Chart Recorder, 24 Hour
- ✔ Stainless Steel Filter Holder
- ✔ 36-60 CFM
- ✔ Made In USA

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www.tischinternational.com



www.tisch-env.com

Tisch Environmental
145 S. Miami Ave
Cleveland, OH 45002
513-467-9000
sales@tisch-env.com



TSP MFC

MFC TSP Ambient Air Sampler

General System Specifications

Particulate Size:Total Suspended Particulate (TSP)
EPA Designation: CFR 40 Part 50 Appendix B
Flow Controller: Mass Flow Controller
Motor Style:Brush Style Motor Assembly
Pressure Recorder:Dickson Chart Recorder, 24 hour
Timer:7 Day Mechanical
Elapsed Time Indicator:Mechanical, Hours and Tenths
Flow Range:39-60CFM, 1.09M³M-1.68M³M
Housing:Anodized Aluminum
Filter Holder:Stainless Steel, 8" x 10"
4" Recorder Charts: Box of 100
Filter Holder: 8" x 10" Stainless Steel with hold down frame

Applications

US EPA Reference Method Sampling, CFR Appendix J Part 50 Regulatory Compliance
 Institutional Studies
 Construction Sites
 Bridge and Water Tower Painting Sites
 Fence Line Monitoring
 Industrial Monitoring
 Landfill Monitoring
 Public Health Applications

Optional Equipment

TE-3000 Filter Holder Cartridge
 TE-G653 8" x 10" Glass Fiber Filter Media
 TE-33384 Motor Brush Set (110volt)
 TE-33378 Motor Brush Set (220volt)
 TE-116311 Replacement Motor (110volt)
 TE-116312 Replacement Motor (220volt)
 TE-106 Recorder Charts
 TE-160 Recorder Pen Points
 TE-5018 Gasket 8" x 10"

Available Models

TE-5170 TSP MFC, 110 Volt 60 Hertz, 8 Amps
 TE-5170X TSP MFC, 220 Volt 50 Hertz 4 Amps
 TE-5170XZ TSP MFC, 220 Volts 60 Hertz, 4 Amps

Calibration Equipment

TE-5028 -Variable Flow Calibration Kit
 TE-HVC-V Xcalibrator HiVol Calibrator

Physical Specifications

Weight: 75lbs, Shelter
Shipping Dimensions: 46"W x 23"L x 20" H, Shelter
 19"W x 19"L x 20"H, Lid
Assembled Dimensions: 28"W x 28"L x 61"H

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www.tischinternational.com

www.tisch-env.com



Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023101401 Date of calibration : 14/10/2023
 Location : Sky Tower Sampler : TE-5170X

Calibration Data

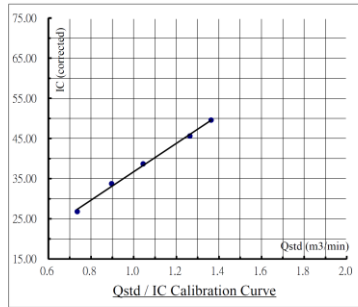
Ambient barometric pressure, Pa = 759.8 (mmHg) Ambient temperature, Ta = 303.15 (deg K)
 Qstd Slope, m = 2.01424 Qstd Intercept, b = 0.020850

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	7.80	1.364	50.0	49.57
13	6.70	1.264	46.0	45.60
10	4.60	1.045	39.0	38.66
7	3.40	0.897	34.0	33.71
5	2.30	0.736	27.0	26.77

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [(1) (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	35.330	1.3703	0.9983



Calibration curve requirements : (A). $r > 0.990$; (B). At least 3 Qstd numbers are in the TSP range (1.1 - 1.7 m³ / min).

Remark : $Qstd (m^3 / min) = 1/m [\text{Sqrt} (H_2O (Pa / 760) (298 / Ta)) - b]$.
 $IC (corrected) = I [\text{Sqrt} ((Pa / 760) (298 / Ta))]$.
 $FLOW (corrected) = \text{Sqrt} (FLOW (mano) (Pa / 760) (298 / Ta))$.

Calibrated by : Poon Tsz Wing Checked by : Wong Yin Tong
 Name : (Poon Tsz Wing) Name : (Wong Yin Tong)

Form No. INS-HVS-CAL.d4 16/01/2020

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023101403 Date of calibration : 14/10/2023
 Location : Hong Kong Children's Hospital Sampler : TE-5170X

Calibration Data

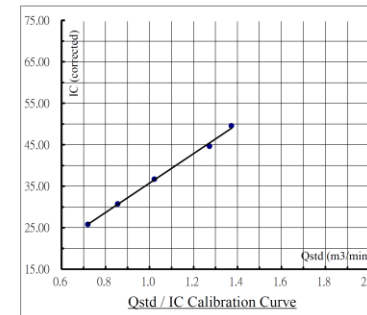
Ambient barometric pressure, Pa = 759.8 (mmHg) Ambient temperature, Ta = 303.15 (deg K)
 Qstd Slope, m = 2.01424 Qstd Intercept, b = 0.020850

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	7.90	1.373	50.0	49.57
13	6.80	1.273	45.0	44.61
10	4.40	1.022	37.0	36.68
7	3.10	0.856	31.0	30.73
5	2.20	0.720	26.0	25.78

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [(1) (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	35.464	0.2790	0.9986



Calibration curve requirements : (A). $r > 0.990$; (B). At least 3 Qstd numbers are in the TSP range (1.1 - 1.7 m³ / min).

Remark : $Qstd (m^3 / min) = 1/m [\text{Sqrt} (H_2O (Pa / 760) (298 / Ta)) - b]$.
 $IC (corrected) = I [\text{Sqrt} ((Pa / 760) (298 / Ta))]$.
 $FLOW (corrected) = \text{Sqrt} (FLOW (mano) (Pa / 760) (298 / Ta))$.

Calibrated by : Poon Tsz Wing Checked by : Wong Yin Tong
 Name : (Poon Tsz Wing) Name : (Wong Yin Tong)

Form No. INS-HVS-CAL.d4 16/01/2020

Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023061901 Date of calibration : 19/06/2023

Model no : GS2310 Serial number : 10346

Calibration Data

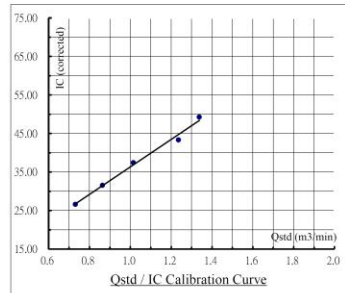
Ambient barometric pressure, Pa = 755.3 (mmHg) Ambient temperature, Ta = 305.25 (deg K)
 Qstd Slope, m = 2.01424 Qstd Intercept, b = 0.020850

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	7.60	1.338	50.0	49.25
13	6.50	1.236	44.0	43.34
10	4.40	1.015	38.0	37.43
7	3.20	0.864	32.0	31.52
5	2.30	0.731	27.0	26.60

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [I (1 + \sqrt{ (P_{av} / 760) (298 / T_{av}) }) - b]$	35.675	0.6397	0.9953



Calibration curve requirements : (A). $r > 0.990$; (B). At least 3 Qstd numbers are in the TSP range (1.1 - 1.7 m³ / min).

Remark : $Qstd (m^3 / min) = 1/m [\text{Sqrt} (H_2O (Pa / 760) (298 / Ta)) - b]$.

$IC (\text{corrected}) = 1 [\text{Sqrt} ((Pa / 760) (298 / Ta))]$.

$FLOW (\text{corrected}) = \text{Sqrt} (FLOW (\text{mano}) (Pa / 760) (298 / Ta))$.

Calibrated by :

Checked by :

Name : (Poon Tsz Wing)

Name : (Wong Yin Tong)

Form No: DSHVS-CAL-01 16-01-2020

Orifice Transfer Standard Certification Worksheet TE-5025A



RECALIBRATION DUE DATE:
May 17, 2024

Certificate of Calibration

Calibration Certification Information			
Cal. Date: May 17, 2023	Rootsmer S/N: 438320	Ta: 297 °K	
Operator: Jim Tisch		Pa: 745.0 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 0006		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4270	3.2	2.00
2	3	4	1	1.0000	6.4	4.00
3	5	6	1	0.8940	7.9	5.00
4	7	8	1	0.8490	8.8	5.50
5	9	10	1	0.6990	12.8	8.00

Data Tabulation						
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H (\frac{Pa}{Pstd}) (\frac{Tstd}{Ta})}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta / Pa)}$ (y-axis)	
0.9793	0.6863	1.4025	0.9957	0.6978	0.8929	
0.9751	0.9751	1.9835	0.9914	0.9914	1.2628	
0.9731	1.0885	2.2176	0.9894	1.1067	1.4119	
0.9719	1.1448	2.3258	0.9882	1.1639	1.4808	
0.9666	1.3829	2.8051	0.9828	1.4060	1.7859	
QSTD	m= 2.01424		QA	m= 1.26128		
	b= 0.02085			b= 0.01328		
	r= 0.99999			r= 0.99999		

Calculations	
$Vstd = \Delta Vol / ((Pa - \Delta P) / Pstd) (Tstd / Ta)$	$Va = \Delta Vol / ((Pa - \Delta P) / Pa)$
$Qstd = Vstd / \Delta Time$	$Qa = Va / \Delta Time$
For subsequent flow rate calculations:	
$Qstd = 1/m \left(\sqrt{\Delta H (\frac{Pa}{Pstd}) (\frac{Tstd}{Ta})} - b \right)$	$Qa = 1/m \left(\sqrt{\Delta H (Ta / Pa)} - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmer 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

Tisch Environmental, Inc.
 145 South Miami Avenue
 Village of Cleves, OH 45002

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

Catalogue of Dust Meter (TSI Sidepak AM510)

The SidePak AM510 monitor's easy-to-read display shows your data as both real-time aerosol mass-concentration and 8-hour time-weighted average (TWA). With its convenient data logging and long battery life, the AMS10 is also ideal for extended sampling. The easy-to-use TrakPro Data Analysis Software lets you create effective graphs and reports.

User Friendly

- + Small, lightweight and quiet to maximize worker acceptance
- + Rugged design with secure belt clip
- + Easy-to-understand user interface with only four keys
- + Lockable keypad prevents tampering while sampling
- + User-adjustable sample flow rate
- + Define, label and store multiple calibration constants
- + Easy-to-read LCD display
- + Convenient, threaded tripod socket accommodates area sampling

Advanced Features

- + Smart Battery Management System provides precise run time information, maximizes battery capacity and speeds charging
- + Integrated pump allows use of size-selective aerosol inlet conditioners
- + Built-in impactors let you choose "none," 1.0, 2.5 or 10-micron cut off
- + 10-mm Dorr-Oliver cyclone for respirable sampling
- + Display shows real-time concentrations (mg/m³) and "on-the-fly" TWA as you data log
- + Display statistics: max, min and average readings, elapsed time and 8-hour TWA

Quick and Easy Reports

- + Convenient preprogramming for occupational exposure sampling
- + Data log for long periods and store multiple tests
- + Analyze data, print graphs and create reports with TrakPro Data Analysis Software
- + USB port lets you conveniently connect to your computer

Power to Spare

- + Long-lasting NiMH rechargeable battery packs eliminate "memory" issues
- + Choice of rechargeable NiMH smart battery packs or AA-cell pack

Model AMS10

SidePak Personal Aerosol Monitor

Sensitivity

Sensor Type 90° light scattering, 670 nm laser diode
 Aerosol Concentration Range 0.001 to 20 mg/m³ (calibrated to respirable fraction of ISO 12103-1, A1 test dust)
 Particle Size Range 0.1 to 10 micrometer (µm)
 Minimum Resolution 0.001 mg/m³
 Zero stability ±0.001 mg/m³ over 24 hours using 10-second time-constant
 Temperature Coefficient Approximately +0.0005 mg/m³ per °C (for variations from temperature at which instrument was last zeroed)

Flow Rate

Range User-adjustable, 0.7 to 1.8 liters/min (L/min)

Temperature Range

Operating Range 32 to 120°F (0 to 50°C)
 Storage Range -4 to 140°F (-20 to 60°C)

Operational Humidity

0 to 95% RH, non-condensing

Time Constant (LCD display)

Range User-adjustable, 1 to 60 seconds

Data Logging

Data Points Approx. 31,000
 Logging Interval User-adjustable, 1 second to 1 hour

User-Select Calibration Factors

Factory Setting 1.0 (non-adjustable)
 User-defined Settings 3, with user-defined labels
 Range 0.1 to 10.0, user-adjustable

Physical

External Dimensions 4.2 x 3.7 x 2.8 in. (106 x 92 x 70 mm) with 801723, 801724, 801729 or 801743 battery
 5.1 x 3.7 x 2.8 in. (130 x 92 x 70 mm) with 801708, 801722, 801728, 801735, or 801736 battery
 Weight 16 oz (0.46 kg) with 801723, 801724, 801729 or 801743 battery
 19 oz (0.54 kg) with 801708, 01722, 801728, 801735, or 801736 battery
 Display 2 line x 12 character LCD
 Tripod Socket 1/4"-20 female thread

Power Supply/Charger (P/N 2613210)

Input Voltage Range 100 to 240 VAC, 50 to 60 Hz
 Output Voltage 9 VDC @ 1.0 A

Maintenance

Factory Clean/Calibrate Recommended annually
 User Zero Calibration Before each use
 User Flow Calibration As needed

Communications Interface

Type USB 1.1
 Connector, Instrument USB Mini-B (socket)

Minimum Computer Requirements for TrakPro™ Data Analysis Software

Communications Port Universal Serial Bus (USB) v 1.1 or higher
 Operating System Microsoft Windows® XP, or 7 (32-bit or 64-bit) operating systems

Battery Performance

Battery Options	Charge Time (hrs)*	Intrinsic Safety Rating	Run Time (hrs @ 1.7 L/min)
1600 mAh NiMH Pack, 4.8 V (P/N 801723)	3.0	No	7.1
1650 mAh NiMH Pack, 4.8V (P/N 801724, 801729 or 801743)	3.5	CSA**	7.5
2700 mAh NiMH Pack, 4.8 V (P/N 801722 or 801728)	5.5	No	12.0
2700 mAh NiMH Pack, 4.8 V (P/N 801735)	5.5	No	12.0
6-Cell AA-size Alkaline Pack*** (P/N 801708 or 801736 with six user-supplied AA cells)	N/A	No	22.5

*Of a fully depleted battery
 **All dust plugs and dust gaskets must be installed.
 ***Using Energizer AA-size, E91 alkaline batteries.

Battery Level Indicator

The Smart Battery Management System™ technology utilizes a built-in "gauge" in the SidePak™ battery packs. The gauge monitors battery capacity and calculates run time information by dividing capacity of the battery (mAh) by the instantaneous current consumed by the instrument (mA). This calculation is correct for current operating conditions and can change due to current (mA) consumption or changes in battery capacity.



Calibration Certificate of Dust Meter (TSI Sidepak AM510)

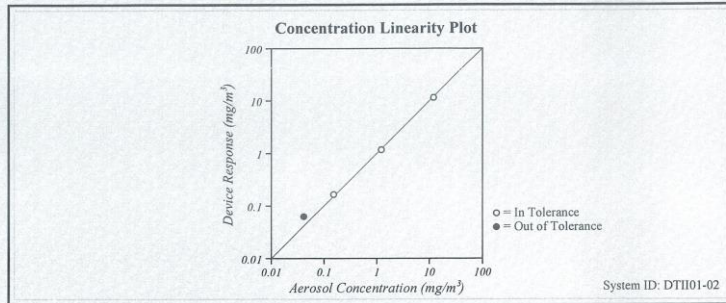


CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions			Model	AM510
Temperature	74.14 (23.4)	°F (°C)	Serial Number	11208032
Relative Humidity	47.6	%RH		
Barometric Pressure	28.96 (980.7)	inHg (hPa)		

As Left In Tolerance
 As Found Out of Tolerance



CONCENTRATION				Unit: mg/m ³			
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	1.205	1.108	1.084-1.326	3	0.041	* 0.059	0.029-0.053
2	0.150	0.156	0.128-0.172	4	11.824	10.777	10.642-13.006

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 4:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E010539	12-05-22	06-30-24	Photometer	E003433	03-21-23	09-30-23
Microbalance	M001324	01-09-23	01-31-25	Pressure	E003511	10-25-22	10-31-23
Flowmeter	E002471	05-22-23	05-31-24	DC Voltage	E003315	01-09-23	01-31-24

Verified

August 8, 2023

Date

Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0220602-1 Report Issue Date 02/06/2023
 Date of performance check 02/06/2023

Objective:

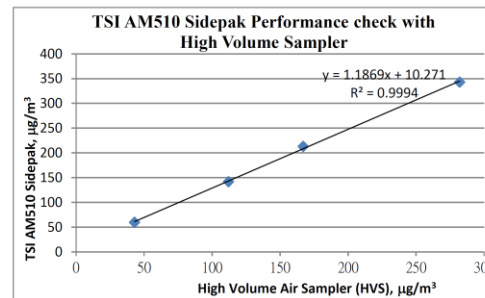
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11208032
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

Results:

Equipment	Measurement Result, µg/m ³		
TSI AM510 Sidepak	60	142	213
High Volume Air Sampler (HVS)	43	112	167



Tested by :

Name : (Poon Tsz Wing)

Checked by :

Name : (Wong Yin Tong)

Form No. ENV CAL SAMPLER CCI d412/12/2003

Calibration Certificate of Dust Meter (TSI Sidepak AM510)

CERTIFICATE OF CALIBRATION AND TESTING
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions		Model	AM510
Temperature	74.7 (23.7) °F (°C)	Serial Number	11306015
Relative Humidity	29 %RH		
Barometric Pressure	29.31 (992.6) inHg (hPa)		

As Left In Tolerance
 As Found Out of Tolerance

Concentration Linearity Plot

System ID: DT1101-02

CONCENTRATION				Unit: mg/m ³			
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	1.539	1.465	1.385-1.693	3	0.090	0.092	0.063-0.117
2	0.218	0.221	0.185-0.251	4	10.681	10.742	9.613-11.749

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, AI test dust (Arizona dust). Our calibration ratio is greater than 4:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E003314	01-11-22	01-31-23	Photometer	E003319	08-30-22	02-28-23
Microbalance	M001324	01-29-21	01-31-23	Pressure	E003511	10-26-21	10-31-22
Flowmeter	E004025	06-24-22	06-30-23	DC Voltage	E003315	01-11-22	01-31-23

 Calibrated

September 27, 2022

 Date

Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0230602-3 Report Issue Date 02/06/2023
 Date of performance check 02/06/2023

Objective:

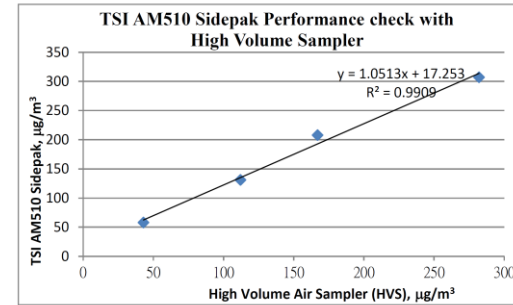
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11306015
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

Result:

Equipment	Measurement Result, µg/m ³			
TSI AM510 Sidepak	58	131	208	307
High Volume Air Sampler (HVS)	43	112	167	282



Tested by: (Poon Tsz Wing) Checked by: (Wong Yin Tong)
 Name: _____ Name: _____

Catalogue of Weather Station

Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations



**6152C
6162C**
Vantage Pro2™

The Vantage Pro2™ (# 6152C) and Vantage Pro2™ Plus (# 6162C) cabled weather stations include two components: the Integrated Sensor Suite (ISS) and the console. The ISS contains the sensor interface module (SIM), rain collector, an anemometer, and a passive radiation shield. The Vantage Pro2 console provides the user interface, data display, and calculations. The Vantage Pro2 Plus weather station includes two additional sensors that are optional on the Vantage Pro2 and purchased separately: the UV Sensor and the Solar Radiation Sensor. The console and ISS are powered by an AC-power adapter connected to the console. Batteries can be installed in the console to provide a backup power supply. Use WeatherLink® to let your weather station interface with a computer, log data, and upload weather information to the Internet. The 6152C and 6162C models rely on passive shielding to reduce solar-radiation induced temperature errors in the outside temperature sensor readings.

Integrated Sensor Suite (ISS)

Operating Temperature	-40° to +150°F (-40° to +65°C)
Non-operating Temperature	-40° to +158°F (-40° to +70°C)
Current Draw	5 mA (average) at 4 to 6 VDC for ISS only. 10 mA average for both console and ISS
Connectors, Sensor	Modular RJ-11
Cable Type	4-conductor, 26 AWG
Cable Length, Anemometer	40' (12 m) (included); 240' (73 m) (maximum recommended)

Note: Maximum displayable wind decreases as the length of cable increases. At 140' (42 m) of cable, the maximum wind speed displayed is 135 mph (60 m/s); at 240' (73 m), the maximum wind speed displayed is 100 mph (34 m/s).

Wind Speed Sensor	Solid state magnetic sensor
Wind Direction Sensor	Wind vane with potentiometer
Rain Collector Type	Tipping bucket, 0.01" per tip (0.2 mm with metric rain adapter), 33.2 in ² (214 cm ²) collection area
Temperature Sensor Type	PN Junction Silicon Diode
Relative Humidity Sensor Type	Film capacitor element
Housing Material	UV-resistant ABS, polypropylene
Sensor Inputs	
RF Filtering	RC low-pass filter on each signal line

ISS Dimensions(not including anemometer or bird spikes):

Vantage Pro2 with Standard Rad Shield	14.0" x 9.4" x 14.5" (356 mm x 239 mm x 368 mm)
Vantage Pro2 with Fan-Aspirated Rad Shield	20.8" x 9.4" x 16.0" (528 mm x 239 mm x 406 mm)
Vantage Pro2 Plus with Standard Rad Shield	14.3" x 9.7" x 14.5" (363 mm x 246 mm x 368 mm)
Vantage Pro2 Plus with Fan-Aspirated Rad Shield	21.1" x 9.7" x 16.0" (536 mm x 246 mm x 406 mm)

DAVIS **® Davis Instruments** 3465 Diablo Ave., Hayward, CA 94545-2778 USA
(510) 732-9229 • FAX (510) 670-0589 • sales@davisinstruments.com • www.davisinstruments.com

DS6152C, 6162C Rev. W 12/7/18
1

7
Vantage Pro2™

Ultra Violet (UV) Radiation Index (requires UV sensor)

Resolution and Units	0.1 Index
Range	0 to 16 Index
Accuracy	±5% of full scale (Reference: Yankee UVB-1 at UV index 10 (Extremely High))
Cosine Response	±4% FS (0° to 90° zenith angle)
Update Interval	50 seconds to 1 minute (5 minutes when dark)
Current Graph Data	Instant Reading and Hourly Average; Daily, Monthly High
Historical Graph Data	Hourly Average, Daily, Monthly Highs
Alarm	High Threshold from Instant Calculation

Wind

Wind Chill (Calculated)	
Resolution and Units	1°F or 1°C (user-selectable); °C is converted from °F and rounded to the nearest 1°C
Range	-110° to +135°F (-79° to +57°C)
Accuracy	±2°F (±1°C) (typical)
Update Interval	10 to 12 seconds
Source	United States National Weather Service (NWS)/NOAA
Equation Used	Osczevski (1995) (adopted by US NWS in 2001)
Variables Used	Instant Outside Temperature and 10-min. Avg. Wind Speed
Current Display Data	Instant Calculation
Current Graph Data	Instant Calculation; Hourly, Daily and Monthly Low
Historical Graph Data	Hourly, Daily and Monthly Lows
Alarm	Low Threshold from Instant Calculation
Wind Direction	
Range	1 - 360°
Display Resolution	16 points (22.5°) on compass rose, 1° in numeric display
Accuracy	±3°
Update Interval	2.5 to 3 seconds
Current Graph Data	Instant Reading (user adjustable); 10-min. Dominant; Hourly, Daily, Monthly Dominant
Historical Graph Data	Past 6 10-min. Dominants on compass rose only; Hourly, Daily, Monthly Dominants
Wind Speed	
Resolution and Units	1 mph, 1 km/h, 0.4 m/s, or 1 knot (user-selectable) Measured in mph; other units are converted from mph and rounded to nearest 1 km/hr, 0.1 m/s, or 1 knot.
Range	0 to 200 mph, 0 to 173 knots, 0 to 89 m/s, 0 to 322 km/h
Update Interval	Instant Reading: 2.5 to 3 seconds, 10-minute Average: 1 minute
Accuracy	±2 mph (2 kts, 3.2 km/h, 0.9 m/s) or ±5%, whichever is greater
Maximum Cable Length	540' (165 m) (Note that maximum wind speed reading decreases as length of cable from anemometer to ISS increases.)
Current Display Data	Instant
Current Graph Data	Instant Reading; 10-minute and Hourly Average; Hourly High; Daily, Monthly and Yearly High with Direction of High
Historical Graph Data	10-min. and Hourly Averages; Hourly Highs; Daily, Monthly and Yearly Highs with Direction of Highs
Alarms	High Thresholds from Instant Reading and 10-minute Average

Calibration Certificate of Weather Station



Cal Lab Limited 校正實驗室有限公司
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,
 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk

Calibration Certificate No.: CC0062308

Information provided by customer

Customer: Castco Testing Centre Limited
 Address: 33, On Kui Street, Fanling, N.T.

Equipment identification provided by customer

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.:
Weather Station	Davis Vantage PRO 2	6152CEU	AZ170710016	AAST-WS-03

Certificate Information

Date of Receipt:	4 August 2023	Calibration Condition:	24.3°C, 52%RH, 1002hPa
Date of Calibration:	14 August 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	JJF 1183-2007, JJF 1076-2020, SOP-116	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Platinum resistance thermometer	KPPRHT-A-1	KCI I-1095, KCI P-1095	9 November 2024
Humidity sensor	KPPRHT-A-1	KCI I-1095, KCI P-1095	9 November 2024
Hot Wire Anemometer	9535	T95351316004	11 August 2024

- Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
 Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
 Note3: The result 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.
 Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.
 Note5: Calibration item/ parameter marked with * is out of scope of Cal Lab Limited (AZLA 3815.01).

Approved By:


 Warren Yeung

Company Chop:



Certificate Issue Date: 17 August 2023

CT-BEG-04

- The certificate shall not be reproduced except in full, without written approval of Cal Lab Limited
- The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0062308
 Page 1 of 2

Appendix G – Weather information

General Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)	Total Rainfall (mm)
01/11/2023	23.6	29.1	0
02/11/2023	24.4	28.4	0
03/11/2023	24.3	29.1	0
04/11/2023	24.7	29.4	0
05/11/2023	25	30.1	0
06/11/2023	25.3	30.7	0
07/11/2023	25.3	26.8	0
08/11/2023	24.7	26	0
09/11/2023	24.8	27.3	Trace
10/11/2023	25.6	29.3	0
11/11/2023	24.8	26.5	2.5
12/11/2023	22	26.6	0.6
13/11/2023	20.3	25.2	0
14/11/2023	18.9	23.9	0
15/11/2023	20.7	25.2	0
16/11/2023	17.3	24	0
17/11/2023	15.6	21.9	0
18/11/2023	16.6	23	0
19/11/2023	18.5	23.3	0
20/11/2023	19	24.6	0
21/11/2023	20.3	24.6	0
22/11/2023	20.5	25.7	0
23/11/2023	20.5	26.3	0
24/11/2023	21.5	25	0
25/11/2023	20	24.3	0
26/11/2023	19.8	25.3	0
27/11/2023	20.2	26.7	0
28/11/2023	20.2	25.4	Trace
29/11/2023	21.2	24	0.2
30/11/2023	21.9	26	0

NOTE1: The above weather information was obtained from manned weather station of Hong Kong Observatory.

NOTE2: Trace means rainfall less than 0.05 mm

<https://www.hko.gov.hk/en/cis/dailyExtract.htm?y=2023&m=11>

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/11/2023	0:00	0.4	135	02/11/2023	0:00	0.4	135	03/11/2023	0:00	0.4	135	04/11/2023	0:00	0.4	135
01/11/2023	1:00	0.4	112.5	02/11/2023	1:00	0.4	112.5	03/11/2023	1:00	0.4	112.5	04/11/2023	1:00	0.4	112.5
01/11/2023	2:00	0.4	112.5	02/11/2023	2:00	0.4	112.5	03/11/2023	2:00	0.4	112.5	04/11/2023	2:00	0.4	112.5
01/11/2023	3:00	0.4	112.5	02/11/2023	3:00	0.4	112.5	03/11/2023	3:00	0.4	112.5	04/11/2023	3:00	0.4	112.5
01/11/2023	4:00	0.4	135	02/11/2023	4:00	0.4	135	03/11/2023	4:00	0.4	135	04/11/2023	4:00	0.4	135
01/11/2023	5:00	0.4	112.5	02/11/2023	5:00	0.4	112.5	03/11/2023	5:00	0.4	112.5	04/11/2023	5:00	0.4	112.5
01/11/2023	6:00	0.4	112.5	02/11/2023	6:00	0.4	112.5	03/11/2023	6:00	0.4	112.5	04/11/2023	6:00	0.4	112.5
01/11/2023	7:00	0.4	112.5	02/11/2023	7:00	0.4	112.5	03/11/2023	7:00	0.4	112.5	04/11/2023	7:00	0.4	112.5
01/11/2023	8:00	0.4	112.5	02/11/2023	8:00	0.4	112.5	03/11/2023	8:00	0.4	112.5	04/11/2023	8:00	0.4	112.5
01/11/2023	9:00	0.4	315	02/11/2023	9:00	0.4	315	03/11/2023	9:00	0.4	315	04/11/2023	9:00	0.4	315
01/11/2023	10:00	0.4	337.5	02/11/2023	10:00	0.4	337.5	03/11/2023	10:00	0.4	337.5	04/11/2023	10:00	0.4	337.5
01/11/2023	11:00	0.4	112.5	02/11/2023	11:00	0.4	112.5	03/11/2023	11:00	0.4	112.5	04/11/2023	11:00	0.4	112.5
01/11/2023	12:00	0.9	90	02/11/2023	12:00	0.9	90	03/11/2023	12:00	0.9	90	04/11/2023	12:00	0.9	90
01/11/2023	13:00	0.4	112.5	02/11/2023	13:00	0.4	112.5	03/11/2023	13:00	0.4	112.5	04/11/2023	13:00	0.4	112.5
01/11/2023	14:00	0.9	112.5	02/11/2023	14:00	0.9	112.5	03/11/2023	14:00	0.9	112.5	04/11/2023	14:00	0.9	112.5
01/11/2023	15:00	0.9	90	02/11/2023	15:00	0.9	90	03/11/2023	15:00	0.9	90	04/11/2023	15:00	0.9	90
01/11/2023	16:00	0.4	90	02/11/2023	16:00	0.4	90	03/11/2023	16:00	0.4	90	04/11/2023	16:00	0.4	90
01/11/2023	17:00	0.4	112.5	02/11/2023	17:00	0.4	112.5	03/11/2023	17:00	0.4	112.5	04/11/2023	17:00	0.4	112.5
01/11/2023	18:00	0.9	112.5	02/11/2023	18:00	0.9	112.5	03/11/2023	18:00	0.9	112.5	04/11/2023	18:00	0.9	112.5
01/11/2023	19:00	1.3	90	02/11/2023	19:00	1.3	90	03/11/2023	19:00	1.3	90	04/11/2023	19:00	1.3	90
01/11/2023	20:00	1.3	90	02/11/2023	20:00	1.3	90	03/11/2023	20:00	1.3	90	04/11/2023	20:00	1.3	90
01/11/2023	21:00	0.9	112.5	02/11/2023	21:00	0.9	112.5	03/11/2023	21:00	0.9	112.5	04/11/2023	21:00	0.9	112.5
01/11/2023	22:00	0.9	112.5	02/11/2023	22:00	0.9	112.5	03/11/2023	22:00	0.9	112.5	04/11/2023	22:00	0.9	112.5
01/11/2023	23:00	0.9	337.5	02/11/2023	23:00	0.9	337.5	03/11/2023	23:00	0.9	337.5	04/11/2023	23:00	0.9	337.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
05/11/2023	0:00	0.4	112.5	06/11/2023	0:00	0.9	157.5	07/11/2023	0:00	0.4	157.5	08/11/2023	0:00	0.9	157.5
05/11/2023	1:00	1.3	112.5	06/11/2023	1:00	0.9	22.5	07/11/2023	1:00	0.9	157.5	08/11/2023	1:00	0.9	22.5
05/11/2023	2:00	0.9	135	06/11/2023	2:00	0.4	22.5	07/11/2023	2:00	0.9	22.5	08/11/2023	2:00	0.4	22.5
05/11/2023	3:00	0.9	135	06/11/2023	3:00	0.4	45	07/11/2023	3:00	0.4	22.5	08/11/2023	3:00	0.4	45
05/11/2023	4:00	1.3	112.5	06/11/2023	4:00	0.9	135	07/11/2023	4:00	0.4	45	08/11/2023	4:00	0.9	135
05/11/2023	5:00	1.3	112.5	06/11/2023	5:00	0.9	112.5	07/11/2023	5:00	0.9	135	08/11/2023	5:00	0.9	112.5
05/11/2023	6:00	0.9	90	06/11/2023	6:00	1.3	135	07/11/2023	6:00	0.9	112.5	08/11/2023	6:00	1.3	135
05/11/2023	7:00	0.9	112.5	06/11/2023	7:00	1.3	135	07/11/2023	7:00	1.3	135	08/11/2023	7:00	1.3	135
05/11/2023	8:00	0.4	90	06/11/2023	8:00	0.9	22.5	07/11/2023	8:00	1.3	135	08/11/2023	8:00	0.9	22.5
05/11/2023	9:00	0.4	90	06/11/2023	9:00	0.4	112.5	07/11/2023	9:00	0.9	22.5	08/11/2023	9:00	0.4	112.5
05/11/2023	10:00	1.3	67.5	06/11/2023	10:00	0.4	112.5	07/11/2023	10:00	0.4	112.5	08/11/2023	10:00	0.4	112.5
05/11/2023	11:00	0.9	157.5	06/11/2023	11:00	1.3	112.5	07/11/2023	11:00	0.4	112.5	08/11/2023	11:00	1.3	112.5
05/11/2023	12:00	0.4	337.5	06/11/2023	12:00	0.9	112.5	07/11/2023	12:00	1.3	112.5	08/11/2023	12:00	0.9	112.5
05/11/2023	13:00	0.9	22.5	06/11/2023	13:00	0.4	135	07/11/2023	13:00	0.9	112.5	08/11/2023	13:00	0.4	315
05/11/2023	14:00	0.9	22.5	06/11/2023	14:00	0.4	67.5	07/11/2023	14:00	0.4	315	08/11/2023	14:00	0.4	67.5
05/11/2023	15:00	0.9	22.5	06/11/2023	15:00	1.3	112.5	07/11/2023	15:00	0.4	67.5	08/11/2023	15:00	0.9	112.5
05/11/2023	16:00	0.4	22.5	06/11/2023	16:00	0.9	135	07/11/2023	16:00	1.3	112.5	08/11/2023	16:00	0.9	135
05/11/2023	17:00	0.4	90	06/11/2023	17:00	0.4	112.5	07/11/2023	17:00	0.9	135	08/11/2023	17:00	0.4	112.5
05/11/2023	18:00	0.4	90	06/11/2023	18:00	0.9	112.5	07/11/2023	18:00	0.4	112.5	08/11/2023	18:00	0.9	112.5
05/11/2023	19:00	0.4	90	06/11/2023	19:00	0.9	90	07/11/2023	19:00	0.9	112.5	08/11/2023	19:00	0.9	90
05/11/2023	20:00	0.9	247.5	06/11/2023	20:00	0.9	292.5	07/11/2023	20:00	0.9	90	08/11/2023	20:00	0.9	67.5
05/11/2023	21:00	0.4	180	06/11/2023	21:00	0.9	112.5	07/11/2023	21:00	0.9	67.5	08/11/2023	21:00	0.9	112.5
05/11/2023	22:00	0.4	337.5	06/11/2023	22:00	0.9	337.5	07/11/2023	22:00	0.9	112.5	08/11/2023	22:00	0.9	337.5
05/11/2023	23:00	0.4	337.5	06/11/2023	23:00	0.4	247.5	07/11/2023	23:00	0.9	337.5	08/11/2023	23:00	0.4	247.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
09/11/2023	0:00	0.9	157.5	10/11/2023	0:00	0.9	157.5	11/11/2023	0:00	0.9	157.5	12/11/2023	0:00	0.9	157.5
09/11/2023	1:00	0.9	22.5	10/11/2023	1:00	0.9	22.5	11/11/2023	1:00	0.9	22.5	12/11/2023	1:00	0.9	22.5
09/11/2023	2:00	0.4	22.5	10/11/2023	2:00	0.4	22.5	11/11/2023	2:00	0.4	22.5	12/11/2023	2:00	0.4	22.5
09/11/2023	3:00	0.4	45	10/11/2023	3:00	0.4	45	11/11/2023	3:00	0.4	45	12/11/2023	3:00	0.4	45
09/11/2023	4:00	0.9	135	10/11/2023	4:00	0.9	135	11/11/2023	4:00	0.9	135	12/11/2023	4:00	0.9	135
09/11/2023	5:00	0.9	112.5	10/11/2023	5:00	0.9	112.5	11/11/2023	5:00	0.9	112.5	12/11/2023	5:00	0.9	112.5
09/11/2023	6:00	1.3	135	10/11/2023	6:00	1.3	135	11/11/2023	6:00	1.3	135	12/11/2023	6:00	1.3	135
09/11/2023	7:00	1.3	135	10/11/2023	7:00	1.3	135	11/11/2023	7:00	1.3	135	12/11/2023	7:00	0.4	135
09/11/2023	8:00	0.9	22.5	10/11/2023	8:00	0.9	22.5	11/11/2023	8:00	0.9	22.5	12/11/2023	8:00	0.4	22.5
09/11/2023	9:00	0.4	112.5	10/11/2023	9:00	0.4	112.5	11/11/2023	9:00	0.4	112.5	12/11/2023	9:00	0.9	112.5
09/11/2023	10:00	0.4	112.5	10/11/2023	10:00	0.4	112.5	11/11/2023	10:00	0.9	112.5	12/11/2023	10:00	0.4	112.5
09/11/2023	11:00	1.3	112.5	10/11/2023	11:00	1.3	112.5	11/11/2023	11:00	1.3	112.5	12/11/2023	11:00	1.3	112.5
09/11/2023	12:00	0.9	112.5	10/11/2023	12:00	0.9	112.5	11/11/2023	12:00	0.9	112.5	12/11/2023	12:00	0.9	112.5
09/11/2023	13:00	0.4	315	10/11/2023	13:00	0.4	315	11/11/2023	13:00	0.4	315	12/11/2023	13:00	0.4	315
09/11/2023	14:00	0.4	67.5	10/11/2023	14:00	0.4	67.5	11/11/2023	14:00	0.4	67.5	12/11/2023	14:00	0.4	67.5
09/11/2023	15:00	1.3	112.5	10/11/2023	15:00	1.3	112.5	11/11/2023	15:00	1.3	112.5	12/11/2023	15:00	0.4	112.5
09/11/2023	16:00	0.9	135	10/11/2023	16:00	0.9	135	11/11/2023	16:00	0.9	135	12/11/2023	16:00	0.9	135
09/11/2023	17:00	0.4	112.5	10/11/2023	17:00	0.4	112.5	11/11/2023	17:00	0.4	112.5	12/11/2023	17:00	0.4	112.5
09/11/2023	18:00	0.9	112.5	10/11/2023	18:00	0.9	112.5	11/11/2023	18:00	0.9	112.5	12/11/2023	18:00	0.9	112.5
09/11/2023	19:00	0.9	90	10/11/2023	19:00	0.9	90	11/11/2023	19:00	1.3	90	12/11/2023	19:00	0.9	90
09/11/2023	20:00	0.9	292.5	10/11/2023	20:00	0.9	292.5	11/11/2023	20:00	0.9	292.5	12/11/2023	20:00	0.9	292.5
09/11/2023	21:00	0.9	112.5	10/11/2023	21:00	0.9	112.5	11/11/2023	21:00	0.9	112.5	12/11/2023	21:00	0.9	112.5
09/11/2023	22:00	0.9	337.5	10/11/2023	22:00	0.9	337.5	11/11/2023	22:00	0.9	337.5	12/11/2023	22:00	0.9	337.5
09/11/2023	23:00	0.4	247.5	10/11/2023	23:00	0.4	247.5	11/11/2023	23:00	0.4	247.5	12/11/2023	23:00	0.4	247.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
13/11/2023	0:00	0.9	157.5	14/11/2023	0:00	0.4	157.5	15/11/2023	0:00	1.3	45	16/11/2023	0:00	0.9	315
13/11/2023	1:00	0.9	22.5	14/11/2023	1:00	0.4	22.5	15/11/2023	1:00	1.3	112.5	16/11/2023	1:00	0.9	112.5
13/11/2023	2:00	0.4	22.5	14/11/2023	2:00	0.4	22.5	15/11/2023	2:00	0.9	112.5	16/11/2023	2:00	0.9	292.5
13/11/2023	3:00	0.4	45	14/11/2023	3:00	0.9	45	15/11/2023	3:00	1.3	112.5	16/11/2023	3:00	0.9	67.5
13/11/2023	4:00	0.9	135	14/11/2023	4:00	0.4	135	15/11/2023	4:00	1.3	67.5	16/11/2023	4:00	0.9	270
13/11/2023	5:00	0.9	112.5	14/11/2023	5:00	0.4	112.5	15/11/2023	5:00	1.8	135	16/11/2023	5:00	0.9	315
13/11/2023	6:00	0.4	135	14/11/2023	6:00	0.9	135	15/11/2023	6:00	0.9	67.5	16/11/2023	6:00	1.3	67.5
13/11/2023	7:00	0	135	14/11/2023	7:00	0.4	135	15/11/2023	7:00	1.3	112.5	16/11/2023	7:00	0.9	270
13/11/2023	8:00	0	22.5	14/11/2023	8:00	0.9	22.5	15/11/2023	8:00	0.9	112.5	16/11/2023	8:00	0.9	292.5
13/11/2023	9:00	0	112.5	14/11/2023	9:00	0.4	45	15/11/2023	9:00	0.4	135	16/11/2023	9:00	0.9	135
13/11/2023	10:00	0	112.5	14/11/2023	10:00	0.4	135	15/11/2023	10:00	0.4	135	16/11/2023	10:00	0.9	112.5
13/11/2023	11:00	0	112.5	14/11/2023	11:00	0.4	202.5	15/11/2023	11:00	0.4	135	16/11/2023	11:00	0.9	135
13/11/2023	12:00	0.4	112.5	14/11/2023	12:00	0.4	202.5	15/11/2023	12:00	0.9	67.5	16/11/2023	12:00	1.3	112.5
13/11/2023	13:00	0.4	315	14/11/2023	13:00	0.4	135	15/11/2023	13:00	0.9	157.5	16/11/2023	13:00	0.9	135
13/11/2023	14:00	0.4	67.5	14/11/2023	14:00	0.4	112.5	15/11/2023	14:00	0.9	67.5	16/11/2023	14:00	1.3	67.5
13/11/2023	15:00	1.3	112.5	14/11/2023	15:00	0.4	112.5	15/11/2023	15:00	0.4	112.5	16/11/2023	15:00	1.3	157.5
13/11/2023	16:00	0.9	135	14/11/2023	16:00	0.9	112.5	15/11/2023	16:00	0.9	112.5	16/11/2023	16:00	1.3	135
13/11/2023	17:00	0.4	112.5	14/11/2023	17:00	0.9	135	15/11/2023	17:00	0	22.5	16/11/2023	17:00	1.3	112.5
13/11/2023	18:00	0.4	112.5	14/11/2023	18:00	0.9	45	15/11/2023	18:00	0.4	45	16/11/2023	18:00	0.9	112.5
13/11/2023	19:00	0.9	90	14/11/2023	19:00	0.9	337.5	15/11/2023	19:00	0.4	315	16/11/2023	19:00	0.9	135
13/11/2023	20:00	0.9	292.5	14/11/2023	20:00	0.9	247.5	15/11/2023	20:00	0.4	112.5	16/11/2023	20:00	0.9	112.5
13/11/2023	21:00	0.4	112.5	14/11/2023	21:00	0.4	112.5	15/11/2023	21:00	0.4	135	16/11/2023	21:00	0.9	135
13/11/2023	22:00	0.4	337.5	14/11/2023	22:00	0.4	337.5	15/11/2023	22:00	0.4	112.5	16/11/2023	22:00	0.9	135
13/11/2023	23:00	0.4	247.5	14/11/2023	23:00	0.9	247.5	15/11/2023	23:00	0.4	157.5	16/11/2023	23:00	0.9	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/11/2023	0:00	0.9	337.5	18/11/2023	0:00	1.3	112.5	19/11/2023	0:00	0	22.5	20/11/2023	0:00	1.3	112.5
17/11/2023	1:00	0.9	45	18/11/2023	1:00	0.9	112.5	19/11/2023	1:00	0	315	20/11/2023	1:00	1.3	112.5
17/11/2023	2:00	1.3	337.5	18/11/2023	2:00	1.3	112.5	19/11/2023	2:00	0.4	45	20/11/2023	2:00	0.4	90
17/11/2023	3:00	0.4	22.5	18/11/2023	3:00	0.9	112.5	19/11/2023	3:00	0.9	22.5	20/11/2023	3:00	0.4	135
17/11/2023	4:00	0.9	337.5	18/11/2023	4:00	0.9	67.5	19/11/2023	4:00	0.9	292.5	20/11/2023	4:00	0.4	112.5
17/11/2023	5:00	0.9	45	18/11/2023	5:00	0.9	112.5	19/11/2023	5:00	0.9	67.5	20/11/2023	5:00	0.4	112.5
17/11/2023	6:00	1.3	90	18/11/2023	6:00	0.4	337.5	19/11/2023	6:00	0.9	292.5	20/11/2023	6:00	0.9	135
17/11/2023	7:00	1.3	45	18/11/2023	7:00	0.9	67.5	19/11/2023	7:00	0.9	112.5	20/11/2023	7:00	1.3	90
17/11/2023	8:00	1.3	112.5	18/11/2023	8:00	1.3	67.5	19/11/2023	8:00	0.9	135	20/11/2023	8:00	1.3	135
17/11/2023	9:00	1.3	45	18/11/2023	9:00	0.9	90	19/11/2023	9:00	0.9	135	20/11/2023	9:00	0.9	135
17/11/2023	10:00	1.3	90	18/11/2023	10:00	0.9	90	19/11/2023	10:00	1.3	135	20/11/2023	10:00	1.3	112.5
17/11/2023	11:00	0.9	67.5	18/11/2023	11:00	0.9	67.5	19/11/2023	11:00	0.9	315	20/11/2023	11:00	0.9	202.5
17/11/2023	12:00	1.3	67.5	18/11/2023	12:00	0.4	112.5	19/11/2023	12:00	1.3	112.5	20/11/2023	12:00	0.4	180
17/11/2023	13:00	1.8	67.5	18/11/2023	13:00	0.9	67.5	19/11/2023	13:00	0.9	135	20/11/2023	13:00	0.4	337.5
17/11/2023	14:00	1.3	67.5	18/11/2023	14:00	1.3	67.5	19/11/2023	14:00	0.4	45	20/11/2023	14:00	0.9	112.5
17/11/2023	15:00	0.9	135	18/11/2023	15:00	0.9	90	19/11/2023	15:00	1.3	337.5	20/11/2023	15:00	0.4	135
17/11/2023	16:00	0.4	135	18/11/2023	16:00	0.9	90	19/11/2023	16:00	1.3	135	20/11/2023	16:00	0.4	135
17/11/2023	17:00	0.4	135	18/11/2023	17:00	0.9	67.5	19/11/2023	17:00	1.3	22.5	20/11/2023	17:00	0.4	135
17/11/2023	18:00	0.9	202.5	18/11/2023	18:00	0.4	112.5	19/11/2023	18:00	0.9	67.5	20/11/2023	18:00	0.4	112.5
17/11/2023	19:00	0.4	202.5	18/11/2023	19:00	0.4	90	19/11/2023	19:00	0.4	112.5	20/11/2023	19:00	0.4	67.5
17/11/2023	20:00	0.4	202.5	18/11/2023	20:00	0.9	112.5	19/11/2023	20:00	0.4	90	20/11/2023	20:00	0.9	337.5
17/11/2023	21:00	0.4	112.5	18/11/2023	21:00	0.9	90	19/11/2023	21:00	0.9	112.5	20/11/2023	21:00	0.9	22.5
17/11/2023	22:00	0.4	45	18/11/2023	22:00	1.3	112.5	19/11/2023	22:00	0.9	90	20/11/2023	22:00	0.9	270
17/11/2023	23:00	0.9	202.5	18/11/2023	23:00	1.3	67.5	19/11/2023	23:00	1.3	112.5	20/11/2023	23:00	0.4	270

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
21/11/2023	0:00	0.9	112.5	22/11/2023	0:00	0.9	315	23/11/2023	0:00	0.9	315	24/11/2023	0:00	0.4	337.5
21/11/2023	1:00	0.4	45	22/11/2023	1:00	0.4	315	23/11/2023	1:00	0.4	315	24/11/2023	1:00	0.9	315
21/11/2023	2:00	0.9	67.5	22/11/2023	2:00	0.9	90	23/11/2023	2:00	0.9	90	24/11/2023	2:00	0.4	315
21/11/2023	3:00	0.4	45	22/11/2023	3:00	0.9	270	23/11/2023	3:00	0.9	270	24/11/2023	3:00	0.9	90
21/11/2023	4:00	0.4	337.5	22/11/2023	4:00	0.4	112.5	23/11/2023	4:00	0.4	112.5	24/11/2023	4:00	0.9	270
21/11/2023	5:00	0.9	337.5	22/11/2023	5:00	1.3	45	23/11/2023	5:00	1.3	45	24/11/2023	5:00	0.4	112.5
21/11/2023	6:00	0.4	337.5	22/11/2023	6:00	0.9	90	23/11/2023	6:00	0.9	90	24/11/2023	6:00	0.4	45
21/11/2023	7:00	0	0	22/11/2023	7:00	0.9	90	23/11/2023	7:00	0.4	90	24/11/2023	7:00	0.9	90
21/11/2023	8:00	0	0	22/11/2023	8:00	0.4	67.5	23/11/2023	8:00	0.4	67.5	24/11/2023	8:00	0.9	90
21/11/2023	9:00	0.4	337.5	22/11/2023	9:00	0.4	90	23/11/2023	9:00	0.4	90	24/11/2023	9:00	0.4	67.5
21/11/2023	10:00	0.4	247.5	22/11/2023	10:00	0.9	45	23/11/2023	10:00	0.9	45	24/11/2023	10:00	0.4	90
21/11/2023	11:00	0.4	337.5	22/11/2023	11:00	0.4	270	23/11/2023	11:00	0.4	270	24/11/2023	11:00	0.9	45
21/11/2023	12:00	0.4	202.5	22/11/2023	12:00	0.4	90	23/11/2023	12:00	0.4	90	24/11/2023	12:00	0.4	270
21/11/2023	13:00	0.4	45	22/11/2023	13:00	0.9	337.5	23/11/2023	13:00	0.9	337.5	24/11/2023	13:00	0.4	90
21/11/2023	14:00	0.9	315	22/11/2023	14:00	0.4	90	23/11/2023	14:00	0.4	90	24/11/2023	14:00	0.9	337.5
21/11/2023	15:00	0.4	0	22/11/2023	15:00	0.4	112.5	23/11/2023	15:00	0.4	112.5	24/11/2023	15:00	0.4	90
21/11/2023	16:00	0.9	315	22/11/2023	16:00	1.3	67.5	23/11/2023	16:00	0.9	67.5	24/11/2023	16:00	0.4	112.5
21/11/2023	17:00	0.9	292.5	22/11/2023	17:00	1.3	112.5	23/11/2023	17:00	1.3	112.5	24/11/2023	17:00	1.3	67.5
21/11/2023	18:00	0.9	90	22/11/2023	18:00	0.9	90	23/11/2023	18:00	0.9	90	24/11/2023	18:00	0.4	112.5
21/11/2023	19:00	1.3	135	22/11/2023	19:00	1.3	45	23/11/2023	19:00	0.4	45	24/11/2023	19:00	0.9	90
21/11/2023	20:00	0.9	112.5	22/11/2023	20:00	1.3	112.5	23/11/2023	20:00	1.3	112.5	24/11/2023	20:00	0.4	45
21/11/2023	21:00	0.9	112.5	22/11/2023	21:00	0.9	135	23/11/2023	21:00	0.9	135	24/11/2023	21:00	0.9	112.5
21/11/2023	22:00	1.3	112.5	22/11/2023	22:00	0.9	90	23/11/2023	22:00	0.4	90	24/11/2023	22:00	0.9	135
21/11/2023	23:00	1.8	135	22/11/2023	23:00	0.4	135	23/11/2023	23:00	0.4	135	24/11/2023	23:00	0.9	90

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
25/11/2023	0:00	0.9	67.5	26/11/2023	0:00	0.9	67.5	27/11/2023	0:00	0.9	67.5	28/11/2023	0:00	0.4	67.5
25/11/2023	1:00	1.3	67.5	26/11/2023	1:00	1.3	67.5	27/11/2023	1:00	1.3	67.5	28/11/2023	1:00	0.9	90
25/11/2023	2:00	0.9	90	26/11/2023	2:00	0.9	90	27/11/2023	2:00	0.9	90	28/11/2023	2:00	0.4	90
25/11/2023	3:00	0.4	90	26/11/2023	3:00	0.9	90	27/11/2023	3:00	0.9	90	28/11/2023	3:00	0.9	67.5
25/11/2023	4:00	0.4	67.5	26/11/2023	4:00	0.9	67.5	27/11/2023	4:00	0.9	67.5	28/11/2023	4:00	0.9	270
25/11/2023	5:00	0.4	112.5	26/11/2023	5:00	0.9	315	27/11/2023	5:00	0.4	112.5	28/11/2023	5:00	0.4	112.5
25/11/2023	6:00	0.9	90	26/11/2023	6:00	0.4	315	27/11/2023	6:00	0.4	90	28/11/2023	6:00	1.3	45
25/11/2023	7:00	0.4	112.5	26/11/2023	7:00	0.9	90	27/11/2023	7:00	0.9	112.5	28/11/2023	7:00	0.9	90
25/11/2023	8:00	0.4	90	26/11/2023	8:00	0.9	270	27/11/2023	8:00	0.9	90	28/11/2023	8:00	0.9	90
25/11/2023	9:00	0.4	112.5	26/11/2023	9:00	0.4	112.5	27/11/2023	9:00	0.9	315	28/11/2023	9:00	0.4	67.5
25/11/2023	10:00	1.3	67.5	26/11/2023	10:00	1.3	45	27/11/2023	10:00	0.4	315	28/11/2023	10:00	0.4	90
25/11/2023	11:00	1.3	112.5	26/11/2023	11:00	0.9	90	27/11/2023	11:00	0.9	90	28/11/2023	11:00	0.9	45
25/11/2023	12:00	0.9	67.5	26/11/2023	12:00	0.9	90	27/11/2023	12:00	0.9	270	28/11/2023	12:00	0.4	270
25/11/2023	13:00	0.4	67.5	26/11/2023	13:00	0.4	67.5	27/11/2023	13:00	0.4	112.5	28/11/2023	13:00	0.4	90
25/11/2023	14:00	0.4	90	26/11/2023	14:00	0.4	90	27/11/2023	14:00	1.3	45	28/11/2023	14:00	0.9	337.5
25/11/2023	15:00	0.4	90	26/11/2023	15:00	0.9	45	27/11/2023	15:00	0.9	90	28/11/2023	15:00	0.4	90
25/11/2023	16:00	0.9	67.5	26/11/2023	16:00	0.4	270	27/11/2023	16:00	0.9	90	28/11/2023	16:00	0.4	112.5
25/11/2023	17:00	0.4	112.5	26/11/2023	17:00	0.4	90	27/11/2023	17:00	0.4	67.5	28/11/2023	17:00	1.3	67.5
25/11/2023	18:00	0.4	90	26/11/2023	18:00	0.9	337.5	27/11/2023	18:00	0.4	90	28/11/2023	18:00	1.3	112.5
25/11/2023	19:00	0.9	112.5	26/11/2023	19:00	0.4	90	27/11/2023	19:00	0.9	45	28/11/2023	19:00	0.9	90
25/11/2023	20:00	0.9	90	26/11/2023	20:00	0.4	112.5	27/11/2023	20:00	0.4	270	28/11/2023	20:00	1.3	45
25/11/2023	21:00	0.9	112.5	26/11/2023	21:00	1.3	67.5	27/11/2023	21:00	0.4	90	28/11/2023	21:00	1.3	112.5
25/11/2023	22:00	0.9	67.5	26/11/2023	22:00	1.3	112.5	27/11/2023	22:00	0.9	337.5	28/11/2023	22:00	0.9	135
25/11/2023	23:00	0.4	112.5	26/11/2023	23:00	0.9	90	27/11/2023	23:00	0.4	90	28/11/2023	23:00	0.9	90

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
29/11/2023	0:00	0.9	315	30/11/2023	0:00	0.9	315								
29/11/2023	1:00	0.4	315	30/11/2023	1:00	0.4	315								
29/11/2023	2:00	0.9	90	30/11/2023	2:00	0.9	90								
29/11/2023	3:00	0.9	270	30/11/2023	3:00	0.9	270								
29/11/2023	4:00	0.4	112.5	30/11/2023	4:00	0.4	112.5								
29/11/2023	5:00	0	45	30/11/2023	5:00	1.3	45								
29/11/2023	6:00	0.4	90	30/11/2023	6:00	0.9	90								
29/11/2023	7:00	0.4	90	30/11/2023	7:00	0.9	90								
29/11/2023	8:00	0	67.5	30/11/2023	8:00	0.4	67.5								
29/11/2023	9:00	0	90	30/11/2023	9:00	0.4	90								
29/11/2023	10:00	0.4	45	30/11/2023	10:00	0.9	45								
29/11/2023	11:00	0.4	270	30/11/2023	11:00	0.4	270								
29/11/2023	12:00	0.4	90	30/11/2023	12:00	0.4	90								
29/11/2023	13:00	0.9	337.5	30/11/2023	13:00	0.9	337.5								
29/11/2023	14:00	0.4	90	30/11/2023	14:00	0.4	90								
29/11/2023	15:00	0.4	112.5	30/11/2023	15:00	0.4	112.5								
29/11/2023	16:00	0.9	67.5	30/11/2023	16:00	0.9	315								
29/11/2023	17:00	0.4	112.5	30/11/2023	17:00	0.4	315								
29/11/2023	18:00	0.9	90	30/11/2023	18:00	0.9	90								
29/11/2023	19:00	1.3	45	30/11/2023	19:00	0.9	270								
29/11/2023	20:00	1.3	112.5	30/11/2023	20:00	0.4	112.5								
29/11/2023	21:00	0.9	135	30/11/2023	21:00	0.9	112.5								
29/11/2023	22:00	0.9	90	30/11/2023	22:00	0.4	90								
29/11/2023	23:00	0.4	135	30/11/2023	23:00	0.4	90								

Appendix H – 24-hr TSP monitoring results and graphical presentation

Location: AM3 – Sky Tower

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
02/11/2023	Sunny	27.4	1015.5	14.9807	15.0621	0.0814	2023/11/2 13:26	2023/11/3 13:26	1440.0	46	46	1.26	1814	45
08/11/2023	Sunny	25.7	1015.8	18.4461	18.5748	0.1287	2023/11/8 9:29	2023/11/9 9:29	1440.0	46	46	1.26	1819	71
14/11/2023	Cloudy	18.8	1022.6	15.1155	15.2073	0.0918	2023/11/14 9:25	2023/11/15 9:25	1440.0	48	48	1.34	1930	48
20/11/2023	Sunny	25.4	1019.4	18.1588	18.2563	0.0975	2023/11/20 13:38	2023/11/21 13:38	1440.0	48	48	1.32	1905	51
25/11/2023	Sunny	24.8	1021	18.1061	18.2086	0.1025	2023/11/25 9:35	2023/11/26 9:35	1440.0	46	46	1.27	1827	56
												Maximum	71	
												Minimum	45	
												Average	54	
												Action Level	182	
												Limit Level	260	

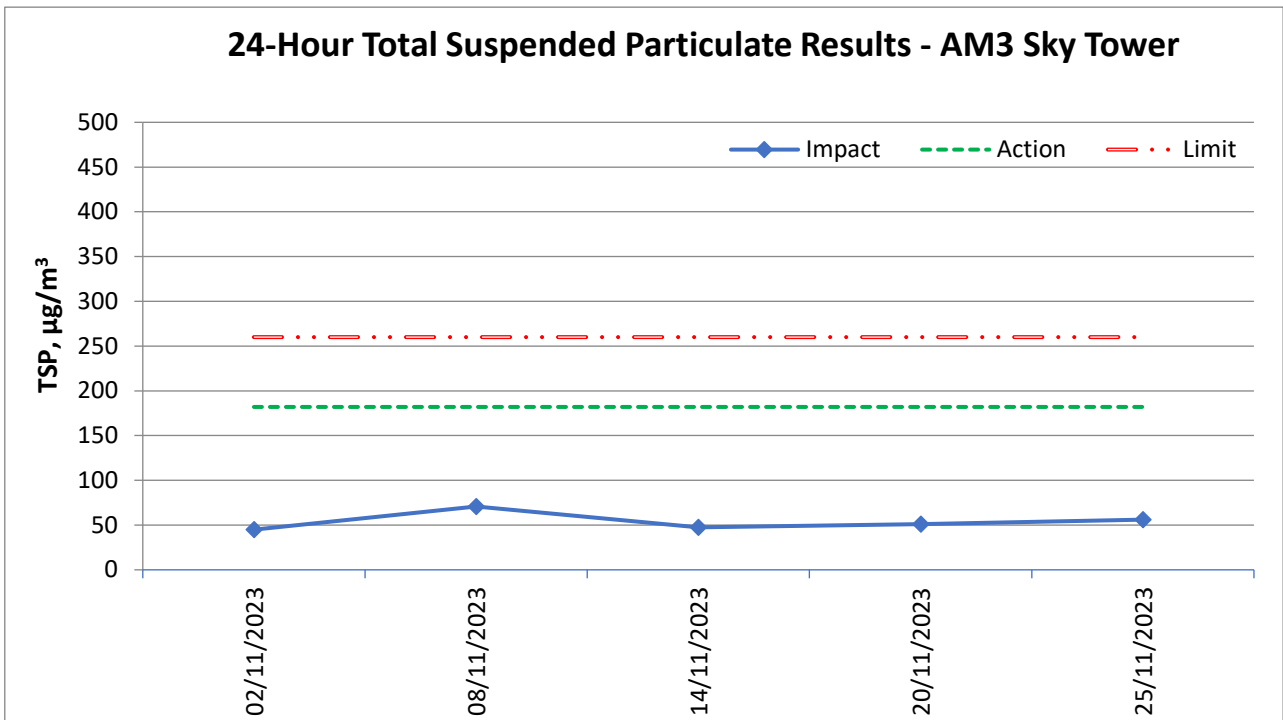
Location: AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A) ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

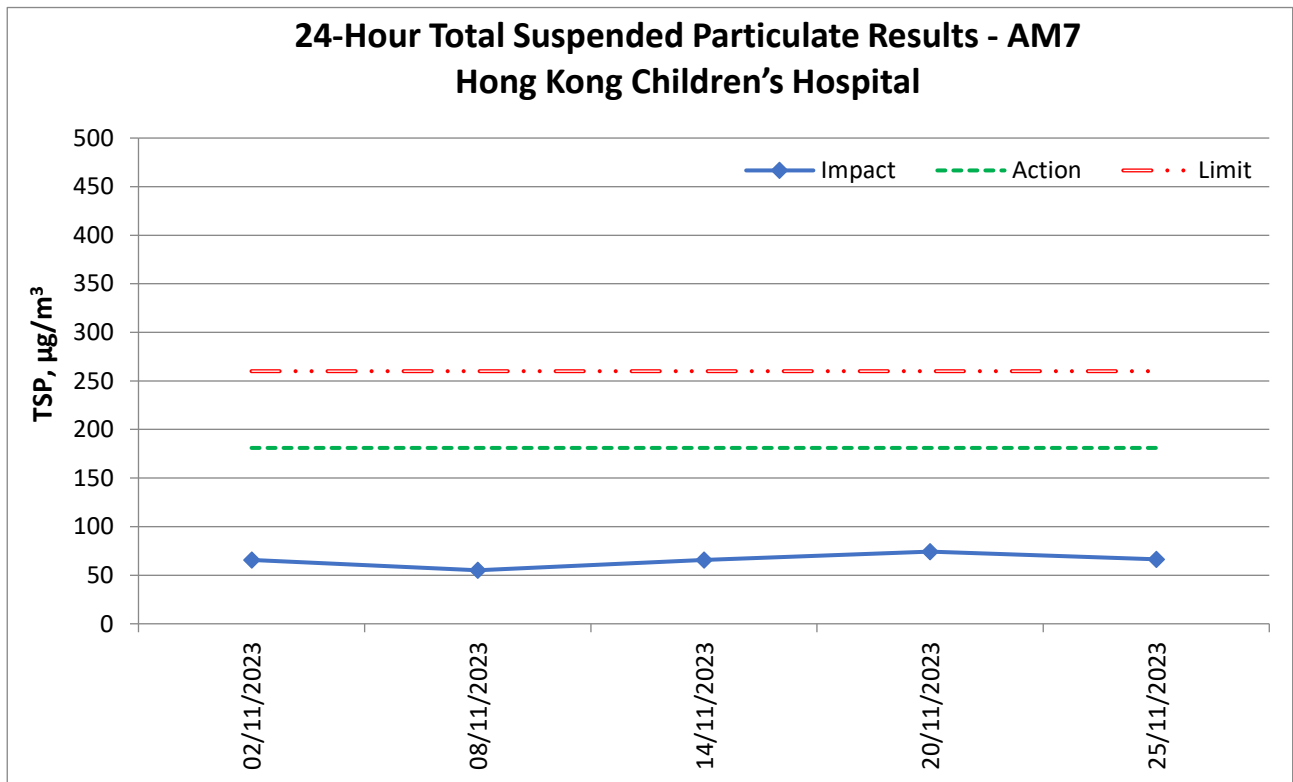
Location: AM7 – Hong Kong Children’s Hospital

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
02/11/2023	Sunny	27.4	1015.5	15.1691	15.2961	0.127	2023/11/2 9:29	2023/11/3 9:29	1440.0	48	48	1.34	1932	66
08/11/2023	Sunny	25.7	1015.8	18.1178	18.2245	0.1067	2023/11/8 13:26	2023/11/9 13:26	1440.0	48	48	1.35	1938	55
14/11/2023	Cloudy	18.8	1022.6	18.0936	18.2231	0.1295	2023/11/14 14:45	2023/11/15 14:45	1440.0	48	48	1.37	1967	66
20/11/2023	Sunny	25.4	1019.4	18.2442	18.3945	0.1503	2023/11/20 9:27	2023/11/21 9:27	1440.0	50	50	1.41	2024	74
25/11/2023	Sunny	24.8	1021	14.9922	15.1264	0.1342	2023/11/25 9:22	2023/11/26 9:22	1440.0	50	50	1.41	2027	66
													Maximum	74
													Minimum	55
													Average	65
													Action Level	181
													Limit Level	260

24-hour average TSP



Note: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A). ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.



Appendix I – 1-hr TSP monitoring results and graphical presentation

Location:
**AM3 -
 Sky Tower**

Date	Measurement Period			1-hr TSP concentration, $\mu\text{g}/\text{m}^3$	Weather
02/11/2023	13:00	-	14:00	39	Sunny
	14:00	-	15:00	42	
	15:00	-	16:00	44	
08/11/2023	9:00	-	10:00	67	Sunny
	10:00	-	11:00	70	
	11:00	-	12:00	73	
14/11/2023	9:00	-	10:00	44	Cloudy
	10:00	-	11:00	49	
	11:00	-	12:00	48	
20/11/2023	13:00	-	14:00	53	Sunny
	14:00	-	15:00	53	
	15:00	-	16:00	55	
25/11/2023	9:00	-	10:00	60	Sunny
	10:00	-	11:00	59	
	11:00	-	12:00	55	
Maximum				73	
Minimum				39	
Average				54	
Action Level				297	
Limit Level				500	

Location:
**AM4(A) -
The Hong Kong
Society for the
Blind's Factory
cum Sheltered
Workshop**

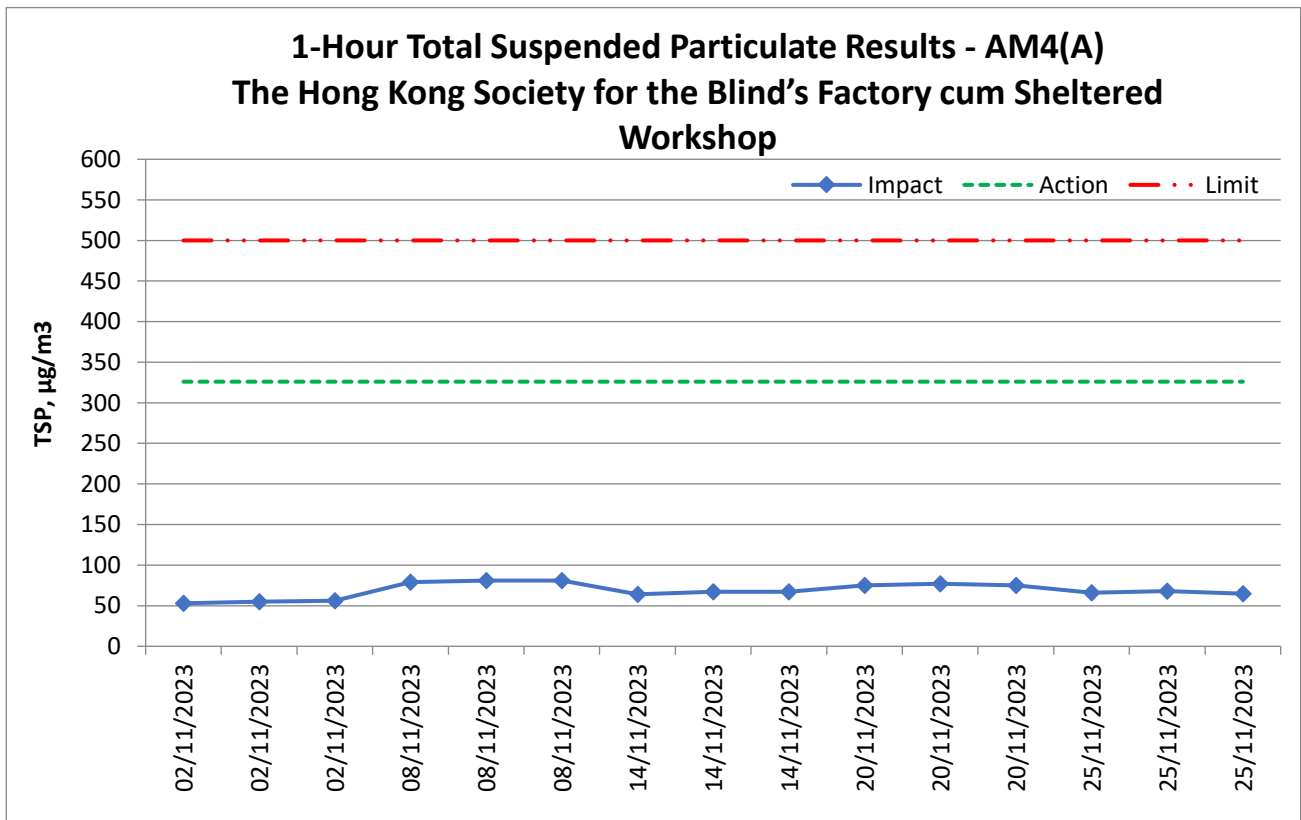
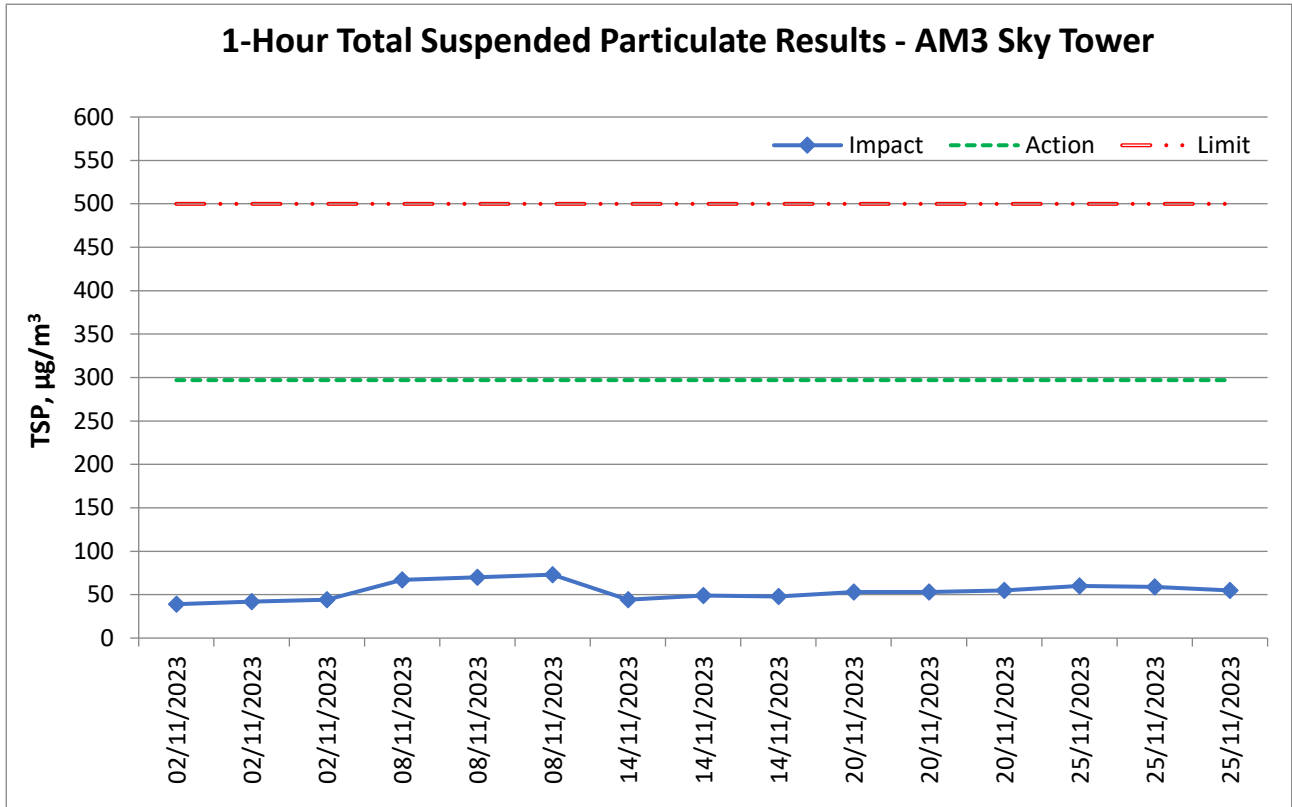
Date	Measurement Period			1-hr TSP concentration, $\mu\text{g}/\text{m}^3$	Weather
02/11/2023	13:00	-	14:00	53	Sunny
	14:00	-	15:00	55	
	15:00	-	16:00	56	
08/11/2023	9:00	-	10:00	79	Sunny
	10:00	-	11:00	81	
	11:00	-	12:00	81	
14/11/2023	9:30	-	10:30	64	Cloudy
	10:30	-	11:30	67	
	13:00	-	14:00	67	
20/11/2023	13:00	-	14:00	75	Sunny
	14:00	-	15:00	77	
	15:00	-	16:00	75	
25/11/2023	13:00	-	14:00	66	Sunny
	14:00	-	15:00	68	
	15:00	-	16:00	65	
Maximum				81	
Minimum				53	
Average				69	
Action Level				326	
Limit Level				500	

NOTE: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hr TSP monitoring at AM4(A) were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

Location:
**AM7 -
 Hong Kong
 Children's
 Hospital**

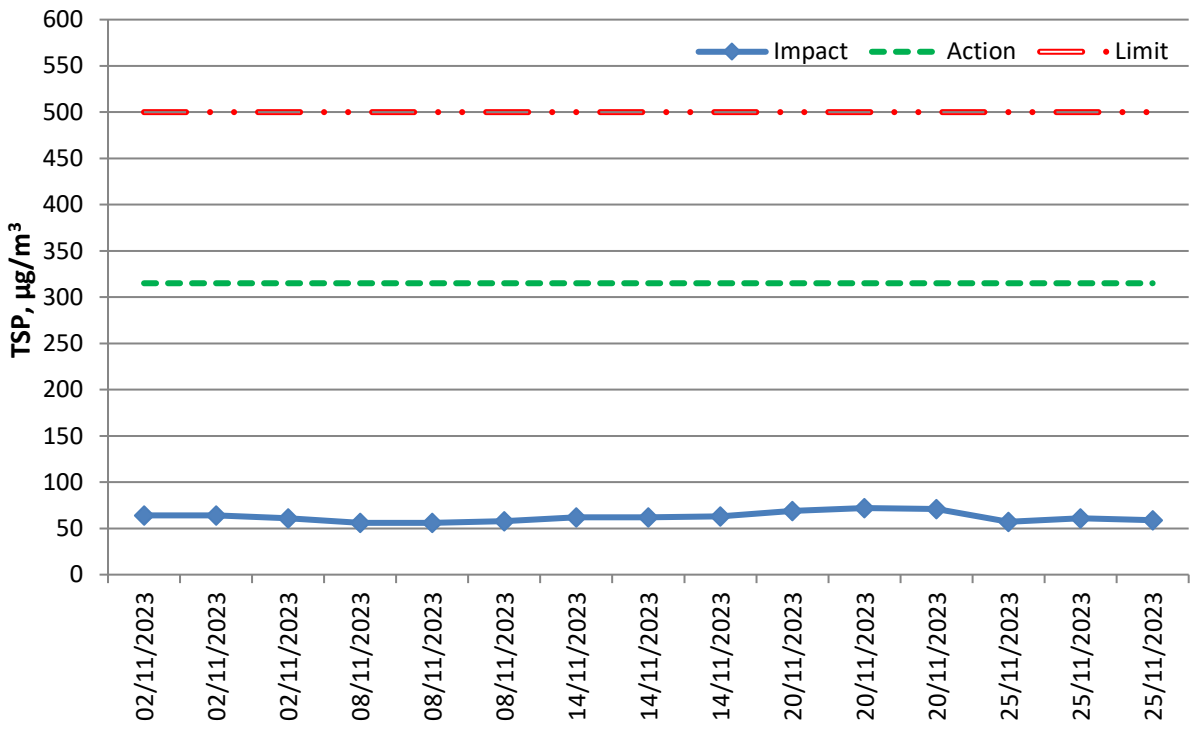
Date	Measurement Period			1-hr TSP concentration, $\mu\text{g}/\text{m}^3$	Weather
02/11/2023	9:00	-	10:00	64	Sunny
	10:00	-	11:00	64	
	11:00	-	12:00	61	
08/11/2023	13:00	-	14:00	56	Sunny
	14:00	-	15:00	56	
	15:00	-	16:00	58	
14/11/2023	14:30	-	15:30	62	Cloudy
	15:30	-	16:30	62	
	16:30	-	17:30	63	
20/11/2023	9:00	-	10:00	69	Sunny
	10:00	-	11:00	72	
	11:00	-	12:00	71	
25/11/2023	9:00	-	10:00	57	Sunny
	10:00	-	11:00	61	
	11:00	-	12:00	59	
Maximum				72	
Minimum				56	
Average				62	
Action Level				315	
Limit Level				500	

1-hour average TSP



NOTE: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hr TSP monitoring at AM4(A) were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

1-Hour Total Suspended Particulate Results - AM7 Hong Kong Children's Hospital



Appendix J – Event and Action Plan for air quality

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Repeat measurement to confirm finding. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and Supervisor /ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 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 Supervisor /ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues. 	<ol style="list-style-type: none"> 1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to Supervisor /ER and IEC within three working day of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, Supervisor /ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss possible remedial measures with ET and Contractor; 4. Advise the Supervisor /ER 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposal for remedial actions to Supervisor /ER and IEC

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results.	on the effectiveness of the proposed remedial measures.	4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	within three working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, Supervisor /ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, Supervisor /ER and Contractor to discuss the remedial action to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results; 7. If exceedance stop, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with Supervisor /ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposal for remedial actions to Supervisor /ER and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.

Appendix K – Calibration certificates, catalogue of noise monitoring equipment

Catalogue of Sound Level Meter

Specifications

	NL-52	NL-42
Applicable standards	IEC 61672-1: 2002 Class 1 ANSI S1.4-1983 Type 1 ANSI S1.4A-1985 Type 1 ANSI S1.43-1997 Type 1 JIS C 1509-1: 2005 Class 1	IEC 61672-1: 2002 Class 2 ANSI S1.4-1983 Type 2 ANSI S1.4A-1985 Type 2 ANSI S1.43-1997 Type 2 JIS C 1509-1: 2005 Class 2
Measurement functions	Simultaneous measurement of the following items, with selected time weighting and frequency weighting WEEE Directives, Chinese RoHS (export model for China only)	
Processing (main ch)	Instantaneous sound pressure level: L_p Equivalent continuous sound pressure level: L_{eq} Sound exposure level: L_E Maximum sound pressure level: L_{max} Minimum sound pressure level: L_{min} Percentage sound levels: L_N (0.1 to 99.9 %, 0.1-increment steps, max. 5 values)	
Processing (sub ch)	Instantaneous sound pressure level: L_p	
Additional processing	In addition to main processing items, one of the following can be selected for simultaneous processing: C-weighted equivalent continuous sound level: L_{Ceq} C-weighted peak sound level: L_{Cpeak} Z-weighted peak sound level: L_{Zpeak} 1-time-weighted equivalent continuous sound level: L_{A1eq}^{*2} Maximum 1-time-weighted equivalent continuous sound level: L_{A1max}^{*2} The power average of the maximum level of each 5 second interval: L_{A1av}^{*5} The frequency weighting for the additional processing synchronizes with the frequency weighting of the sub-channel, so when the sub-channel has A-weighting, L_{A1av}^{*5} can be selected. When C-weighting (Z-weighting) is selected, the additional processing L_{Ceq} and L_{Cpeak} (L_{Zpeak}) are selectable.	
Measuring time	10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h)	
Microphone	Type UC-59 UC-52 Sensitivity level -27 dB -33 dB	
Measurement range	A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB Z-weighting: 38 dB to 138 dB C-weighting peak sound level: 55 dB to 141 dB Z-weighting peak sound level: 60 dB to 141 dB	
Inherent noise	A-weighting 17 dB or less C-weighting 25 dB or less Z-weighting 30 dB or less	19 dB or less 27 dB or less 32 dB or less
Frequency range	20 Hz to 20 kHz 20 Hz to 8 kHz	
Frequency weighting	A, C, and Z	
Time weighting	F (Fast) and S (Slow)	
Level range	Single range (Linearity range: 113 dB) Bar graph display range max. Max. 110 dB (20 to 130 dB) Switching of bar graph display Set the upper/lower limit in 10 dB increments.	
RMS detection circuit	Digital processing method	
Sampling cycle	20.8 μ s (L_p , L_{eq} , L_E , L_{max} , L_{min} , L_{peak} : sampling frequency: 48 kHz) 100 ms (L_N)	
Calibration	Measurement Law: electrical calibration performed according to IEC and JIS standards, using internally generated signals; acoustic calibration performed with the NC-74.	
Correction functions	Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed. Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.	
Delay time	The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.	
Back erase function	When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.	
Display	Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel) Numerical display update frequency: 1 s * Bar graph update frequency: 100 ms	
Store	Manual Number of data Internal memory: max. 1000 sets SD Card: depends on the capacity of the SD Card *1	Auto *2 Instantaneous values (L_p mode) and processed values (L_{eq} mode) are stored continuously and automatically at preset intervals. L_p sampling cycle 100 ms, 200 ms, 1 s, L_{eq} 1s L_{eq} sampling cycle 10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h Measurement Time Max. 1000 h (depends on the capacity of the SD Card) *1

* Windows is a trademark of Microsoft Corporation.
* Specifications subject to change without notice.

Distributed by:

This product is environment-friendly. It does not include toxic chemicals on our policy.
This product is certified as an International Protection rating of IP54 (dust protected and resistant to splashing water).
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1011-4 212 P.D

Data recall	Allows viewing of stored data
Setup memory	Up to five setup configurations can be saved in internal memory, for later recall Start up via file settings previously stored on SD card possible
Waveform recording *3	
File format	Uncompressed waveform WAVE file
Sampling frequency	Select 48 kHz, 24 kHz or 12 kHz
Data length	Select 24 bit or 16 bit
Outputs	
DC output	Output DC signals using a frequency weighting characteristic selected by processing
Output voltage	2.5 V, 25 mV / dB at bar graph display full scale
AC output	Output AC signals using a frequency weighting characteristic selected by processing or by A, C, Z-weighting.
Output voltage	1 V (rms values) at bar graph display full scale
Comparator output *2	Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).
USB *3	Allows USB to be connected to a computer and recognized as a removable disk Allows USB to be controlled via communication commands
RS-232C communication	Allows for RS-232C communication via use of a dedicated cable
Data continuous output *2	
Type of data	Instantaneous value L_p Processed value L_{eq} , L_{max} , L_{min} , L_{peak}
Output interval	100 ms
Print out	Printing of measurement results on dedicated printer DPU-414
Power requirements	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply
Battery life (23 °C)	Alkaline battery LR6 (AA): 26 h NI-MH secondary battery: 25 h At the maximum: * Depends on the setting
AC adapter	NC-98C (NC-34 for previous models cannot be used)
External power voltage	5 to 7 V (rated voltage: 6 V)
Current consumption	Approximately 90 mA (normal operation, rated voltage)
Ambient conditions	Temperature -10 to +50 °C Humidity 10 to 90 % RH (non-condensing)
Dustproof / water-resistant performance *4	IP code: IP54 (except for microphone) See precautions regarding waterproofing
Dimensions, weight	Approx. 250 (H) x 76 (W) x 33 mm (D), approx. 400 g (with batteries)
Supplied accessories	Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MB x 1 (NX-42EX preinstalled model only)

Options

	Product name	Product number
Extended function program (Inst. on 512 MB SD card)		NX-42EX
Waveform recording program *2 (Inst. on 2 GB SD card)		NX-42WR
Octave, 1/3 octave real-time analysis program *2 (Inst. on 512 MB SD card)		NX-42RT
FFT analysis program *2 (Inst. on 512 MB SD card)		NX-42FT
Data management software for environmental measurement		AS-60
Data management software for environmental measurement (Includes the octave and 1/3 octave data management software)		AS-60RT
Data management software for environmental measurement (Includes the vibration level data management software)		AS-60VM
Waveform analysis software		CAT-WAVE
SD Card 512 MB		SD-512M
SD Card 2 GB		SD-2G
AC adapter (100 V to 240 V)		NC-98C
Battery pack		BP-21
Microphone extension cables		EC-04 (from 2 m)
BNC-Pin output code		CC-24
Comparator output cable		CC-42C
Printer		DPU-414
Printer cable		CC-42P
RS 232C serial I/O cable		CC-42R
USB cable		—
Sound calibrator		NC-74
All-weather windscreen		WS-15
Windscreen mounting adapter		WS-15006
Rain-protection windscreen		WS-16
Sound level meter tripod		ST-80
All-weather windscreen tripod		ST-81

*1 Use Rion fully guaranteed products. *2 NX-42EX required (sold separately). *3 NX-42WR required (sold separately).
*4 Protection against harmful dust and water splashing from any direction.

Precautions regarding waterproofing

Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.
To maintain the water and dust proof rating, internal packing replacement is required every two years (at cost).



RION CO., LTD.
http://www.rion.co.jp/english/

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan
Tel: +81-42-359-7888 Fax: +81-42-359-7442

Calibration Certificate of Sound Level Meter

9. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。
 The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.



注: 1. 本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)
 2. 本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)
 3. “委托方”、“委托方联络信息”由委托方提供, “制造厂”、“型号规格”、“出厂编号”以及“设备编号”为仪器上标注, 委托方对上面内容如有异议, 须在收到证书后二十个工作日内提出。
 The information Client and Contact Information are provided by client, and the Manufacturer, Model/Type, Serial No. and Equipment No. are marked on the items. Client shall submit any objection within 20 working days after receiving the certificate for the information above.



证书编号(Certificate No.): 2HB23001488-0004

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

2 指示声级调整 (Indication SPL Calibration)

频率(Frequency)=1000Hz

传声器型号 (Microphone Type)	传声器编号 (Microphone SN.)	放大器型号 (Preamplifier Type)	放大器编号 (Preamplifier SN.)
/	/	/	/

声校准器型号 (Calibrator Type)	标准声压级 (Reference SPL) (dB)	校准前示值 (Before Calibration) (dB)	校准后示值 (After Calibration) (dB)	U (k=2) (dB)
4226	94.0	94.0	94.0	0.2

3 级线性 (Level Linearity)

3.1 参考级量程 (Reference Range)

频率(Frequency): 8000Hz

标准声级 (Standard) (dB)	指示声级 (Indication) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
130.0	129.8	-0.2	±0.8	P	0.3
129.0	128.8	-0.2	±0.8	P	0.3
128.0	127.8	-0.2	±0.8	P	0.3
127.0	126.8	-0.2	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	119.9	-0.1	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	79.9	-0.1	±0.8	P	0.3
70.0	69.9	-0.1	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	49.9	-0.1	±0.8	P	0.3
40.0	39.9	-0.1	±0.8	P	0.3
35.0	34.8	-0.2	±0.8	P	0.3
34.0	33.8	-0.2	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.8	-0.2	±0.8	P	0.3
31.0	30.8	-0.2	±0.8	P	0.3
30.0	29.8	-0.2	±0.8	P	0.3

Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB23001488-0004

3.2 其它级量程 (Other Range)

频率(Frequency): 1000Hz

标准声级 (Standard) (dB)	指示声级 (Indication) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
130.0	129.9	-0.1	±0.8	P	0.3
129.0	128.9	-0.1	±0.8	P	0.3
128.0	127.9	-0.1	±0.8	P	0.3
127.0	126.9	-0.1	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	120.0	0.0	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	80.0	0.0	±0.8	P	0.3
70.0	70.0	0.0	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	50.0	0.0	±0.8	P	0.3
40.0	40.0	0.0	±0.8	P	0.3
35.0	34.9	-0.1	±0.8	P	0.3
34.0	33.9	-0.1	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.9	-0.1	±0.8	P	0.3
31.0	30.9	-0.1	±0.8	P	0.3
30.0	29.9	-0.1	±0.8	P	0.3



证书编号(Certificate No.): 2HB23001488-0004

4 A计权特性(A-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
20	-50.8	-50.5	-0.3	±2.0	P	0.5
25	-45.0	-44.7	-0.3	+2.0 ~ -1.5	P	0.5
31.5	-39.6	-39.4	-0.2	±1.5	P	0.5
40	-34.6	-34.6	0.0	±1.0	P	0.5
50	-30.2	-30.2	0.0	±1.0	P	0.5
63	-26.1	-26.2	0.1	±1.0	P	0.5
80	-22.3	-22.5	0.2	±1.0	P	0.5
100	-19.1	-19.1	0.0	±1.0	P	0.5
125	-16.1	-16.1	0.0	±1.0	P	0.5
160	-13.2	-13.4	0.2	±1.0	P	0.5
200	-10.7	-10.9	0.2	±1.0	P	0.5
250	-8.7	-8.6	-0.1	±1.0	P	0.5
315	-6.8	-6.6	-0.2	±1.0	P	0.4
400	-4.7	-4.8	0.1	±1.0	P	0.4
500	-3.1	-3.2	0.1	±1.0	P	0.4
630	-1.8	-1.9	0.1	±1.0	P	0.4
800	-0.7	-0.8	0.1	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	0.6	0.6	0.0	±1.0	P	0.6
1600	1.0	1.0	0.0	±1.0	P	0.6
2000	1.1	1.2	-0.1	±1.0	P	0.6
2500	1.1	1.3	-0.2	±1.0	P	0.6
3150	1.0	1.2	-0.2	±1.0	P	0.6
4000	0.7	1.0	-0.3	±1.0	P	0.6
5000	0.4	0.5	-0.1	±1.5	P	0.6
6300	-0.2	-0.1	-0.1	+1.5 ~ -2.0	P	0.6
8000	-1.0	-1.1	0.1	+1.5 ~ -2.5	P	0.6
10000	-2.3	-2.5	0.2	+2.0 ~ -3.0	P	0.6
12500	-4.2	-4.3	0.1	+2.0 ~ -5.0	P	1.0
16000	-8.5	-6.6	-1.9	+2.5 ~ -16.0	P	1.0
20000	-18.4	-9.3	-9.1	+3.0 ~ ∞	P	1.0

Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB23001488-0004

5 C计权特性(C-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
20	-6.3	-6.2	-0.1	±2.0	P	0.5
25	-4.5	-4.4	-0.1	+2.0 ~ -1.5	P	0.5
31.5	-3.0	-3.0	0.0	±1.5	P	0.5
40	-2.0	-2.0	0.0	±1.0	P	0.5
50	-1.2	-1.3	0.1	±1.0	P	0.5
63	-0.7	-0.8	0.1	±1.0	P	0.5
80	-0.4	-0.5	0.1	±1.0	P	0.5
100	-0.2	-0.3	0.1	±1.0	P	0.5
125	-0.1	-0.2	0.1	±1.0	P	0.5
160	0.0	-0.1	0.1	±1.0	P	0.5
200	0.0	0.0	0.0	±1.0	P	0.5
250	0.0	0.0	0.0	±1.0	P	0.5
315	0.0	0.0	0.0	±1.0	P	0.4
400	0.0	0.0	0.0	±1.0	P	0.4
500	0.0	0.0	0.0	±1.0	P	0.4
630	0.0	0.0	0.0	±1.0	P	0.4
800	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	-0.1	0.0	-0.1	±1.0	P	0.6
1600	-0.2	-0.1	-0.1	±1.0	P	0.6
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
2500	-0.5	-0.3	-0.2	±1.0	P	0.6
3150	-0.8	-0.5	-0.3	±1.0	P	0.6
4000	-1.1	-0.8	-0.3	±1.0	P	0.6
5000	-1.5	-1.3	-0.2	±1.5	P	0.6
6300	-2.1	-2.0	-0.1	+1.5 ~ -2.0	P	0.6
8000	-2.9	-3.0	0.1	+1.5 ~ -2.5	P	0.6
10000	-4.2	-4.4	0.2	+2.0 ~ -3.0	P	0.6
12500	-6.2	-6.2	0.0	+2.0 ~ -5.0	P	1.0
16000	-10.4	-8.5	-1.9	+2.5 ~ -16.0	P	1.0
20000	-20.4	-11.2	-9.2	+3.0 ~ ∞	P	1.0



证书编号(Certificate No.): 2HB23001488-0004

6 自生噪声 (Autogenous noise)

计权 (Weighting)	实测值 (Actual) (dB)
A	17.7

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Calibration Certificate of Sound Level Meter

 中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB23001488-0003
Certificate No. 



委托单位: Castco Testing Centre Limited
Client

仪器名称: Sound Level Meter
Description

型号规格: NL-52
Model/Type

制造商: RION
Manufacturer

机身号: 00976204
Serial No.

管理号: AAST-SLM-11
Asset No.

接收日期: 2023-07-28 校准日期: 2023-08-07
Rec. Date Cal. Date

签发日期: 2023-08-08 建议校准周期: 12个月(12 months)
App. Date Reference Cal. Period

结论: 所校准项目符合技术要求(The calibrated items meet the technical requirements)
Conclusion

校准: 赵文钰
Calibrated by

核验: 钟颖
Inspected by

签发: 郑木力
Approved by

印章: Stamp



扫一扫查真伪

赛宝计量检测中心
总部地址: 广州市增城区朱村街朱村大道西78号
实验室地址: 广州市增城区朱村街朱村大道西78号
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投诉电话: 020-87236896
邮件: cal@ceprei.com
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre
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证书编号(Certificate No.): 2HB23001488-0003

说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求, 获得中国合格评定国家认可委员会(CNAS)认可, 认可证书号为: CNAS L13344。
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.
2. 本机构出具的数据均可溯源到国际单位制(SI)单位和社会公用计量标准。
The data issued by this laboratory is traceable to International system of Units (SI) and national primary standards.
3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):
* JJG 188-2017 声级计检定规程: Sound pressure level: (20~130)dB; Frequency Weighting: (20~130)dB, (10 Hz~20kHz)
* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可, 其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)

4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

名称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
实验室标准传声器(2246 093)	GFJGL1001230304187/2024-04-13/航空304所	$U=(0.05-0.20)dB (k=2)$	10Hz~20kHz
正弦信号发生器(243165 6)	4GC22000542-0057/2023-10-26/赛宝(广州)	f: $\pm 1mHz$; 失真度 Distortion: $< -70dB$	f: 0.001Hz~200kHz; U : 100 μ V~5Vrms
前置放大器(3194482)	4GC22000429-0039/2023-08-29/赛宝(广州)	$\pm 0.1dB$	10Hz~50kHz
数字多用表(MY5300648 3)	4GC22000447-0003/2023-09-26/赛宝(广州)	DCV: $\pm 0.0035%$; ACV: 0.06%; DCI: $\pm 0.05%$; ACI: $(0.001 \sim 750)V$ (3Hz~); $\pm 0.1%$; R: $\pm 0.01%$; f: $\pm 0.001%$	DCV: $\pm 0.001Hz \sim 1000V$; ACV: $\pm 0.001Hz \sim 51.2kHz$; DCI: $(0 \sim 3)A$; ACI: $(0 \sim 3)A$ (3Hz~5kHz); R: $(0 \sim 100)M\Omega$; f: 3Hz~300kHz
功率放大器(2536312)	4GC22000600-0093/2023-11-30/赛宝(广州)	频率响应: $\pm 1dB$, 失真度: $< 0.2%$	20Hz~50kHz
PULSE分析系统(3160-06540)	4GC23000001-0137/2024-01-03/赛宝(广州)	频率: $U_{ref}=0.001%, k=2$; 电压: $U_{ref}=0.10%, k=2$	频率: 0.001Hz~51.2kHz; 电压: $(1 \times 10^3 \sim 30)V$
声校准器(2272351)	4GC22000600-0073/2023-11-29/赛宝(广州)	1级 First Level	31.5Hz~16kHz

5. 校准地点(The calibration place):
广州市增城区朱村街朱村大道西78号9栋110室
6. 环境条件(Environmental conditions):
温度(Temperature): 25.3°C 相对湿度(Relative Humidity): 65%
7. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.
8. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。
"P" and "Pass" in this certificate stand for "Low Limit: the measured value \leq High Limit", "F" and "Fail" stand for "the measured value $<$ Low Limit or the measured value $>$ High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc". The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

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Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB23001488-0003

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

2 指示声级调整 (Indication SPL Calibration)

频率(Frequency)=1000Hz

传声器型号 (Microphone Type)	传声器编号 (Microphone SN.)	放大器型号 (Preamplifier Type)	放大器编号 (Preamplifier SN.)
/	/	/	/

声校准器型号 (Calibrator Type)	标准声压级 (Reference SPL)	校准前示值 (Before Calibration)	校准后示值 (After Calibration)	U (k=2)
4226	94.0 (dB)	93.8 (dB)	93.8 (dB)	0.2 (dB)

3 级线性 (Level Linearity)

3.1 参考级量程 (Reference Range)

频率(Frequency): 8000Hz

标准声级 (Standard)	指示声级 (Indication)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)	U (k=2)
130.0	129.8	-0.2	±0.8	P	0.3
129.0	128.8	-0.2	±0.8	P	0.3
128.0	127.8	-0.2	±0.8	P	0.3
127.0	126.8	-0.2	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	119.9	-0.1	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	79.9	-0.1	±0.8	P	0.3
70.0	69.9	-0.1	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	49.9	-0.1	±0.8	P	0.3
40.0	39.9	-0.1	±0.8	P	0.3
35.0	34.8	-0.2	±0.8	P	0.3
34.0	33.8	-0.2	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.8	-0.2	±0.8	P	0.3
31.0	30.8	-0.2	±0.8	P	0.3
30.0	29.8	-0.2	±0.8	P	0.3

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证书编号(Certificate No.): 2HB23001488-0003

3.2 其它级量程 (Other Range)

频率(Frequency): 1000Hz

标准声级 (Standard)	指示声级 (Indication)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)	U (k=2)
130.0	129.9	-0.1	±0.8	P	0.3
129.0	128.9	-0.1	±0.8	P	0.3
128.0	127.9	-0.1	±0.8	P	0.3
127.0	126.9	-0.1	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	120.0	0.0	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	80.0	0.0	±0.8	P	0.3
70.0	70.0	0.0	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	50.0	0.0	±0.8	P	0.3
40.0	40.0	0.0	±0.8	P	0.3
35.0	34.9	-0.1	±0.8	P	0.3
34.0	33.9	-0.1	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.9	-0.1	±0.8	P	0.3
31.0	30.9	-0.1	±0.8	P	0.3
30.0	29.9	-0.1	±0.8	P	0.3

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Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB23001488-0003

4 A计权特性(A-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
20	-50.5	-50.5	0.0	±2.0	P	0.5
25	-44.9	-44.7	-0.2	+2.0 ~ -1.5	P	0.5
31.5	-39.7	-39.4	-0.3	±1.5	P	0.5
40	-34.5	-34.6	0.1	±1.0	P	0.5
50	-30.3	-30.2	-0.1	±1.0	P	0.5
63	-26.2	-26.2	0.0	±1.0	P	0.5
80	-22.3	-22.5	0.2	±1.0	P	0.5
100	-19.1	-19.1	0.0	±1.0	P	0.5
125	-16.1	-16.1	0.0	±1.0	P	0.5
160	-13.2	-13.4	0.2	±1.0	P	0.5
200	-10.8	-10.9	0.1	±1.0	P	0.5
250	-8.6	-8.6	0.0	±1.0	P	0.5
315	-6.6	-6.6	0.0	±1.0	P	0.4
400	-4.7	-4.8	0.1	±1.0	P	0.4
500	-3.2	-3.2	0.0	±1.0	P	0.4
630	-1.9	-1.9	0.0	±1.0	P	0.4
800	-0.8	-0.8	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	0.5	0.6	-0.1	±1.0	P	0.6
1600	0.9	1.0	-0.1	±1.0	P	0.6
2000	1.1	1.2	-0.1	±1.0	P	0.6
2500	1.1	1.3	-0.2	±1.0	P	0.6
3150	0.9	1.2	-0.3	±1.0	P	0.6
4000	0.7	1.0	-0.3	±1.0	P	0.6
5000	0.3	0.5	-0.2	±1.5	P	0.6
6300	-0.2	-0.1	-0.1	+1.5 ~ -2.0	P	0.6
8000	-1.1	-1.1	0.0	+1.5 ~ -2.5	P	0.6
10000	-2.3	-2.5	0.2	+2.0 ~ -3.0	P	0.6
12500	-4.3	-4.3	0.0	+2.0 ~ -5.0	P	1.0
16000	-8.5	-6.6	-1.9	+2.5 ~ -16.0	P	1.0
20000	-18.4	-9.3	-9.1	+3.0 ~ -∞	P	1.0

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证书编号(Certificate No.): 2HB23001488-0003

5 C计权特性(C-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
20	-6.6	-6.2	-0.4	±2.0	P	0.5
25	-4.7	-4.4	-0.3	+2.0 ~ -1.5	P	0.5
31.5	-3.0	-3.0	0.0	±1.5	P	0.5
40	-2.0	-2.0	0.0	±1.0	P	0.5
50	-1.3	-1.3	0.0	±1.0	P	0.5
63	-0.8	-0.8	0.0	±1.0	P	0.5
80	-0.4	-0.5	0.1	±1.0	P	0.5
100	-0.2	-0.3	0.1	±1.0	P	0.5
125	-0.1	-0.2	0.1	±1.0	P	0.5
160	0.0	-0.1	0.1	±1.0	P	0.5
200	0.0	0.0	0.0	±1.0	P	0.5
250	0.0	0.0	0.0	±1.0	P	0.5
315	0.0	0.0	0.0	±1.0	P	0.4
400	0.0	0.0	0.0	±1.0	P	0.4
500	0.0	0.0	0.0	±1.0	P	0.4
630	0.0	0.0	0.0	±1.0	P	0.4
800	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	-0.1	0.0	-0.1	±1.0	P	0.6
1600	-0.2	-0.1	-0.1	±1.0	P	0.6
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
2500	-0.5	-0.3	-0.2	±1.0	P	0.6
3150	-0.8	-0.5	-0.3	±1.0	P	0.6
4000	-1.1	-0.8	-0.3	±1.0	P	0.6
5000	-1.5	-1.3	-0.2	±1.5	P	0.6
6300	-2.1	-2.0	-0.1	+1.5 ~ -2.0	P	0.6
8000	-3.0	-3.0	0.0	+1.5 ~ -2.5	P	0.6
10000	-4.3	-4.4	0.1	+2.0 ~ -3.0	P	0.6
12500	-6.2	-6.2	0.0	+2.0 ~ -5.0	P	1.0
16000	-10.4	-8.5	-1.9	+2.5 ~ -16.0	P	1.0
20000	-20.3	-11.2	-9.1	+3.0 ~ -∞	P	1.0

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Catalogue of Sound Calibrator

For microphone calibration **NC-74**

How to use

Carefully insert the microphone all the way into the coupler of the NC-74. Then simply turn the power on to apply a constant sound pressure level to the diaphragm of the microphone.

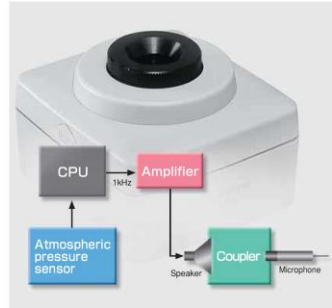


Usage example (NL series)

The performance of the NC-74 is suitable for calibration of high-precision sound level meters. The unit is compact, lightweight, and easy to use. Two IEC LR6 (size AA) alkaline batteries will power the unit for more than 30 hours of continuous use at room temperature.

Atmospheric pressure compensation principle

The NC-74 incorporates a sensor that detects atmospheric pressure. Based on the information provided by the sensor, the CPU controls the signal amplitude. This allows the unit to always provide the correct output for achieving constant sound pressure level, regardless of fluctuations in atmospheric pressure.



Using the 1/2-inch adapter

To allow calibration of sound level meter microphones with 1 inch diameter, the 1/2-inch microphone adapter can be removed. 1/2-inch microphones are calibrated with the adapter in place.



Specifications

Applicable standards	IEC 60942:2003 Class 1 JIS C1615:2004 Class 1	
Suitable microphones	1-inch microphones	IEC 61094-1 Type LS1P UC-27 UC-25 UC-34
	1/2-inch microphones	IEC 61094-1 Type LS2aP UC-59 UC-57 UC-58a UC-56 UC-26 UC-30 UC-31 UC-33P
Nominal sound pressure level	94 dB	
Sound pressure level tolerance	±0.3 dB	
Nominal frequency	1 kHz	
Frequency tolerance	±1.0 % or less	
Power requirements	IEC LR6 (size AA) alkaline battery X 2	
Dimensions, mass	Approx. 49 (H) X 80 (W) X 74 (D) mm Approx. 200 g (including batteries)	
Supplied accessories	Class X 1	
	IEC LR6 (size AA) alkaline battery X 2 1/2-inch microphone adapter NC-74-002 X 1	

* Specification subject to change without notice.

RION CO., LTD.

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan
Tel: +81-42-359-7888 Fax: +81-42-359-7442
<http://www.rion.co.jp/english/>

Distributed by:



ISO 14001 RION CO., LTD.
ISO 9001 RION CO., LTD.

Printed in Japan 0510-1 0807.P.MP

Calibration Certificate of Sound Calibrator



中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB23001488-0001
Certificate No.



委托单位: Castco Testing Centre Limited
Client
仪器名称: Sound Level Calibrator
Description
型号规格: NC-74
Model/Type
制造商: RION
Manufacturer
机身号: 34178129
Serial No.
管理号: AAST-SLC-05
Asset No.
接收日期: 2023-07-28
Rec. Date
校准日期: 2023-08-08
Cal. Date
签发日期: 2023-08-10
App. Date
建议校准周期: 12个月(12 months)
Reference Cal. Period
结论: 所校准项目符合技术要求(The calibrated items meet the technical requirements)
Conclusion

校准: 赵文钰
Calibrated by

检验: 钟灏
Inspected by

签发: 郑术力
Approved by

印章: Stamp



扫一扫查真伪

赛宝计量检测中心
总部地址: 广州市增城区朱村街朱村大道西78号
实验室地址: 广州市增城区朱村街朱村大道西78号
客服电话: 020-87237633 传真: 020-87236189
投诉电话: 020-87236896
邮件: cal@ceprei.com
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre
HQ Addr: No.78,Zhucun Avenue West,Zengcheng District,Guangzhou,China
Add. of the Lab: No.78,Zhucun Avenue West,Zengcheng District,Guangzhou,China
Service Tel: 020-87237633 Fax: 020-87236189
Complaint Tel: 020-87236896
Email: cal@ceprei.com
Website: www.ceprei-cal.com

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Calibration Certificate of Sound Calibrator

证书编号(Certificate No.): 2HB23001488-0001

说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求, 获得中国合格评定国家认可委员会(CNAS) 认可, 认可证书号为: CNAS L13344。
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

2. 本机构出具的数据均可溯源到国际单位制(SI) 单位和社会公用计量标准。
The data issued by this laboratory is traceable to International system of Units (SI) and national primary standards.

3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):
* JIG 176-2022 声校准器检定规程: Sound Pressure Level: 94dB, 104dB, 114dB, 124dB(63Hz~8kHz); 94dB、104dB、114dB,(31.5Hz~16kHz); Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0.1%~10%, (20Hz~20kHz)

* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可, 其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)

4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

名称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
实验室标准传声器(2246 093)	GFJGJL1001230304187/2024-04-13/航空304所	$U=(0.05-0.20)$ dB ($k=2$)	10Hz~20kHz
前置放大器(3194482)	4GC22000429-0039/2023-08-29/赛宝(广州)	± 0.1 dB	10Hz~50kHz
数字多用表(MY5300648 3)	4GC22000447-0003/2023-09-26/赛宝(广州)	DCV: $\pm 0.0035\%$; ACV: $\pm DCV(0\sim 1000V)$; ACV 0.06%; DCI: $\pm 0.05\%$; ACI: $\pm 0.001\sim 750V$ @(3Hz~300kHz); DCI(0~3)A; ACI(0~3)A@(3Hz~5kHz); R:(0~100)M Ω ; $\pm 0.001\%$	
PULSE分析系统(3050-1 02038)	4GC23000001-0135/2024-01-03/赛宝(广州)	频率: $E_{rel}=0.001\%$, $k=2$;电压: $U_{rel}=0.04\%$, $k=2$	频率:0.001Hz~51.2kHz; 电压:($1\cdot 10^{-3}\sim 30$)V

5. 校准地点(The calibration place):
广州市增城区朱村街朱村大道西78号9栋110室

6. 环境条件(Environmental conditions):
温度(Temperature): 22.6°C 相对湿度(Relative Humidity): 58%

7. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子 k 得到。
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.

8. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。
"P" and "Pass" in this certificate stand for "Low Limit \leq the measured value \leq High Limit", "F" and "Fail" stand for "the measured value < Low Limit or the measured value > High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc". The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

9. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。



证书编号(Certificate No.): 2HB23001488-0001

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

2 声压级 (Sound Pressure Level)

规定声压级 (Prescribed SPL)	测量声压级 (Measured SPL)	声压级差的绝对值 (Absolute value of SPL)	接受限 (Limit)	结论 (Pass/Fail)	U ($k=2$) (dB)
(dB)	(dB)	(dB)	(dB)		(dB)
94	93.95	0.05	≤ 0.25	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.)	测量频率 (Measured Fre.)	频率误差的绝对值 (Absolute value of Fre.)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} ($k=2$) (%)
(Hz)	(Hz)	(%)	(%)		(%)
1000	1002.1	0.21	≤ 0.70	P	0.10

4 总失真+噪声 (Distortion and noise)

规定声压级 (Prescribed SPL)	规定频率 (Measured Fre.)	总失真+噪声 (Distortion and noise)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} ($k=2$) (%)
(dB)	(Hz)	(%)	(%)		(%)
94	1000	0.57	≤ 2.50	P	5.0

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Calibration Certificate of Sound Calibrator



中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校准证书

CALIBRATION CERTIFICATE

证书编号: 2HB23001715-0001
Certificate No. 




中国认可
国际互认
校准
CALIBRATION
CNAS L13344

委托单位: Castco Testing Centre Limited
Client

仪器名称: Sound Level Calibrator
Description

型号规格: NC-74
Model/Type

制造商: RION
Manufacturer

机身号: 34678556
Serial No.

管理号: AAST-SLC-06
Asset No.

接收日期: 2023-08-23 校准日期: 2023-09-05
Rec. Date Cal. Date

签发日期: 2023-09-05 建议校准周期: 12个月(12 months)
App. Date Reference Cal. Period

结论: 所校准项目符合技术要求(The calibrated items meet the technical requirements)
Conclusion

校准: 赵文钰 赵文钰
Inspected by

签发: 郑木力 郑木力
Approved by

核校: 钟灏 钟灏
Inspected by



扫一扫查真伪

赛宝计量检测中心 CEPREI Calibration and Testing Centre
总部地址: 广州市增城区朱村街朱村大道西78号 HQ Addr: No.78,Zhucun Avenue West,Zengcheng District,Guangzhou,China
实验室地址: 广州市增城区朱村街朱村大道西78号 Add. of the Lab: No.78,Zhucun Avenue West,Zengcheng District,Guangzhou,China
客服电话: 020-87237633 传真: 020-87236189 Service Tel: 020-87237633 Fax: 020-87236189
投诉电话: 020-87236896 Complaint Tel: 020-87236896
邮件: cal@ceprei.com Email: cal@ceprei.com
网址: www.ceprei-cal.com Website: www.ceprei-cal.com

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证书编号(Certificate No.): 2HB23001715-0001

说明

DIRECTIONS


- 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求, 获得中国合格评定国家认可委员会 (CNAS) 认可, 认可证书号为: CNAS L13344.
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.
- 本机构出具的数据均可溯源到国际单位制 (SI) 单位和社会公用计量标准。
The data issued by this laboratory is traceable to International system of Units (SI) and national primary standards.
- 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):
* JJG 176-2022 声校准器检定规程: Sound Pressure Level: 94dB、104dB、114dB、124dB(63Hz~8kHz); 94dB、104dB、114dB(31.5Hz~16kHz); Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0.1%~10% (20Hz~20kHz)
* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可, 其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)
- 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

名称	证书号/有效期/溯源单位	技术指标	测量范围
(Description)	(Certificate No./Due Date/Traceability to)	(Specification)	(Measuring Range)
前置放大器(2239843)	GFJGIL1001230304185/2024-03-22/航空304所	频率响应: $\pm 0.1\text{dB}$	(10~50000) Hz
数字多用表(MY45051674)	GFJGIL1004230400378/2024-04-02/航天514所	DCV: $\pm 8 \times 10^{-3}$; DCI: $\pm 2 \times 10^{-3}$; ACV: $\pm 0.02\%$; ACI: $\pm 0.03\%$; R: $\pm 1 \times 10^{-3}$; f: $\pm 0.01\%$	DCV: 10nV~1000V; DCI: 1pA~1A; ACV: (10nV~700V) @ (100pA~1A) @ (10Hz~2MHz); ACI: (10Hz~100kHz); R: 10 $\mu\Omega$ ~1G Ω ; f: 1Hz~10MHz
P/LSE分析系统(3160-106540)	4GC23000528-0009/2024-08-16/赛宝(广州)	频率: $U_{95}=0.001\%$, $k=2$; 电压: $U_{95}=0.10\%$, $k=2$	频率: 0.001Hz~51.2kHz 电压: (1~10 ⁻³)~30V
实验室标准传声器(2246093)	GFJGIL1001230304187/2024-04-13/航空304所	LS级	10Hz~25kHz

- 校准地点(The calibration place):
广州市增城区朱村街朱村大道西78号9栋110室
- 环境条件(Environmental conditions):
温度(Temperature): 21.2°C 相对湿度(Relative Humidity): 60%
- 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.
- 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。
"P" and "Pass" in this certificate stand for "Low Limit \leq the measured value \leq High Limit", "F" and "Fail" stand for "the measured value < Low Limit or the measured value > High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc". The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.
- 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

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Calibration Certificate of Sound Calibrator



证书编号(Certificate No.): 2HB23001715-0001

1 外观与工作正常性检查 (Appearance and Function Check)
无影响证书中测量结果准确度的因素和缺陷。
There are no factor and defect that affect the measurement result accuracy of the certificate.

2 声压级 (Sound Pressure Level)

规定声压级 (Prescribed SPL)	测量声压级 (Measured SPL)	声压级差的绝对值 (Absolute value of SPL)	接受限 (Limit)	结论 (Pass/Fail)	U
(dB)	(dB)	(dB)	(dB)		(dB)
94	93.86	0.14	≤0.25	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.)	测量频率 (Measured Fre.)	频率误差的绝对值 (Absolute value of Fre.)	接受限 (Limit)	结论 (Pass/Fail)	U _{rel}
(Hz)	(Hz)	(%)	(%)		(%)
1000	1003.7	0.37	≤0.70	P	0.10

4 总失真+噪声 (Distortion and noise)

规定声压级 (Prescribed SPL)	规定频率 (Measured Fre.)	总失真+噪声 (Distortion and noise)	接受限 (Limit)	结论 (Pass/Fail)	U _{rel}
(dB)	(Hz)	(%)	(%)		(%)
94	1000	0.69	≤2.50	P	5.0

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CEPREI

数据页(Data sheet) ID: 013393

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Catalogue of Air Flow Meter (TSI TA440)

SPECIFICATIONS

THERMAL ANEMOMETERS MODELS TA410, TA430 AND TA440

Velocity

Range (TA410) 0 to 20 m/s (0 to 4,000 ft/min)
 Range (TA430, TA440) 0 to 30 m/s (0 to 6,000 ft/min)
 Accuracy (TA410)^{1,2} ±5% of reading or ±0.025 m/s (±5 ft/min), whichever is greater
 Accuracy (TA430, TA440)^{1,2} ±3% of reading or ±0.015 m/s (±3 ft/min), whichever is greater
 Resolution 0.01 m/s (1 ft/min)

Duct Size (TA430, TA440)

Dimensions 1 to 635 cm in increments of 0.1 cm (1 to 250 inches in increments of 0.1 in.)

Volumetric Flow Rate (TA430, TA440)

Range Actual range is a function of velocity, and duct size

Temperature

Range (TA410, TA430) -18 to 93°C (0 to 200°F)
 Range (TA440) -10 to 60°C (14 to 140°F)
 Accuracy³ ±0.3°C (±0.5°F)
 Resolution 0.1°C (0.1°F)

Relative Humidity (TA440 only)

Range 5 to 95% RH
 Accuracy⁴ ±3% RH
 Resolution 0.1% RH

Wet Bulb Temperature (TA440 only)

Range 5 to 60°C (40 to 140°F)
 Resolution 0.1°C (0.1°F)

Dew Point (TA440 only)

Range -15 to 49°C (5 to 120°F)
 Resolution 0.1°C (0.1°F)

Instrument Temperature Range

Operating (Electronics) 5 to 45°C (40 to 113°F)
 Model TA410, TA430 Operating (Probe) -18 to 93°C (0 to 200°F)
 Model TA440 Operating (Probe) -10 to 60°C (14 to 140°F)
 Storage -20 to 60°C (-4 to 140°F)

Data Storage Capabilities (TA430, TA440)

Range 12,700+ samples and 100 test IDs

Logging Interval (TA430, TA440)

1 second to 1 hour

Specifications subject to change without notice.

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Airflow Instruments, TSI Instruments Ltd.
 Visit our website at www.airflowinstruments.co.uk for more information.

UK Tel: +44 149 4 459200 Germany Tel: +49 241 523030
 France Tel: +33 491 11 87 64

P/N 2980548 Rev D (A4) ©2014 TSI Incorporated

Time Constant (TA430, TA440)

User selectable

External Meter Dimensions

8.4 cm x 17.8 cm x 4.4 cm (3.3 in. x 7.0 in. x 1.8 in.)

Meter Weight with Batteries

0.27 kg (0.6 lbs.)

Meter Probe Dimensions

Probe Length 101.6 cm (40 in.)
 Probe Diameter of Tip 7.0 mm (0.28 in.)
 Probe Diameter of Base 13.0 mm (0.51 in.)

Articulating Probe Dimensions

Articulating Section Length 19.7 cm (7.8 in.)
 Diameter of Articulating Knuckle 9.5 mm (0.38 in.)

Power Requirements

Four AA-size batteries or AC adapter

	TA410	TA430 TA430-A	TA440 TA440-A
Velocity range 0 to 20.00 m/s (0 to 4000 ft/min)	+		
Velocity range 0 to 30.00 m/s (0 to 6000 ft/min)		+	+
Temperature	+	+	+
Flow		+	+
Humidity, wet bulb, dew point			+
Probe	Straight	Straight or -A articulated	Straight or -A articulated
Variable time constant		+	+
Manual data logging		+	+
Auto save data logging			+
Statistics		+	+
Review data		+	+
LogDat2 downloading software		+	+
Free Certificate of Calibration	+	+	+

¹ Temperature compensated over an air temperature range of 5 to 65°C (40 to 150°F).

² The accuracy statement begins at 30 ft/min through 4000 ft/min (0.15 m/s through 20 m/s) for the Model TA410, and 30 ft/min through 6000 ft/min (0.15 m/s through 30 m/s) for Models TA430 and TA440.

³ Accuracy with instrument case at 25°C (77°F), add uncertainty of 0.03°C (0.05°F/F) for change in instrument temperature.

⁴ Accuracy with probe at 25°C (77°F). Add uncertainty of 0.2% RH/°C (0.1% RH/°F) for change in probe temperature. Includes 1% hysteresis.

Calibration Certificate of Air Flow Meter



Cal Lab Limited 校正實驗室有限公司
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,
 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0222301

Customer Information

Customer: Castco Testing Centre Limited
 Address: 33, On Kui Street, Fanling, N.T.

Equipment Identification

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401706003	AAST-FLOW-03

Certificate Information

Date of Receipt:	11 January 2023	Calibration Condition:	23.5°C, 58%RH, 1003hPa
Date of Calibration:	13 January 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	SOP-112	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Hot Wire Anemometer	9535	T95351316004	11 August 2024

Result of Calibration

Air flow rate – Error of indication

Reference reading (L/min)	Measured reading (L/min)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
0.5	0.51	2.0	3.6	± 5 %	JIG 956-2013
1.0	0.99	-1.0	3.6	± 5 %	JIG 956-2013
2.0	2.03	1.5	3.6	± 5 %	JIG 956-2013
5.0	5.07	1.4	3.6	± 5 %	JIG 956-2013

CT-AFR-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
 Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
 Note3: The result 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.
 Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Wing Cheng
 Wing Cheng

Checked and Approved By:

Warren Yeung
 Warren Yeung

Company Chop:



Certificate Issue Date: 13 January 2023

CT-BEG-03

*** End of Certificate ***

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Calibration
 2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0222301
Page 1 of 1

AAST-FLOW-04, Cal Cert: 13 Jan 2023



Cal Lab Limited 校正實驗室有限公司
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,
 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0312212

Customer Information

Customer: Castco Testing Centre Limited
 Address: 33, On Kui Street, Fanling, N.T.

Equipment Identification

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401739003	AAST-FLOW-04

Certificate Information

Date of Receipt:	19 December 2022	Calibration Condition:	23.5°C, 58%RH, 1003hPa
Date of Calibration:	13 January 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	SOP-112	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Hot Wire Anemometer	9535	T95351316004	11 August 2024

Result of Calibration

Air flow rate – Error of indication

Reference reading (L/min)	Measured reading (L/min)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
0.5	0.49	-2.0	3.6	± 5 %	JIG 956-2013
1.0	1.02	2.0	3.6	± 5 %	JIG 956-2013
2.0	2.02	1.0	3.6	± 5 %	JIG 956-2013
5.0	5.05	1.0	3.6	± 5 %	JIG 956-2013

CT-AFR-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
 Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
 Note3: The result 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.
 Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Wing Cheng
 Wing Cheng

Checked and Approved By:

Warren Yeung
 Warren Yeung

Company Chop:



Certificate Issue Date: 13 January 2023

CT-BEG-03

*** End of Certificate ***

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Calibration
 2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0312212
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Appendix L – Noise monitoring results and graphical presentation

M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

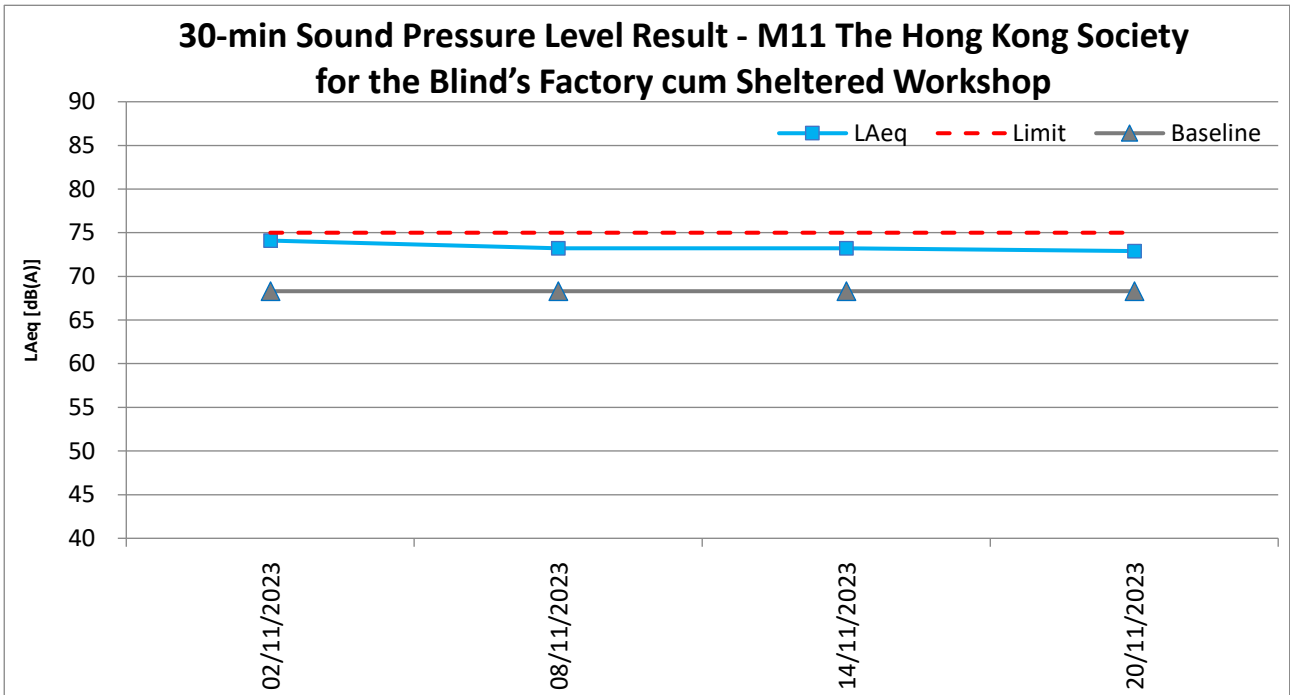
Date	Temp (°C)	Weather	Measured Noise Level at M11, dB(A)						Limit	
			Time			Baseline	L _{Aeq}	L _{A10}		L _{A90}
02/11/2023	27.4	Sunny	14:15	-	14:45	68.3	74.1	76.9	65.8	75
08/11/2023	25.7	Sunny	10:40	-	11:10	68.3	73.2	76.8	64.9	75
14/11/2023	18.8	Cloudy	9:35	-	10:05	68.3	73.2	76.4	64.6	75
20/11/2023	25.4	Sunny	14:26	-	14:56	68.3	72.9	75.3	64.1	75
Maximum							74.1			
Minimum							72.9			
Average							73.4			

NOTE: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 30-min noise monitoring at M11 were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for M11 is confirmed.

M12 - Hong Kong Children's Hospital

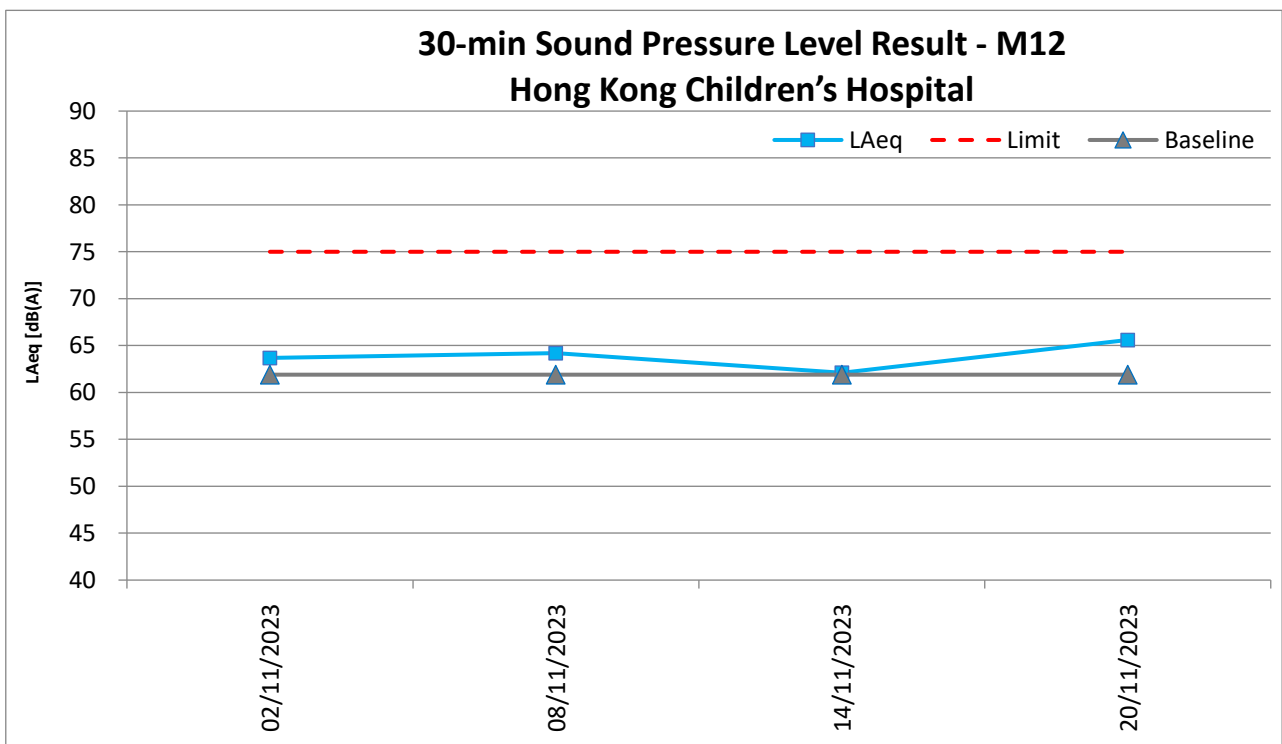
Date	Temp (°C)	Weather	Measured Noise Level at M12, dB(A)						Limit	
			Time			Baseline	L _{Aeq}	L _{A10}		L _{A90}
02/11/2023	27.4	Sunny	10:12	-	10:42	61.9	63.7	66.7	60.3	75
08/11/2023	25.7	Sunny	14:33	-	15:03	61.9	64.2	67.2	60.6	75
14/11/2023	18.8	Cloudy	13:35	-	14:05	61.9	62.1	64.3	58.8	75
20/11/2023	25.4	Sunny	10:16	-	10:46	61.9	65.6	68.8	61.9	75
Maximum							65.6			
Minimum							62.1			
Average							64.1			

L_{Aeq}, 30-min graphical results of M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop



NOTE: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (M11), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 30-min noise monitoring at M11 were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for M11 is confirmed.

L_{Aeq}, 30-min graphical results of M12 - Hong Kong Children's Hospital



Appendix M – Event and Action Plan for noise

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify Supervisor / ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, Supervisor / ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly; 3. Advise the Supervisor / ER on the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 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. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposal to IEC and Supervisor / ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, Supervisor /ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contract's working procedure; 6. Discuss remedial measures required with the IEC, Contractor and Supervisor /ER; 7. Assess effectiveness of 	<ol style="list-style-type: none"> 1. Discuss the potential remedial actions with Supervisor /ER, ET and Contractor; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and Supervisor /ER within 3 working days of notification; 3. Implement the agreed proposal; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated. <p>(The above actions should be</p>

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	<p>Contractor's remedial actions and keep IEC, EPD, and Supervisor /ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified.)</p>		<p>exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<p>taken within 2 working days after the exceedance is identified.)</p>

Appendix N – Event and Action Plan for Landscape and Visual Impact

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Design Check	<ol style="list-style-type: none"> 1. Check final design conforms to the requirements of EP and prepare report. 	<ol style="list-style-type: none"> 1. Check report. 2. Recommend remedial design if necessary. 	<ol style="list-style-type: none"> 1. Undertake remedial design if necessary. 	
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 4. Monitor remedial actions until rectification has been completed. 	<ol style="list-style-type: none"> 1. Check report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Notify Contractor. 2. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Increase monitoring frequency. 4. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If non-conformity stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Notify Contractor. 2. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.

Appendix O – Waste Flow Table

Appendix F - Monthly Summary Waste Flow Table

Name of Department: CEDD

Contract No.: ED/2018/01

Monthly Summary Waste Flow Table for October 2023

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	1.894	0.109	0.351	--	1.543	--	--	--	--	--	0.142
Feb	3.330	0.086	--	--	3.330	0.474	--	--	--	--	0.139
Mar	3.384	0.301	1.484	--	1.900	0.474	--	0.312	--	--	0.155
Apr	1.590	0.149	0.748	--	0.842	--	--	--	--	--	0.141
May	3.017	0.102	0.758	--	2.259	--	--	0.11	--	--	0.137
Jun	2.332	0.063	0.208	--	2.124	1.100	--	2023--	--	--	0.134
Sub-total	15.547	0.810	3.549	--	11.998	2.048	--	0.422	--	--	0.848
July	4.085	0.074	0.300	--	3.785	0.150	--	0.035	--	--	0.153
Aug	1.597	0.093	--	--	1.597	--	--	--	--	--	0.147
Sep	1.519	0.187	--	--	1.519	--	--	--	--	--	0.133
Oct	2.691	0.855	--	--	2.691	--	--	--	--	--	0.141
Nov											
Dec											
Total	25.439	2.019	3.849	--	21.59	2.198	--	0.457	--	--	1.422
Forecast of Total Quantities of C&D Materials to be Generated from the Contract*											
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 (see Note 3)	Chemical Waste	Others, e.g. general refuse	
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	
207.384	2.103	10.2	140	27.415	25	200	0.8	0.1	--	3.891	

- Notes: (1) The performance targets are given in **ER Appendix 8I Clause 14** and the EM&A Manual
(2) The waste flow table shall also include C&D materials to be imported for use at the Site
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and water barrier
(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³ (**ER Part 8 Clause 8.7.5(d)(ii)** refers)
(5) Assume inert C&D materials density and non-inert C&D materials are 1.9 ton/m³ and 1.5 ton/m³

**Appendix P – Environmental Mitigation Implementation Schedule
(EMIS)**

Implementation Schedule for Air Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.2		8 times daily watering of the work site with active dust emitting activities.	^
S3.2	S4.8	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 minimize cumulative dust impacts.	^
		- Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	^
		- Misting for the dusty material should be carried out before being loaded into the vehicle.	^
		- Any vehicle with an open load carrying area should have properly fitted side and tail boards.	^
		- Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	^
		- The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary, before transportation.	^
		- The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On- site unpaved roads should be compacted and kept free of lose materials.	^
		- Vehicle washing facilities should be provided at every vehicle exit point.	^
		- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	^
		- Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	^
		- Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.	^
		- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	^

Implementation Schedule for Noise Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.3		Use of quiet PME, movable barriers for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S3.3		Good Site Practice:	
S3.3		- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	^*
		- Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	^
		- Mobile plant, if any, should be sited as far away from NSRs as possible.	^
		- Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.	^
		- Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	^
		- Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	^
		- Scheduling of Construction Works during School Examination Period	N/A

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.4		<u>Construction Runoff</u> Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:	^
S3.4		- use of sediment traps.	^
S3.4		- adequate maintenance of drainage systems to prevent flooding and overflow.	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
	S5.8	- Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins.	^
	S5.8	- Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	^
	S5.8	- Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distance of 100 m should be maintained between the discharge points of construction site run-off and the existing saltwater intakes.	^
	S5.8	- Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	^
	S5.8	- Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	^
	S5.8	- Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	^
	S5.8	- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		sewerage system.	
	S5.8	- Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	^
S3.4		Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^
S3.4	S5.8	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.	^
S3.4		Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		and particularly suited to applications where the influent is pumped.	
S3.4		Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	^
S3.4		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	^
S3.4		Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
S3.4		Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	NA
S3.4	S5.8	<u>Wheel Washing Water</u> All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	^
S3.4		<u>Drainage</u> It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	^
S3.4		All temporary and permanent drainage pipes and culverts provided	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	
S3.4		All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
S3.4	S5.8	<p><u>Sewage Effluent</u></p> <p>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.</p>	^
S3.4		<p><u>Stormwater Discharges</u></p> <p>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes</p>	^
S3.4		<p><u>Debris and Litter</u></p> <p>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised</p>	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		and that disposal of any solid materials, litter or wastes to marine waters does not occur.	
	S5.8	<p><u>Boring and Drilling Water</u></p> <p>Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.</p>	^
	S5.8	<p><u>Acid Cleaning, Etching and Pickling Wastewater</u></p> <p>Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers.</p>	NA
	S5.8	<p><u>Effluent Discharge</u></p> <p>There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office (RO) of EPD.</p>	^
	S5.8	<p><u>Accidental Spillage</u></p> <p>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.</p> <p>Any service shop and maintenance facilities should be located on</p>	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	
	S5.8	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: - Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.	^
	S5.8	- Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.	^
	S5.8	- Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.5		<u>Good Site Practices</u> It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:	
S3.5		- 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.	^
	S6.7	- Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites.	^
S3.5	S6.7	- Training of site personnel in proper waste management and chemical waste handling procedures.	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.5	S6.7	- Provision of sufficient waste disposal points and regular collection for disposal.	^*
S3.5	S6.7	- Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	^
S3.5		- A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	^
	S6.7	- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	^
	S6.7	- Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	^
S3.5		<u>Waste Reduction Measures</u> Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:	
S3.5	S6.7	- Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.	NA
S3.5	S6.7	- 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.	^
S3.5	S6.7	- 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.	^
S3.5		- Any unused chemicals or those with remaining functional capacity should be recycled.	^
S3.5	S6.7	- Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	^
S3.5		<u>Construction and Demolition Materials</u> Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:	
S3.5		- Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.	
S3.5		- Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	^
S3.5		- Skip hoist for material transport should be totally enclosed by impervious sheeting.	^
S3.5		- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	^
S3.5		- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	^
S3.5		- The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.	^
S3.5		- All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	^
S3.5		- The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	^
S3.5		- When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	^
	S6.7	- Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		of waste.	
S3.5		<u>Chemical Waste</u> After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should 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.	^*
	S6.7	Separation of chemical wastes for special handling and appropriate treatment.	^
S3.5		<u>General Refuse</u> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem.	^

Implementation Schedule for Landscape and Visual Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.8.12		All existing trees should be carefully protected during construction.	^
S3.8.12		Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	NA
S3.8.12		Control of night-time lighting.	^
S3.8.12		Erection of decorative screen hoarding.	^
	S7.9	<u>Construction Site Control</u> - CM1 - Minimized construction area and contractor's temporary works areas.	^
		- CM2- Control of night-time lighting and glare by hooding all lights.	^
		- CM3 - Erection of decorative mesh screens or construction	^

Implementation Schedule for Landscape and Visual Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		hoardings around works areas in visually unobtrusive colours.	
		- CM4 - Reduction of construction period to practical minimum.	^
		- CM5 - Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas.	^
		- CM6 - Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.	NA

Remarks:			
^	Compliance of mitigation measure.	X	Non-compliance of mitigation measure.
N/A	Not Applicable at this stage.	●	Non-compliance but rectified by the contractor.
N/A (1)	Not observed.		
*	Recommendation was made during site audit but improved/rectified by the contractor.	#	Recommendation was made during audit and to be improved/ rectified by the contractor.

Mitigation Measures undertaken by the Contractor for site inspections

			
Date:	02 November 2023	Date:	02 November 2023
Mitigation Measures:	The water pump was maintained properly to ensure proper and efficient operation.	Mitigation Measures:	Equipment with NRMM label was used.
			
Date:	23 November 2023	Date:	30 November 2023
Mitigation Measures:	The portable toilets were provided in the construction site.	Mitigation Measures:	Haul road was sprayed with water to maintain the entire road surface wet.

**Appendix Q – Summaries of Environmental Complaint, Warning,
Summon and Notification of Successful Prosecution**

Reporting Month: November 2023

Contract No.	Record of Complaint (Yes/No)	Record of Warning (Yes/No)	Notification of Summons and Successful Prosecutions (Yes/No)
ED/2018/01	No	No	No

Cumulative Statistics on Complaints, Notification of Summons and Successful Prosecutions upto reporting month

Contract No.	Record of Complaint	Record of Warning	Notification of Summons and Successful Prosecutions
ED/2018/01	14	0	0

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
C0001	A dust complaint was referred from the Contractor on 21 Oct 2020 regarding a public complaint via 1823 hotline (Case no. 3-6518939602) on 20 Oct 2020.	<ol style="list-style-type: none"> 1. The water spraying system was not operated in proper time. 2. Stockpile was not covered properly. 3. Haul road was not wetted. 4. Materials transported on trucks were not provided with mechanical covers. 	<p><u>Investigation</u></p> <ol style="list-style-type: none"> 1. Based on the information provided by the Contractor on 22 Oct 2020, the water sprinklers system was sprayed every 15 minutes with 70 seconds interval automatically. For the area that water sprinklers system was not covered, manual water spraying was provided. Dump trucks were covered with mechanical cover after loading the materials. The stockpile area was covered by the tarpaulin during night time. 2. Based on the monitoring results on 16 Oct 2020, the 1-hour and 24-hour TSP results were below the Action Levels and Limit Levels. 3. Regular site inspection was conducted by ET on 22 Oct 2020, no adverse observation against the dust impact was recorded. <p><u>Action taken</u></p> <p>As per the Contractor, the water sprinkler are now adjusted to start at 8:00am and end at 6:00pm for Monday to Saturday while from 8:00am to 5:00pm on Sunday. Water spraying are set with 5-minute time interval with duration 30-60 seconds.</p> <p><u>Recommendations</u></p> <p>To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:</p> <ol style="list-style-type: none"> 1. Increase the frequency and duration for automatic water spraying system. 2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 3. Ensure stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting at all time except during working 	<ul style="list-style-type: none"> - Closed-out on 5 Nov 2020. - No further complaint was received.

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			process.	
C0002	A dust complaint was referred from the Contractor on 8 Sep 2021 through E-Mail regarding a complaint received by EPD (EPD ref.: K19/RE/00021205-21) on 7 Sep 2021.	Complaint of dust problem at the pavement of Muk Tai Street near Sports Park.	<p><u>Investigation</u> As per contractor, part of the complaint area was within the site boundary of the project.</p> <ol style="list-style-type: none"> 1. Manual water spraying was provided. 2. The exposed surface and stockpile areas were covered by the impermeable tarpaulin sheet. <p><u>Action taken</u> The exposed surface and stockpile area was covered by the impermeable tarpaulin sheet.</p> <p><u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however the contractor is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Ensure stockpiling sites should be lined with impermeable sheeting and banded. 2. Stockpiles should be fully covered by impermeable sheeting at all time except during working process. 3. Ensure the work fulfill the relevant statutory requirements on control of air pollution. 4. Take necessary measures to minimize the environmental nuisance arising from the construction site. 	<ul style="list-style-type: none"> - Closed-out on 4 Oct 2021. - No further complaint was received.
C0003	A water discharge complaint was referred from the Contractor on 10 Dec 2021 through E-Mail regarding a complaint received by	Complaint of muddy water being discharged into the sea of To Kwa Wan Typhoon Shelter via a DSD outfall near the roundabout of Shing Fung Road.	<p><u>Investigation</u> Joint site inspection was conducted by ER, IEC, ET and the contractor on 14 Dec 2021, no adverse observation against the water impact was recorded.</p> <ol style="list-style-type: none"> 1. There was no muddy water discharge to DSD outfall near the roundabout of Shing Fung Road. 	<ul style="list-style-type: none"> - Closed-out on 5 Jan 2022. - No further complaint was

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	EPD (ref.: K19/RE/00029046-21) on 9 Dec 2021.		<p>2. The sandbag with layers and filter were provided at the manholes.</p> <p><u>Action taken</u></p> <ul style="list-style-type: none"> - Sandbags and filter were used to block the manholes. - Manholes had been adequately covered and replace the filter frequently. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the water nuisance was caused by the contractor at the complaint area. Some of muddy water generated from wheel washing might be flow to the outfall inside the site boundary, however the contractor had taken the mitigation measure by using sandbag and filter to ease the nuisance. The contractor is recommended to implement the following measures to minimize the impact for waste water:</p> <ol style="list-style-type: none"> 1. Enhance the sandbag with several layers instead of one layer only and replace the filter frequently. 2. Modify the wheel washing area such that the muddy water will be directly flow to the pit and then waste water treatment facility. 3. Take necessary measures to minimize the environmental nuisance arising from the construction site. 	received.
C0004	A dust complaint was received by EPD on 16 Dec 2022. Contractor received Notification of Environmental Complaints from EPD	Complaint of mud/ silt being brought out by vehicles from the project site casing mud/silt accumulation on Shing Fung Road.	<p><u>Investigation</u></p> <p>Regular site inspection was conducted by ET on 29 Dec 2022.</p> <ol style="list-style-type: none"> 1. As per the Contractor, mud / slit generated from nearby construction sites might be brought to Shing Fung Road roundabout. 2. No adverse observation against the dust impact was recorded during site inspection. 	<p>- Closed-out on 13 Jan 2023.</p> <p>- No further complaint was received.</p>

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	(ref.: K19/RE/00029136-22) by E-Mail on 22 Dec 2021.		<p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Watering manually frequently. 2. Haul Road surfaces were wetted by water truck. 3. Wheel washing for the trucks and vehicles before leaving the project site. <p><u>Recommendations</u></p> <p>To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:</p> <ol style="list-style-type: none"> 1. Increase the frequency and duration for automatic water spraying system. 2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 3. Regular wash and clean the share haul road and roundabout in Shing Fung Road. 4. Wheel washing for the trucks and vehicles before leaving the project site. The muddy water after the wheel washing should be directed to sedimentation tank and wastewater treatment facility before discharging to gully. 5. Ensure stockpiling sites should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process. 6. Dusty materials transported on truck shall be covered. 	
C0005	A noise complaint was received by EPD on 21 Dec 2022. Contractor received Notification of Environmental	Complaint of construction noise arising from the project site near Shing Kai Toad and Muk Tai Street continued to 01:30 am on 21 Dec 2022.	<p><u>Investigation</u></p> <p>Regular site inspection was conducted by ET and the Contractor on 29 Dec 2022</p> <ol style="list-style-type: none"> 1. As per the Contractor, the complaint was still under investigation and could not conclude the complaint related to the project site or not. 2. Status of CNPs in the works area near Shing Kai Road and 	- During the SSMEC meeting on 10 Jan 2023, the Contractor explained

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations		Close-Out Date / Status									
	Complaints from EPD (EPD ref.: K19/RE/00029422-22) on 22 Dec 2022. IEC received the notification on 22 Dec 2022 from EPD and forwarded the notification to CEDD, Contractor, ER and ET on same day.		<p>Muk Tai Street were checked and all of them were valid.</p> <table border="1"> <thead> <tr> <th>Construction Noise Permit</th> <th>Valid Form</th> <th>Valid Till</th> </tr> </thead> <tbody> <tr> <td>GW-RE1297-22</td> <td>10 Dec 2022</td> <td>08 Jun 2023</td> </tr> <tr> <td>GW-RE1299-22</td> <td>17 Dec 2022</td> <td>15 Jun 2023</td> </tr> </tbody> </table> <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Trainings for CNP were provided to the labour on 22 Dec 2022. 2. No construction activities were allowed in the restricted hours for those areas without valid CNP. <p><u>Recommendations</u></p> <p>To minimize the impact for construction noise, mitigation measures are recommended:</p> <ol style="list-style-type: none"> 1. Training to new staff and regular enhance training for staff for CNP and other environmental issues. 2. Regularly check the status of ALL CNP and other environmental permits. 		Construction Noise Permit	Valid Form	Valid Till	GW-RE1297-22	10 Dec 2022	08 Jun 2023	GW-RE1299-22	17 Dec 2022	15 Jun 2023	that the noise complaint case has already passed to head office and waiting for the Legal opinion. No further information could be provided for Incident Report on Complaint Investigation at that moment. - Under investigation in the reporting month.
Construction Noise Permit	Valid Form	Valid Till												
GW-RE1297-22	10 Dec 2022	08 Jun 2023												
GW-RE1299-22	17 Dec 2022	15 Jun 2023												
C0006	A dust complaint was received by EPD on 6 Dec 2022. Contractor (POC)	Complaint of construction dust arising from construction sites along Shing Fung Road.	<p><u>Investigation</u></p> <p>Site inspections were conducted by ET on 26 Jan 2023 and joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 8 Feb 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (roundabout) is the common road for 		- Closed-out on 16 Mar 2023.									

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	<p>received Notification of Environmental Complaints from EPD (ref.: K19/RE/00027862-22) by E-Mail on 7 Dec 2022.</p> <p>IEC received the notification on 19 Jan 2023 and forwarded the notification to CEDD, ER and ET on same day.</p>		<p>public vehicles. In addition, construction vehicles from several nearby construction sites also use the concerned road, especially a lots of dump trucks.</p> <ol style="list-style-type: none"> 2. Construction vehicles from Contractor (POC) project site are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. 3. Worker of sub-contractor from Contractor (POC) wetted the part of the concerned road surface during the site inspection on 8 Feb 2023 to suppress dust emission. 4. No construction works was observed on 26 Jan 2023 and no adverse observation against the dust impact were found during the site inspection on both dates. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 2. Wheel washing for the trucks and vehicles before leaving the project site directly through Shing Fung Road exit. 3. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted manually in regular basis. 2. Regular wash the share haul road and roundabout in Shing Fung Road. 3. Wheel washing for the trucks and vehicles before leaving 	

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<p>the project site. The muddy water after the wheel washing should be directed to sedimentation tank and wastewater treatment facility before discharging to gully.</p> <p>4. Dusty materials transported on truck shall be covered.</p>	
C0007	<p>A dust complaint was received by EPD on 19 Jan 2023.</p> <p>Contractor (POC) received Notification of Environmental Complaints from EPD (ref.: K19/RE/00001988-23) by E-Mail on 2 Feb 2023.</p> <p>IEC received the notification on 2 Feb 2023 and forwarded the notification to CEDD, ER and ET on the same day.</p>	<p>Complaint of dusty environment at the new road connecting Shing Fung Road and Shing Kai Road caused by vehicles from construction sites nearby.</p>	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 8 Feb 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. 2. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 4. Worker of sub-contractor from Contractor (POC) wetted the part of the concerned road surface during the site inspection on 8 Feb 2023 to suppress dust emission. 5. No adverse observation against the dust impact were found during the site inspection along the new road. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 2. Wheel washing for the trucks and vehicles before leaving the project site. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. <p><u>Recommendations</u></p>	<p>- Closed-out on 16 Mar 2023.</p>

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 2. Regular wash the share haul road in Shing Fung Road. 3. Wheel washing for the trucks and vehicles before leaving the project site. The muddy water after the wheel washing should be directed to sedimentation tank and wastewater treatment facility before discharging to gully. 4. Dusty materials transported on truck shall be covered. 	
C0008	<p>A dust complaint was received by EPD on 13 Feb 2023.</p> <p>Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00003909-23) by E-Mail on 17 Feb 2023 and forwarded the E-mail to ER, ET and IEC on same day.</p>	<p>Complaint of silt / mud accumulation on the new road connecting Shing Fung Road and Shing Kai Road caused by vehicles from construction sites nearby.</p>	<p><u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 23 Feb 2023 and regular site inspection was conducted by Contractor (POC), ER and ET on 2 Mar 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust nuisance. 2. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 4. As per Contractor (POC), EPD conducted site visit on 16 Feb 2023. 5. No adverse observation against the dust / muddy water impact were found during the site inspection on both dates. 	- Closed-out on 29 Mar 2023.

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
			<p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. 2. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 3. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 4. Wheel washing for the trucks and vehicles before leaving the project site. 5. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow: <table border="1" data-bbox="1146 852 1904 1029"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> 6. During the two site inspections, mitigation measures implemented by the Contractor (POC) were found properly based on existing site condition and resources. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
Date	Road Washing by													
8 Mar 2023	Sweeper truck with water spraying truck													
9 Mar 2023	Sweeper truck with water spraying truck													
14 Mar 2023	Sweeper truck with water spraying truck													
22 Mar 2023	Sweeper truck with water spraying truck													

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			2. Regular wash the share haul road in Shing Fung Road. 3. Dusty materials transported on truck shall be covered.	
C0009	<p>A dust complaint was received by EPD on 15 Feb 2023.</p> <p>Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00004280-23) by E-Mail on 22 Feb 2023 and forwarded the E-mail to ER, ET and IEC on same day.</p>	<p>Complaint of mud / silt being brought out by vehicles from construction site at Shing Fung Road roundabout (near Lamp Post DF4831) causing mud / silt accumulation along Shing Fung Road.</p>	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 23 Feb 2023 and regular site inspection was conducted by Contractor (POC), ER and ET on 2 Mar 2023.</p> <ol style="list-style-type: none"> The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust nuisance. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. As per Contractor (POC), EPD conducted site visit on 16 Feb 2023. No adverse observation against the dust impact were found during the site inspection on both dates. <p><u>Action taken</u></p> <ol style="list-style-type: none"> Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. Wheel washing for the trucks and vehicles before leaving 	<p>- Closed-out on 29 Mar 2023.</p>

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
			<p>the project site.</p> <p>5. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> <p>6. During the two site inspections, mitigation measures implemented by the Contractor (POC) were found properly based on existing site condition and resources.</p> <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 2. Regular wash the share haul road in Shing Fung Road. 3. Dusty materials transported on truck shall be covered. 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
Date	Road Washing by													
8 Mar 2023	Sweeper truck with water spraying truck													
9 Mar 2023	Sweeper truck with water spraying truck													
14 Mar 2023	Sweeper truck with water spraying truck													
22 Mar 2023	Sweeper truck with water spraying truck													
C0010	<p>A dust and muddy water complaint was received by Hotline 1823 on 9 Mar 2023.</p> <p>ER received the transfer from the Hotline 1823 on 9 Mar 2023 and forwarded the E-mail to</p>	<p>Complaint of dusty environment at the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road roundabout.</p> <p>Worker wetted the road surface and might cause mud / silt problem.</p>	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER, and ET on 16 Mar 2023 and 23 Mar 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust nuisance. 2. Construction vehicles from POC are not allowed leaving the 	- Closed-out on 6 Apr 2023.										

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
	Contractor (POC), ET and IEC on same day.		<p>site to Shing Fung Road directly with barriers blocked since 21 Jan 2023.</p> <ol style="list-style-type: none"> 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 4. The sandbags were provided around the manholes. 5. No adverse observation against the dust / muddy water impact were found during the site inspection on both dates. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. 2. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 3. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 4. Wheel washing for the trucks and vehicles before leaving the project site. 5. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow: <table border="1" data-bbox="1146 1114 1904 1289"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> 6. The sandbags were provided around the manholes. 7. During the two site inspections, mitigation measures implemented by the Contractor (POC) were found properly based on existing site condition and resources. 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
Date	Road Washing by													
8 Mar 2023	Sweeper truck with water spraying truck													
9 Mar 2023	Sweeper truck with water spraying truck													
14 Mar 2023	Sweeper truck with water spraying truck													
22 Mar 2023	Sweeper truck with water spraying truck													

Complaint Log for ED/2018/01										
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status						
			<u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air and water quality: <ol style="list-style-type: none"> Dusty materials transported on truck shall be covered. Enhance the sandbags with several layers of filters and replace the filter frequently. 							
C0011	A muddy water complaint was received by EPD on 9 Mar 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00004280-23) by E-Mail on 22 Feb 2023 and forwarded the E-mail to ER, ET and IEC on same day.	Complaint of water being sprayed onto vehicles passing by and mud / silt being washed into roadside gully near Shing Fung Road roundabout.	<u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER and ET on 23 Mar 2023. <ol style="list-style-type: none"> The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust / mud / silt nuisance. The sandbags were provided around the manholes. No adverse observation against the muddy water impact were found during the site inspection on both dates. <u>Action taken</u> <ol style="list-style-type: none"> As per Contractor (POC), no manually road surfaces watering on Shing Fung Road after receiving complaint (16 Mar 2023). As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow: <table border="1" data-bbox="1146 1316 1904 1422"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	- Closed-out on 6 Apr 2023.
Date	Road Washing by									
8 Mar 2023	Sweeper truck with water spraying truck									
9 Mar 2023	Sweeper truck with water spraying truck									

Complaint Log for ED/2018/01					
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations		Close-Out Date / Status
			14 Mar 2023	Sweeper truck with water spraying truck	
			22 Mar 2023	Sweeper truck with water spraying truck	
			3. The sandbags were provided around the manholes.		
			<u>Recommendations</u> There was no direct evidence showing that the muddy water nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air and water quality: 1. Enhance the sandbags with several layers of filters and replace the filter frequently.		
C0012	A dust complaint was received by EPD on 31 May 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00013488-23) by E-Mail on 6 June 2023 and forwarded the E-mail to ER, ET and IEC on same day.	Complaint of silt / mud accumulation on the new road connecting Shing Fung Road and Shing Kai Road caused by vehicles from construction site nearby.	<u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER and ET on 8 June 2023. 1. As per Mr. Tony Tang from POC, the concerned area was the section of Shing Fung Road at the entrance of Gammon site accommodation. 2. The new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 December 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust / silt nuisance. 3. As per Mr. Tony Tang from POC, recycled water was used in wheel washing machine near the entrance of Gammon site. Those are the possible sources of mud nuisance. 4. No adverse observation against the dust impact were found during the site inspection. <u>Action taken</u> 1. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and		- Closed-out on 19 June 2023.

Complaint Log for ED/2018/01																						
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status																		
			<p>Shing Kai Road) and Shing Fung Road by water truck was conducted twice a week start from 11 May 2023.</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>19 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>23 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>25 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>30 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>2 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>6 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>13 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> <p>2. Wheel washing for the vehicles before leaving the construction site.</p> <p><u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Regular wash the share haul road in Shing Fung Road and Shing Kai Road. 2. Dusty materials transported on truck should be covered. 	Date	Road Washing by	19 May 2023	Sweeper truck with water spraying truck	23 May 2023	Sweeper truck with water spraying truck	25 May 2023	Sweeper truck with water spraying truck	30 May 2023	Sweeper truck with water spraying truck	2 June 2023	Sweeper truck with water spraying truck	6 June 2023	Sweeper truck with water spraying truck	9 June 2023	Sweeper truck with water spraying truck	13 June 2023	Sweeper truck with water spraying truck	
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6 June 2023	Sweeper truck with water spraying truck																					
9 June 2023	Sweeper truck with water spraying truck																					
13 June 2023	Sweeper truck with water spraying truck																					
C0013	<p>A water complaint was received by EPD on 19 June 2023.</p> <p>Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00014944-23)</p>	<ul style="list-style-type: none"> - Complaint of muddy water being discharged into Kai Tak Approach Channel on 18 Jun 2023. - Complaint of construction work being conducted on the Sunday of 18 Jun 2023. 	<p><u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER and ET on 6 Jul 2023.</p> <ol style="list-style-type: none"> 1. As per Mr. Tony Tang from POC, the concerned area was the section of Shing Fung Road at the nearby channel. 2. Heavy raining was recorded on 18 Jun 2023. The recorded rainfall was 35.8mm (sourced from manned weather station of Hong Kong Observatory at https://www.hko.gov.hk/en/cis/dailyExtract.htm?v=2023&m=6). The implication of heavy rainfall storm runoff 	- Closed-out on 2 Aug 2023.																		

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	by E-Mail on 29 June 2023 and forwarded the E-mail to ER, ET and IEC on 4 July 2023.		<p>might wash across the exposed soil surfaces which was direct muddy water discharge. This is the possible source of water nuisance.</p> <ol style="list-style-type: none"> As per Mr. Tony Tang from POC, no construction work was conducted on 18 Jun 2023. Based on the attendance record, 6 employees including 4 watchman, labourer and driver, were on site on 18 Jun 2023 and they were not involved in the construction work. In the joint site inspection, no construction work was conducted on the nearby channel. No adverse observation against the muddy water impact were found during the site inspection on 14 and 20 June 2023, and 6 July 2023. The sedimentation tank and wastewater treatment plant are operating efficiently during the site inspection. <p><u>Action taken</u></p> <ol style="list-style-type: none"> The ditch is maintained regularly and excavated deeper by workers. Pumps are placed at the ditch to prevent flooding and overflow. Enhanced training for site workers to prevent flushing during heavy rain by placing pumps in the ditch to prevent flooding and overflow during periods of heavy rain during Tool- Box-Talk training. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the muddy water nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for water quality:</p> <ol style="list-style-type: none"> Regular cleaning and maintenance drainage systems at the nearby Kai Tak Approach Channel. 	

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
C0014	A polluting discharge complaint was received by EPD on 16 October 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00024581-23) by E-Mail on 19 October 2023 and forwarded the E-mail to ER, ET and IEC on 21 October 2023.	- Complaint of polluting discharge from the construction site of Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City (“illegal discharge from kai tak 6577 construction site the main contractor should be hip hing)	<p><u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER and ET on 26 October 2023.</p> <ol style="list-style-type: none"> 1. The concerned area is near at Former Runway and South Apron, Kowloon City. Those are the possible sources should be illegal discharge from Kai Tak 6577 construction site which the main contractor should be hip hing. The possible source of polluting discharge does not come from the Contractor (POC). 2. No adverse observation against the muddy water impact were found during the site inspection on dates. No surface runoff is observed, and the sedimentation tank and wastewater treatment plant were implemented normally. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. As per Contractor (POC), no wastewater generated at concerned area and ensure fulfil the conditions stipulated in the valid WPCO licence after receiving complaint (16 October 2023). The effluent discharge has been implemented properly. 2. The silt curtain has been installed around the construction activities at the concerned area. (referring to Photo 2) The sedimentation tank and wastewater treatment has been implemented properly. 3. The pump has been installed and collected sewage 	- Closed-out on 15 November 2023.

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<p>at the channel which can minimize water quality impacts and prevent overload the foul sewage system. (referring to Photo 3) The channel and ditches have been clear after receiving complaint.</p> <p><u>Recommendations</u> There was no direct evidence showing that the muddy water nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for water quality:</p> <ol style="list-style-type: none"> 1. The silt removal facilities, channels and manholes should be maintained regularly. 2. The silt curtain and equipment should be properly maintained. 	

**FUGRO TECHNICAL SERVICES
LIMITED**

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1 Kwai On Road,
Kwai Chung, N.T.,
Hong Kong.

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Fax : +852 2450 8032
E-mail : mcl@fugro.com
Website : fugro.com



Appendix C

**Monthly EM&A Report
For**

Contract No. ED/2018/05


Kai Tak Development – Stage 5B infrastructure works at the former north apron area

Environmental Monitoring and Audit Report
for
Contract No. ED/2018/05 –
Kai Tak Development – Stage 5B infrastructure
works at the former north apron area

Contract No.: EDO 2/2020

November 2023

(Version 1.1)

Certified By:  _____

(Environmental Team Leader)

Date: 14 December 2023

Your ref:

Our ref: PL-202312019

AECOM Asia Company Limited
12/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, New Territories,
Hong Kong

Attn.: Ms. Mavis Law, SRE

Dear Ms. Law,

Re: Agreement No. EDO 6/2019

**Independent Environmental Checker for Contract No. ED/2018/05 Kai Tak Development –
Stage 5B Infrastructure Works at the Former North Apron Area
Verification of Monthly EM&A Report (November 2023)**

Reference is made to the Monthly EM&A Report (November 2023) (Version 1.1) issued by the Environmental Team on 14 December 2023.

Please be informed that we have no adverse comment on the captioned submission. We hereby verify the Monthly EM&A Report (November 2023) in accordance with Condition 3.3 of Environmental Permit No. EP-337/2009.

Thank you for your attention.

Yours sincerely,

For and on behalf of

Acuity Sustainability Consulting Limited



Kevin Li

Independent Environmental Checker

c.c.	CEDD	Attn.: Mr. Albert Tse	By email
	Ka Shing	Attn.: Mr. Chan Pang (ETL)	By email

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EXECUTIVE SUMMARY

1. This is the 34th Monthly Environmental Monitoring & Audit (EM&A) report which summarises the findings of the EM&A Programme during the reporting period from 1 to 30 November 2023.

Breaches of Action and Limit Levels

2. 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
3. 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
4. Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

Table I Non-compliance Record in the Reporting Month

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Construction noise	0	0	N/A

Complaint log

6. No complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table II.

Table II Summary of complaints in the Reporting Month

Date of complaint received	Date of complaint	Description of complaint	Recommendations / Action taken	Close-out date / Status
No complaint was received in the reporting month.	NA	NA	NA	NA

Notifications of summons and successful prosecutions

7. No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table III.

Table III Summary of summons and successful prosecutions in the Reporting Month

Date of receiving notification of summons or prosecutions	Date of event	Description of event	Action taken	Close-out date / Status
No notification of summons and successful prosecutions were received in the reporting month.	NA	NA	NA	NA

Report changes

8. There was no reporting change in the reporting month.

Key construction works in the reporting month

9. Major construction activities undertake during the reporting month included:
- Erect falsework and working platform for Decking of Elevated Walkway LW-02
 - RC Construction for Decking of Elevated Walkway LW-02
 - RC Construction of LW02 Lift and Staircase
 - Installation of post tensioning anchorage system at LW-02
 - Construction of Permanent Shaft Structure of SB-01
 - Road and Drain Construction works for Road L16, Commercial Street and Road D1
 - Construction works for DCS

- Modification works for Rising Main chamber WOC1, AVC2 and K1
- Road and drain construction works at Olympic Avenue
- Renovation works for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Construction of Retaining Wall Type 1 for S14
- Construction of Pile Cap for S14
- Demolition of bearing wall of S14
- Construction works for SMH404 and SMH505

Future key issues

10. The future key issues and potential impact in the coming month are given in Table IV.

Table IV Summary of future key issues and potential impact in the coming month

Future key issues in the coming month	Potential impact
Erect falsework and working platform for Decking of Elevated Walkway LW-02	Noise and Air Quality
RC Construction for Decking of Elevated Walkway LW-02	Noise and Air Quality
RC construction of LW02 lift and staircase	Noise and Air Quality
Installation of post tensioning anchorage system at LW-02	Noise and Air Quality
Construction of Permanent Shaft Structure of SB-01	Noise and Air Quality
Road and drain construction works of Road L16, Commercial Street and Road D1	Noise and Air Quality
Construction works for DCS	Noise and Air Quality
Road and Drain Construction works at Olympic Avenue	Noise and Air Quality
Renovation works for Subway KS10 Lift and Staircase	Noise and Air Quality
Renovation works for existing Subways KS9, KS32 and KS10	Noise and Air Quality
Construction of Retaining Wall Type 1 for S14	Noise and Air Quality
Construction of Pile Cap for S14	Noise and Air Quality
Demolition of bearing wall of S14	Noise and Air Quality
Construction works for SMH404 and SMH505	Noise and Air Quality

1. INTRODUCTION

Project Background

- 1.1 The Kai Tak Development (KTD) is located in the southern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.2 Contract No. ED/2018/05 - Kai Tak Development – stage 5B infrastructure works at the former north apron area (The Project), comprises mainly the design and construction of a section of dual two-lane Road D1; single two-lane Road L9 and Road L16; a single-lane slip road S14; a pedestrian subway SB-01; an elevated walkway LW-02; renovation of the existing pedestrian subways KS9, KS10 and KS32, as well as modification of the southern end of the existing pedestrian subway KS10; associated footpaths, street lighting, traffic aids, drainage, sewerage, water mains, landscaping, electrical and mechanical works, and ancillary works. The proposed works are shown in Figure 1 and Figure 2. The proposed works and site boundary are shown in Figure 3 and Figure 4. Civil Engineering and Development Department (CEDD) had completed an Environmental Impact Assessment (EIA) and is the Permit Holder.
- 1.3 In accordance with the approved EIA Reports, Environmental Monitoring and Audit (EM&A) programmes are recommended to ensure compliance with the EIA study recommendations. The project proponent was the Civil Engineering and Development Department (CEDD). AECOM Asia Co. Ltd. (AECOM) was commissioned by CEDD as Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual). Acuity Sustainability Consulting Limited (Acuity) was commissioned as the Independent Environmental Checker (IEC). Build King – STEC Joint Venture (Build King) was appointed as the main Contractor for the construction works of Contract No. ED/2018/05. Ka Shing was commissioned by CEDD to undertake the role of the Environmental Team (ET) to implement the EM&A programme for The Project.
- 1.4 The construction work under ED/2018/05 comprises the EM&A Manual (EIA Register No. AEIAR-130/2009 for Kai Tak Development) and Environmental Permit No. EP- 337/2009.
- 1.5 Air quality and noise monitoring has been proposed in the EM&A Manual with EIA Register No. AEIAR-130/2009 for Kai Tak Development.

Project Organization

1.6 The project organization chart and with respect to the EM&A programme is shown in Appendix A. Information of key personnel contact names and telephone numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Role	Contact Person	Position	Phone No.	E-mail
Civil Engineering and Development Department (CEDD)	Project Proponent	Mr. Dennis Fung	Permit Holder	3842 7087	dycfung@cedd.gov.hk
AECOM Asia Co. Ltd. (AECOM)	Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual)	Mr. Vincent Lee	Supervisor's Delegate	2798 0771	sre2@ktd-stage5.com
Acuity Sustainability Consulting Limited (Acuity)	Independent Environmental Checker (IEC)	Mr. Kevin Li	IEC	9779 2247	kevin.li@aurecongroup.com
Ka Shing Management Consultant Limited (Ka Shing)	Environmental Team (ET)	Mr. Pang Chan	ET Leader	6082 2973	stage5b@ka-shing.net
Build King – STEC Joint Venture (BK-STECC)	Contractor	Mr. Rex Lau	Contractor's Representative	6282 5154	rex.lau@buildking.hk

Works Area and Construction Programme

1.7 The construction works commenced on 16 February 2021. The construction programme of the Project is given in Appendix B.

Construction works undertaken during reporting month

1.8 Major construction works of the Project in the reporting month are summarized in Table 1.2:

Table 1.2 Major activities of the Project during reporting month

Erect falsework and working platform for Decking of Elevated Walkway LW-02	Road and Drain Construction works at Olympic Avenue
RC Construction for Decking of Elevated Walkway LW-02	Renovation works for Subway KS10 Lift and Staircase
RC Construction of LW02 Lift and Staircase	Renovation works for existing subways KS9, KS32 and KS10
Installation of post tensioning anchorage system at LW-02	Construction of Retaining Wall Type 1 for S14
Road and Drain Construction works for Road L16, Commercial Street and Road D1	Construction of Pile Cap for S14
Construction works for DCS	Demolition of bearing wall of S14
Modification works for Rising Main chamber WOC1, AVC2 and K1	Construction of Permanent Shaft Structure of SB-01
Construction works for SMH404 and SMH505	

Submission Status under the Environmental Permits

1.9 The status of required submission under Environmental Permit (EP) conditions under EP-337/2009 are summarized in Table 1.3.

Table 1.3 Summary of Status of Required Submission of EPs

EP Condition EP-337/2009	Submission	Submission Date
Condition 1.11	Notification of Commencement Date of Construction of the Project	12 Jan 2021
Condition 2.3	Management Organization of Main Construction Companies	21 Sep 2020
Condition 2.3	Updated Management Organization of Main Construction Companies	4 July 2022
Condition 2.4	Design Drawings	12 Jan 2021
Condition 2.11	Landscape Mitigation Plans	17 Dec 2020
Condition 3.2	Baseline Monitoring Report	12 Jan 2021
Condition 3.3	Monthly EM&A Report (Oct 2023)	22 Nov 2023

2. AIR QUALITY MONITORING

Monitoring Requirements

2.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), impact air quality monitoring shall be carried out during the construction phase of the Project. For regular impact monitoring, a sampling frequency of at least once in every six days will be strictly observed at all of the monitoring stations for 24-hour TSP. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days will be undertaken when the highest dust impact occurs.

Monitoring Locations

2.2 Two designated monitoring stations were selected for air quality monitoring programme. Impact air quality monitoring was conducted at two air quality monitoring stations in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in Figure 5.

Table 2.1 Locations of Air Quality Monitoring Stations

Air Quality Monitoring Locations for the Project	Location of Measurement
AM2(A) – Ng Wah Catholic Secondary School	Rooftop
AM3 – Sky Tower	Podium floor near T7

Monitoring Parameters, Frequency and Duration

2.3 The air quality monitoring locations and monitoring frequency are listed in Table 2.2.

Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration

Air Monitoring Station	Location for Measurement	Parameter	Duration	Frequency
AM2(A) – Ng Wah Catholic Secondary School	Rooftop	- 24-hour average TSP	- 24 hours	- Once every 6 days

Air Monitoring Station	Location for Measurement	Parameter	Duration	Frequency
AM3 – Sky Tower	Podium Floor near Tower 7	- 1-hour average TSP	- 1 hour	- Three times every 6 days

2.4 The monitoring schedule for reporting month and next month is presented in Appendix C.

2.5 Photographic records of the impact monitoring setup are shown in Appendix D.

Monitoring Equipment

2.6 24-hour average TSP and 1-hour average TSP levels were measured for impact monitoring. 24-hour average TSP levels were measured by the High Volume Samplers (HVS) and 1-hour average TSP levels were measured by direct reading method to indicate short-term impacts. Wind data monitoring equipment was set up at conspicuous locations for logging wind speed and wind direction near to the dust monitoring locations. Table 2.3 summarizes the equipment to be used in the air quality monitoring.

Table 2.3 Air Quality Monitoring Equipment

Equipment	Model	Quantity	Calibration Interval
HVS Sampler	TE-5170 X c/w of TSP sampling inlet	2	2 months
HVS Calibrator	TISCH TE-5025A	1	1 year
1-hour TSP Dust Meter	TSI Model AM510 SidePak Personal Aerosol Monitor	2	1 year
Weather Station	Davis Vantage Pro2 Weather Station	1	6 months

2.7 High volume samplers (HVS) (TE-5170 X c/w of TSP sampling inlet) comprising with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

2.8 Calibration certificates, catalogue of equipment are given in Appendix E.

Monitoring Methodology and QA/QC Procedure

24-hour TSP Monitoring

Operating/Analytical Procedures

2.9 Setup criteria of HVS are shown as follows:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- No two samplers were placed less than 2m apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2m of separation from walls, parapets and penthouses was set for the rooftop samples.
- A minimum of 2m separation from any supporting structure, measured horizontally was set.
- No furnaces or incineration flues was nearby.
- Airflow around the sampler was unrestricted.
- Any wire fence and gate, to protect the samplers, was not caused any obstruction during monitoring.
- Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity was provided to operate the samplers.

2.10 Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m³/min. and 1.7 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.11 For TSP sampling, Glass Fiber Filter Media 8" x 10" having a collection efficiency of > 99 % for particles of 0.3 μm diameter were used.

2.12 The power supply was checked to ensure the sampler worked properly and then placed any filter media at the designated air quality monitoring station.

2.13 The filter holding frame was removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure was sufficient to avoid air leakage at the edges.

2.15 The shelter lid was closed and secured with the aluminium strip.

2.16 The timer was programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

2.17 After sampling, the filter was removed from the HVS and put into a clean and labeled seal plastic bag to avoid cross contamination. The elapsed time was also be recorded. The sampled filters were sent to the HOKLAS accredited or other internationally accredited laboratory for weighting.

Maintenance/Calibration

2.18 The following maintenance/calibration are required for the HVS:

- The HVS and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

1-hour TSP Monitoring

Measurement Procedures

2.19 The measurement procedures of the 1-hour TSP were conducted in accordance with the Manufacturer's Instruction Manual as follows:

- Set up the dust meter on a tripod at 1.2m level.
- Turned on the dust meter and check the battery, if too low, change new ones. Pointed the meter to the source area or the planned measurement area.
- The zero calibration of the instrument was conducted before and after each sampling.
- TSP levels were recorded for 1-hour with 5-minute data logging interval.
- Recorded down the general meteorological conditions, Test ID no., start/end time, spot check reading at each sampling location for data processing.

- Recorded any activities that may generate dust during measurement period.

Maintenance/Calibration

2.20 The following maintenance/calibration are required for the direct dust meters:

- To validate the accuracy of dust meter, compare the results measured by dust meter and HVS every 12 months throughout all stages of the air quality monitoring.

Wind Data Monitoring

2.21 Wind Anemometer was installed at the roof-top of AM2(A) – Ng Wah Catholic Secondary School with 10m above ground and clear of constructions or turbulence caused by the buildings.

2.22 The wind data was captured by a data logger and the data was downloaded at least once per month for analysis.

2.23 The wind data monitoring equipment will be re-calibrated at least once every six months.

2.24 Wind direction is divided into 16 sectors of 22.5 degrees each.

2.25 Details of weather information during the monitoring period are shown in Appendix F.

Action and Limit Levels

2.26 The Action and Limit Levels of 24-hour average TSP and 1-hour average TSP are summarized in Table 2.4 and Table 2.5 respectively.

Table 2.4 Action and Limit Levels of 24-hour average TSP for Construction Dust Monitoring

Parameter	Air Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
24-hour average TSP	AM2(A)	175	260
	AM3	172	260

Table 2.5 Action and Limit Levels of 1-hour average TSP for Construction Dust Monitoring

Parameter	Air Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
1-hour average TSP	AM2(A)	302	500
	AM3	301	500

Impact Air Quality Monitoring results

2.27 Impact monitoring results for 24-hour average TSP and 1-hour average TSP levels at the designated air quality monitoring stations are summarized in Table 2.6 and Table 2.7 respectively.

Table 2.6 Summary of 24-hour average TSP Monitoring Data during the reporting month

Air Quality Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2(A)	39	32 – 51	175	260
AM3	54	45 – 71	172	260

Table 2.7 Summary of 1-hour average TSP Monitoring Data during the reporting month

Air Quality Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2(A)	46	32 – 56	302	500
AM3	54	39 – 73	301	500

2.28 There was no Action and Limit Level exceedance of 24-hour average TSP and 1-hour average TSP levels recorded during the reporting month.

2.29 Graphical presentation and detailed monitoring results of 24-hour average TSP and 1-hour average TSP levels are shown in Appendix G and Appendix H respectively.

2.30 The Event and Action Plan is provided in Appendix I.

2.31 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

2.32 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.

3. NOISE MONITORING

Monitoring Requirements

- 3.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), impact noise monitoring shall be carried out during the construction phase of the Project.
- 3.2 Regular monitoring, $L_{Aeq, 30\text{-minute}}$, for each station will be on a weekly basis and conduct one set of measurements between 0700 – 1900 hrs on normal weekdays.
- 3.3 If construction works are extended to include works during 1900 – 0700 hrs as well as public holidays and Sundays, additional weekly impact monitoring will be carried out during the respective restricted hours periods.

Monitoring Locations

- 3.4 Two designated monitoring stations were selected for noise monitoring programme. Impact noise monitoring was conducted at two noise monitoring stations in the reporting month. Table 3.1 describes the noise monitoring locations, which are also depicted in Figure 6.

Table 3.1 Locations of Noise Monitoring Stations

Noise Monitoring Locations for the Project	Location of Measurement
M4(A) – Le Billionnaire	Podium (Façade)
M5(A) – Prince Ritz	Podium (Façade)

Monitoring Parameters, Frequency and Duration

- 3.5 The noise monitoring locations and monitoring frequency are listed in Table 3.2.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Noise Monitoring Station	Location for Measurement	Parameter	Frequency and Duration
M4(A) – Le Billionnaire	Podium (Façade)	L_{Aeq} , L_{A10} and L_{A90}	30-minute measurement at each monitoring station between 0700 – 1900 hrs on normal weekdays (Monday to Saturday) at frequency of once per week.
M5(A) – Prince Ritz	Podium (Façade)		

3.6 The monitoring schedule for reporting month and next month is presented in Appendix C.

3.7 Photographic records of the monitoring setup are shown in Appendix D.

Monitoring Equipment

3.8 As referred to the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the IEC 61672-1 (Class 1) standard [this standard replaced the International Electrotechnical Commission Publications 60651:1979 (Type 1) and 60804:1985 (Type 1)] were used for noise monitoring. Table 3.3 summarizes the equipment to be used in the noise monitoring.

Table 3.3 Noise Monitoring Equipment

Equipment	Model	Quantity	Calibration Interval
Sound Level Meter	RION NL52	1	1 year
Sound Level Calibrator	RION NC74	1	1 year
Air Flowmeter	TSI TA440 Air Velocity	1	1 year

3.9 Calibration certificates, catalogue of equipment are given in Appendix J.

Monitoring Methodology and QA/QC Procedure

3.10 The noise level measurement was conducted at 1m from the exterior of the nearby noise sensitive receivers building façade and at 1.2m above the ground and facing to the source area or the planned measurement area.

3.11 No noise measurement was conducted in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. Air flow was measured by air flow meter.

3.12 Turned on the sound level meter and check the battery, if too low, change new ones.

3.13 Calibration was conducted immediately prior to and after each noise measurement, the accuracy of the sound level meters was checked by using sound calibrator generating 1,000 Hz with 94dB. Measurement data was found to be valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.

3.14 Noise level was recorded.

3.15 Recorded any activities that may generate noise during measurement period.

Maintenance and Calibration

3.16 The microphone of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.

3.17 The sound level meter and sound calibrator were calibrated annually by HOKLAS accredited laboratory or equivalent.

Action and Limit Levels

3.18 The Baseline Noise Levels and Action and Limit Levels for construction noise is presented in Table 3.4.

Table 3.4 Baseline Noise Level and Action and Limit Levels for Construction Noise Monitoring

Time Period	Noise Monitoring Station	Baseline Noise Levels, dB (A)	Action Level	Limit Level [^]
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0700 – 1900 hrs on normal weekdays	M4(A)	69.5	When one documented complaint is received.	75 dB(A)
	M5(A)	72.5		

Note: ^ If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

Impact Noise Monitoring results

3.19 Impact noise monitoring results at the designated noise monitoring stations are summarized in Table 3.5 respectively.

Table 3.5 Summary of Noise Monitoring Data during the reporting month

Noise Monitoring Station	Measured $L_{Aeq, 30\text{-min}}$, Average, dB(A)	Measured $L_{Aeq, 30\text{-min}}$, Range, dB(A)	Action Level	Limit Level ^
M4(A)	70.8	70.6 – 71.0	When one documented complaint is received	75 dB(A)
M5(A)	74.2	73.9 – 74.4		

Note: ^ If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

3.20 There was no Action and Limit Level exceedance of $L_{Aeq, 30\text{-min}}$ recorded during the reporting month.

3.21 Graphical presentation and detailed monitoring results are shown in Appendix K.

3.22 The Event and Action Plan is provided in Appendix L.

3.23 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

3.24 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The environmental impacts predictions were given in Agreement No. CE 35/2006(CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction - Kai Tak Development Environmental Impact Assessment Report, EIA Register No. AEIAR-130/2009 for Kai Tak Development (The EIA Report). The EM&A data was compared with the EIA predictions as summarized in Table 4.1 to Table 4.3.

Table 4.1 Comparison of 24-hour average TSP Monitoring Data with EIA predictions

Air Quality Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 24-hour average TSP concentration		Measured 24-hr average TSP in Reporting Month (Nov 2023) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	32 – 51
AM3 - Sky Tower	A40 [^]	106 [^]	138 [^]	45 – 71

Note:

[^] Prediction results are given in the Table 3.13 of the EIA Report (EIAO Register No. AEIAR-130/2009) for Kai Tak Development.

Table 4.2 Comparison of 1-hour average TSP Monitoring Data with EIA predictions

Air Quality Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 1-hour average TSP concentration		Measured 1-hr average TSP in Reporting Month (Nov 2023) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	32 – 56
AM3 - Sky Tower	A40 [^]	217 [^]	247 [^]	39 – 73

Note:

[^] Prediction results are given in the Table 3.13 of the EIA Report (EIAO Register No. AEIAR-130/2009) for Kai Tak Development.

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Noise Monitoring Station	NSR No. in EIA report	Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour $L_{Aeq, 30min}$, dB(A)	Measured Noise Level in Reporting Month (Nov 2023) $L_{Aeq, 30min}$, dB(A)
M4(A) – Le Billionnaire	NA	NA	70.6 – 71.0
M5(A) – Prince Ritz	NA	NA	73.9 – 74.4

- 4.2 No prediction in the EIA Report for 24-hour TSP monitoring results at AM2(A).
- 4.3 24-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 4.4 No prediction in the EIA Report for 1-hour TSP monitoring results at AM2(A).
- 4.5 1-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 4.6 No prediction in the EIA Report for noise monitoring results at M4(A) and M5(A).

5. LANDSCAPE AND VISUAL MONITORING

5.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), Landscape and Visual Monitoring shall be carried out during the construction phase of the Project. Regular impact monitoring will be conducted at least once per week.

Results and Observations

5.2 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

5.3 Site inspections were conducted on 2, 10, 16, 23 and 30 November 2023 in the reporting month.

5.4 The summary of site audits is attached in Table 5.1.

Table 5.1 Summary of observations of Landscape and Visual impact during the reporting month

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
2 Nov 2023	NA	NA	NA
10 Nov 2023	NA	NA	NA
16 Nov 2023	NA	NA	NA
23 Nov 2023	NA	NA	NA
30 Nov 2023	NA	NA	NA

5.5 No non-compliance of the landscape and visual impact was recorded in the reporting month.

5.6 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in Appendix M shall be performed.

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT





Site Inspection







6.1 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

6.2 Site inspections were conducted 2, 10, 16, 23 and 30 November 2023 in the reporting month.

6.3 The summaries of site audits are attached in Table 6.1.

Table 6.1 Summary of site inspections observations during the reporting month

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
2 Nov 2023	 <p>Observation: Secondary container shall be provided for the plastic chemicals to prevent soil contamination.</p>	 <p>Action Taken: plastic chemical has been removed.</p>	Closed out on 10 Nov 2023
10 Nov 2023	 <p>Observation: Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</p>	 <p>Action Taken: Stockpiles has been removed.</p>	Closed out on 16 Nov 2023

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
16 Nov 2023	 <p>Observation: Secondary container shall be provided for the plastic chemicals to prevent soil contamination.</p>	 <p>Action taken: plastic chemical has been removed.</p>	Closed out on 23 Nov 2023
23 Nov 2023	 <p>Observation: The vehicles should be restricted to maximum speed of 10 km per hour.</p>	 <p>Action taken: The vehicles has been restricted to maximum speed of 10 km per hour.</p>	Closed out on 30 Nov 2023
30 Nov 2023	 <p>Observation: Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</p>	 <p>Action taken: Stockpiles has been removed.</p>	Closed out on 7 Dec 2023

Status of Waste Management

6.4 The amount of wastes generated by the major site activities of the work contracts within the Project during the reporting month is shown in Appendix N.

6.5 The Contractor was registered as a chemical waste producer for the Project. The Contractor was 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.

Status of Environmental Licenses, Notification and Permits

6.6 A summary of the relevant permits, licenses and/or notifications on environmental protection for the Project is shown in Table 6.2.

Table 6.2 Summary of Environmental Licenses, Notifications and Permits

Environmental Licenses, Notifications and Permits	Ref. No.	Valid Form	Valid Till
Environmental Permit under EIAO	EP-337/2009	23 Apr 2009	N/A
Construction Dust Notification under APCO	HA/1826/1	29 Dec 2020	N/A
Waste Disposal Billing Account	7038086	21 Aug 2020	N/A
Registration as a Chemical Waste Producer	5111-286-B2596-01	15 Sep 2020	N/A
Wastewater Discharge License under WPCO	WT00037618-2021	29 Mar 2021	31 Mar 2026
	WT00037370-2021		
	WT00038562-2021	15 Jul 2021	31 Jul 2026
Construction Noise Permit	GW-RE0624-23	20 Jun 2023	19 Dec 2023

Implementation Status of Environmental Mitigation Measures

6.7 The Contractor has implemented environmental mitigation measures as stated in the EIA report, the EP and the EM&A Manual. The implementation status of the mitigation measures is summarized in Appendix O.

Environmental Complaint and Non-compliance

6.8 No complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table 6.3.

Table 6.3 Summary of complaints in the Reporting Month

Date of complaint received	Date of complaint	Description of complaint	Recommendations / Action taken	Close-out date / Status
No complaint was received in the reporting month.	NA	NA	NA	NA

6.9 Complaint log is shown in Appendix P.

Notifications of summons and successful prosecutions

6.10 No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table 6.4.

Table 6.4 Summary of summons and successful prosecutions in the Reporting Month

Date of receiving notification of summons or prosecutions	Date of event	Description of event	Action taken	Close-out date / Status
No notification of summons and successful prosecutions were received in the reporting month.	NA	NA	NA	NA

6.11 The summaries of cumulative environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in Appendix P.

7. FUTURE KEY ISSUES

Construction Programme in the coming month

7.1 The major construction activities and potential impacts in the next reporting month are as follows:

Table 7.1 Summary of future key issues and potential impact in the coming month

Future key issues in the coming month	Potential impact
Erect falsework and working platform for Decking of Elevated Walkway LW-02	Noise and Air Quality
RC Construction for Decking of Elevated Walkway LW-02	Noise and Air Quality
RC Construction of LW02 Lift and Staircase	Noise and Air Quality
Installation of post tensioning anchorage system at LW-02	Noise and Air Quality
Construction of Permanent Shaft Structure of SB-01	Noise and Air Quality
Road and drain construction works of Road L16, Commercial Street and Road D1	Noise and Air Quality
Construction of DCS	Noise and Air Quality
Renovation works for Subway KS10 Lift and Staircase	Noise and Air Quality
Road and Drain Construction works at Olympic Avenue	Noise and Air Quality
Renovation works for existing Subways KS9, KS32 and KS10	Noise and Air Quality
Construction of Retaining Wall Type 1 for S14	Noise and Air Quality
Construction of Pile Cap for S14	Noise and Air Quality
Demolition of bearing wall of S14	Noise and Air Quality
Construction works for SMH404 and SMH505	Noise and Air Quality

7.2 The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:

- Sufficient watering of the works site with the active dust emitting activities,
- Limitation of the speed for vehicles on unpaved site roads,
- Properly cover the stockpiles,
- Good maintenance to the plant and equipment,
- Use of quieter plant and Quality Powered Mechanical Equipment (QPME),
- Provide movable noise barriers,
- Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,
- Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,
- Onsite waste sorting and implementation of trip ticket system,
- Good management and control on construction waste reduction,
- Erection of decorative screen hoarding,
- Strictly following the Environmental Permits and Licenses, and

- Provide sufficient mitigation measures as recommended in Approved EIA Report.

7.3 The recommended environmental measures proposed in the EM&A Manual (EIA Register No. AEIAR-130/2009) shall be effectively implemented to minimize the potential environmental impacts. The Contractor is reminded to implement the mitigation measures properly.

Environmental Site Inspection and Monitoring Schedule for next month

7.4 The tentative schedule for weekly site inspection and air quality and noise monitoring in the next month is provided in Appendix C.

8. CONCLUSIONS

- 8.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 8.2 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.3 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.4 Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.5 No complaint was received in the reporting month.
- 8.6 No notification of summons and successful prosecutions was received in the reporting month.
- 8.7 Based on the site inspection and audits, impact air quality and noise monitoring results, it was considered that the mitigation measures were effective to control the potential environmental impacts from the Project during the reporting period.

Figure

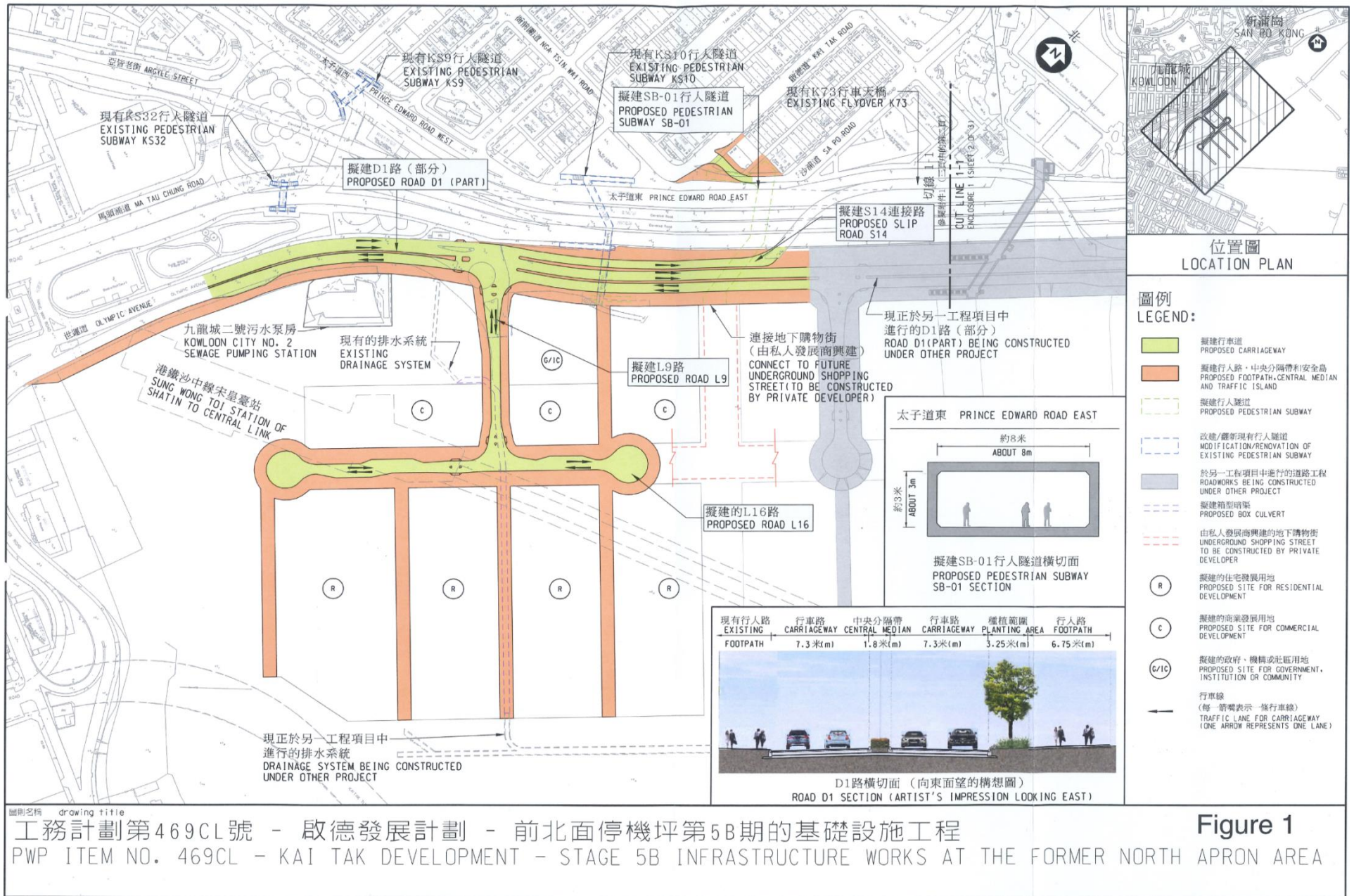


Figure 1 – Proposed works of Contract No. ED/2018/05

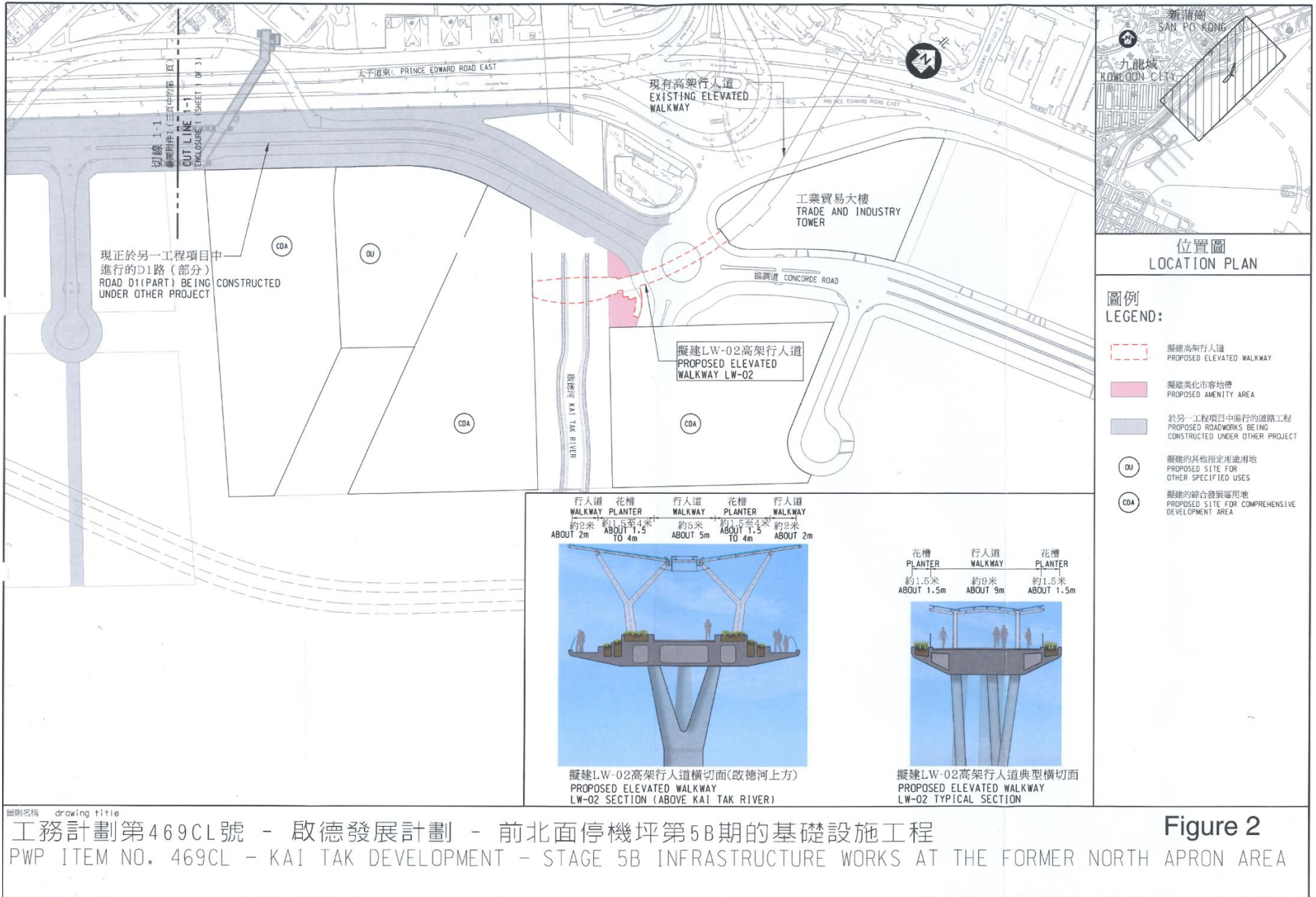


Figure 2 – Proposed works of Contract No. ED/2018/05

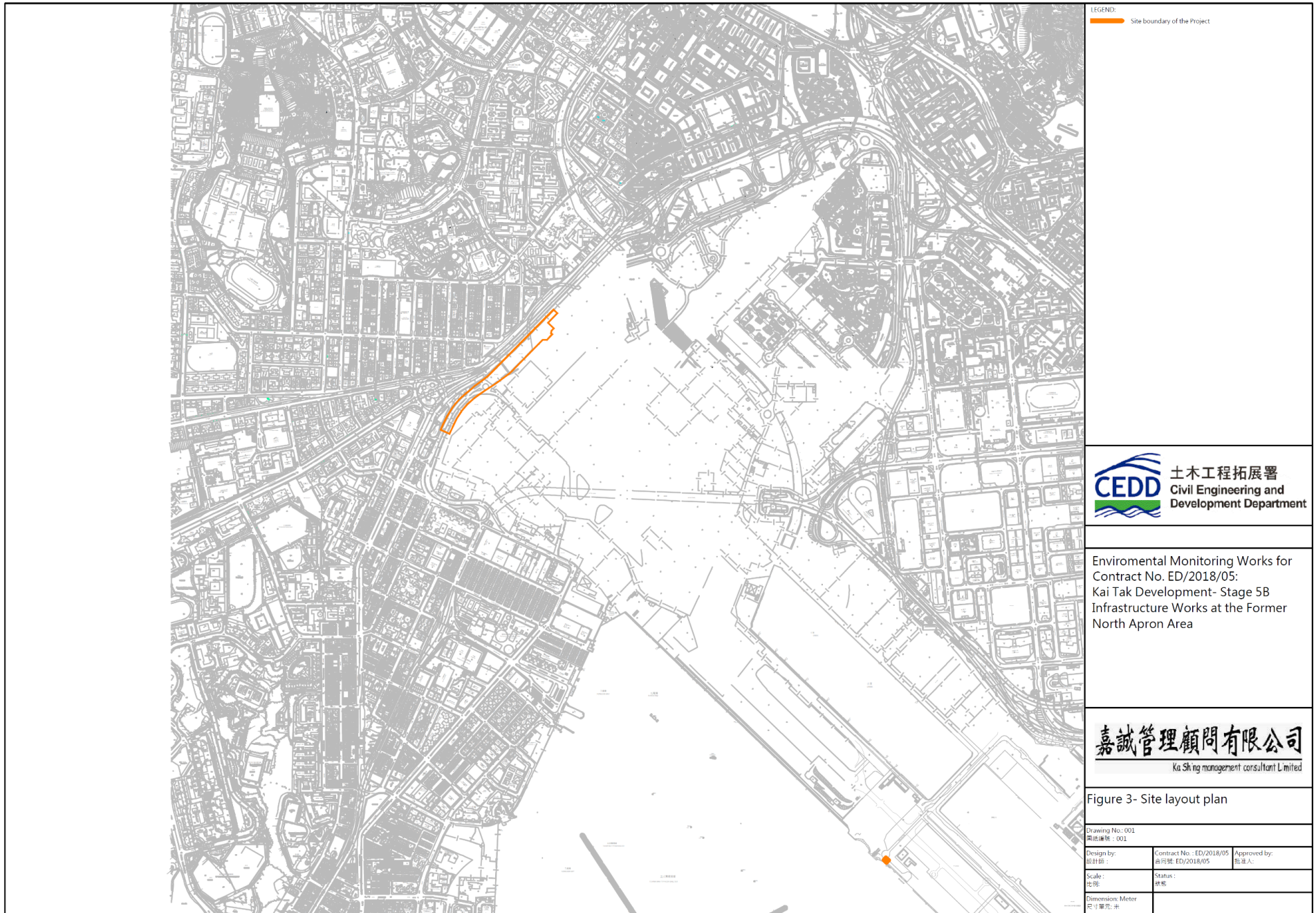


Figure 3 – D1 Road Site Layout Plan

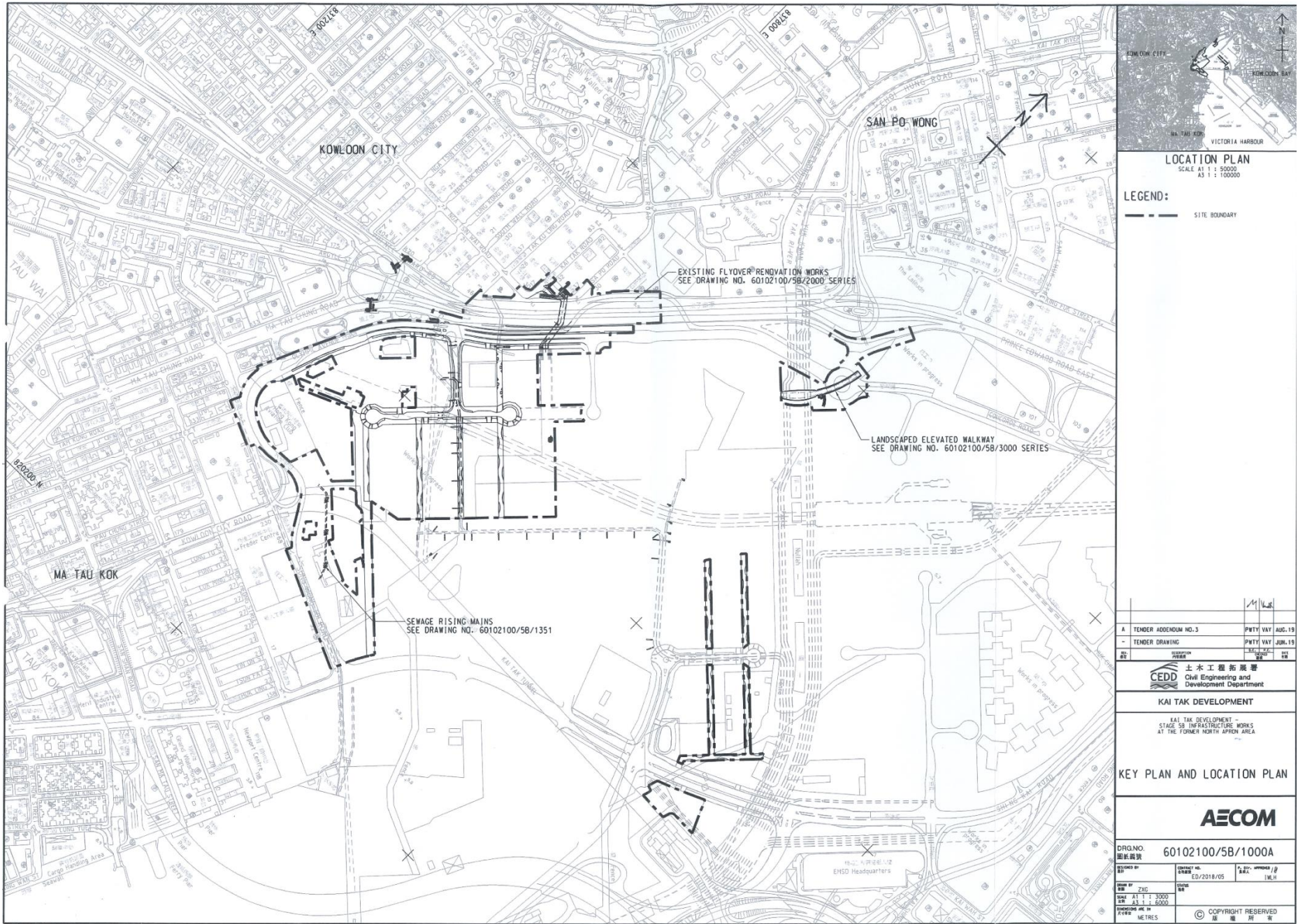


Figure 4 – Site Layout Plan

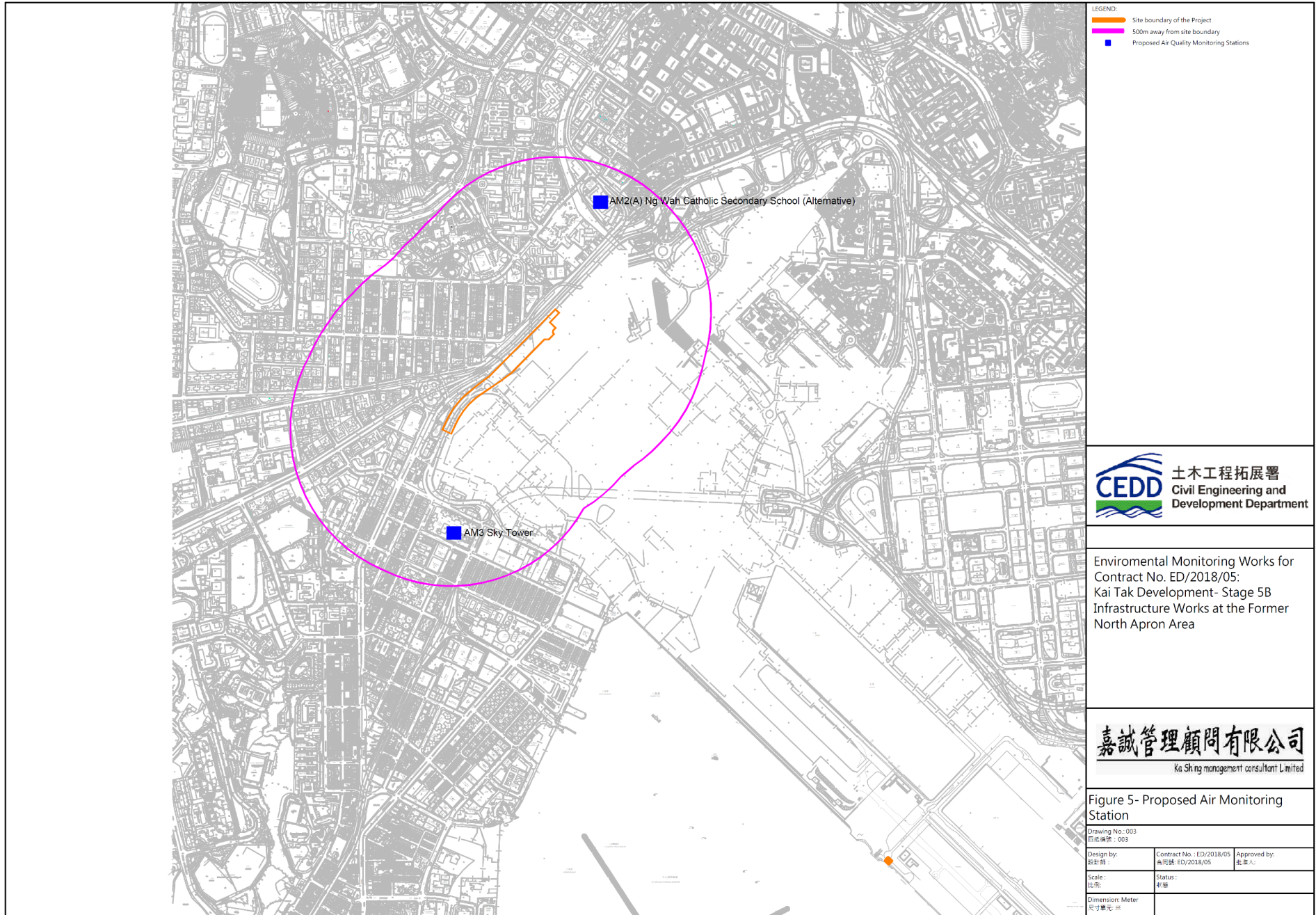


Figure 5 – Air Quality Monitoring Stations

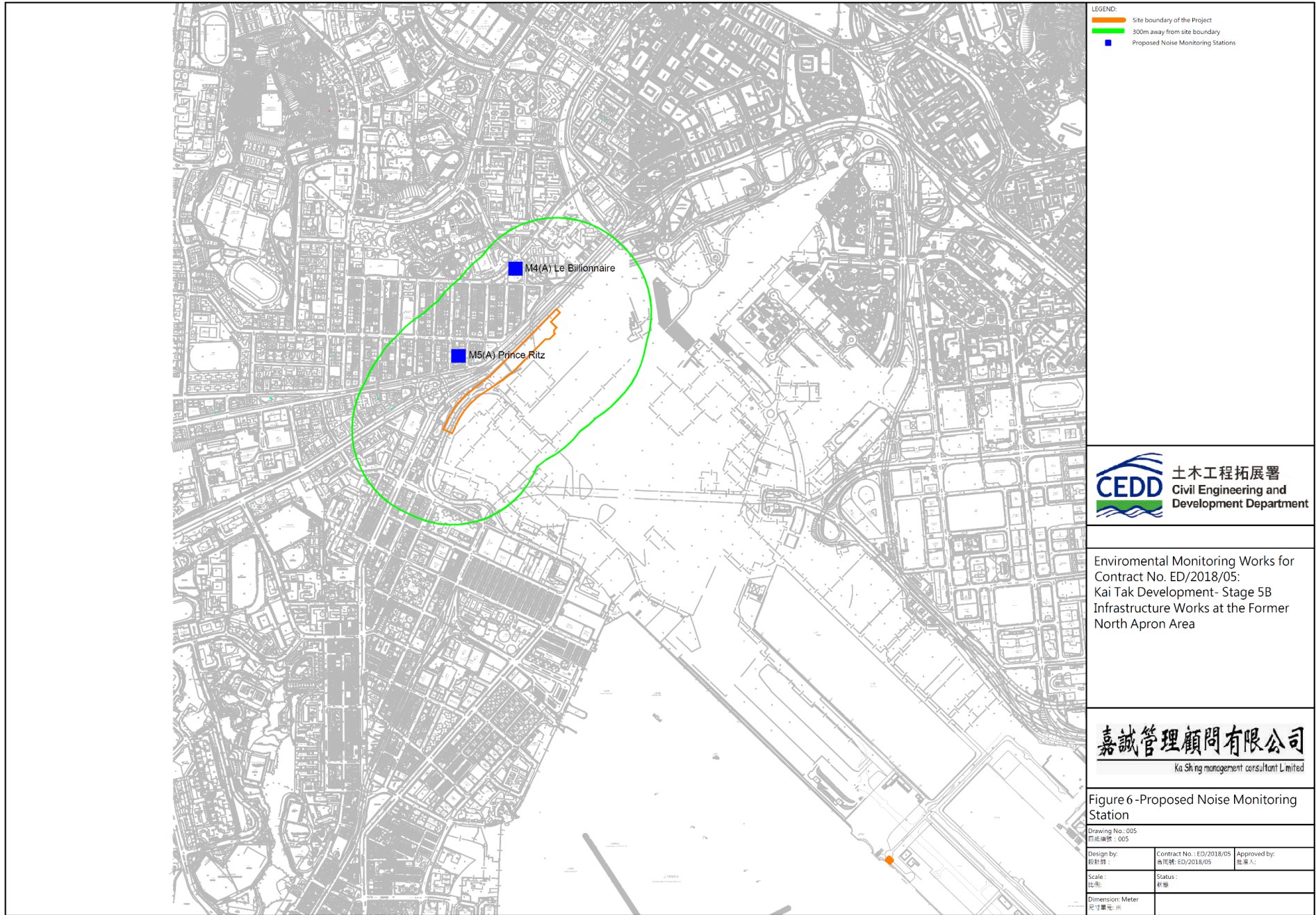


Figure 6 – Noise Monitoring Stations

Appendix A – Organization Chart of EM&A Team

Appendix B – Construction Programme

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar	2020	2021	2022	2023	2024	2025	2026		
WP_REV37 (first comments)																	
KEY DATES		2170	22-Jul-20	30-Jun-26	22-Jul-20	30-Jun-26	0	2									
KTD.KD.1000	Contract date	0	22-Jul-20		22-Jul-20		0	2									
KTD.KD.1010	Contract starting date	0	31-Jul-20		31-Jul-20		0	2									
KTD.KD.1020	Contract completion date	0		30-Jun-26		30-Jun-26	0	2									
ACCESS DATES		1429	31-Jul-20	29-Jun-24	31-Jul-20	29-Jun-24	0	2									
KTD.KD.1030	Parts 1, 1A, 1B, 2, 3, 4, 7, 8 and 9	0	31-Jul-20		31-Jul-20		0	2									
KTD.KD.1040	Part 5	0	30-Jun-22		30-Jun-22		0	2									
KTD.KD.1050	Part 6	0	29-Jun-24		29-Jun-24		0	2									
KTD.KD.1060	Part 6A	0	30-Jun-21		30-Jun-21		0	2									
KTD.KD.1070	Works Areas WA1, WA2, WA3, WA4, WA5, WA6 and WA7	0	31-Jul-20		31-Jul-20		0	2									
KTD.KD.1080	Part 10 and Works Area WA4A	0	29-Jan-21		29-Jan-21		0	2									
KTD.KD.1090	Works Area WA8	0	31-Jul-22		31-Jul-22		0	2									
CONTRACT SECTIONAL COMPLETION DATES		1826	30-Jun-21	30-Jun-26	30-Jun-21	30-Jun-26	0	2									
KTD.KD.1100	Section 1: Compl of all works within Parts 1 and 8 and Elevated Landscaped Walkway LW-02	0		26-Sep-23		26-Sep-23	0	2									
KTD.KD.1110	Section 2: Compl of all works within Parts 1B, 6A and 7 and remaining works of all Parts	0		31-Dec-24		30-Jun-26	546	2									
KTD.KD.1120	Section 3: Compl of all works within Parts 1A and 5 and drainage and sewage works within Part 6	0		27-Dec-23		27-Dec-23	0	2									
KTD.KD.1130	Section 4: Compl of all UU and services within Part 4	0		30-Jun-21		30-Jun-21	0	2									
KTD.KD.1140	Section 5: Compl of all UU and services within Part 3, rising mains diversion & demolition of ext. structures	0		17-Dec-21		17-Dec-21	0	2									
KTD.KD.1150	Section 6: Compl of all works within Part 2 and Part 10	0		29-Mar-22		29-Mar-22	0	2									
KTD.KD.1160	Section 7: Compl of all works within Part 3 (Subj to excision within 416days from starting date)	0		25-Feb-24		25-Feb-24	0	2									
KTD.KD.1170	Section 8: Compl of all Box Culvert B1 within Parts 1 and 3 and diversion and abandon works	0		29-Jul-21		29-Jul-21	0	2									
KTD.KD.1180	Section 9: Compl of DCS works within Parts 1 and 1A (Subj to excision within 236days from starting date)	0		26-Sep-23		26-Sep-23	0	2									
KTD.KD.1190	Section 10: Compl of establ work for all landscape works(except Sections 14, 15 and 16)	0		26-Dec-24		26-Dec-24	0	2									
KTD.KD.1200	Section 11: Compl of all works within Part 4 (Subj to excision within 244days from starting date)	0		25-Feb-24		25-Feb-24	0	2									
KTD.KD.1210	Section 12: Compl of all SB-01 within Part 1A	0		25-Sep-24		25-Sep-24	0	2									
KTD.KD.1220	Section 13: Compl of all works within Part 6	0		31-Dec-24		30-Jun-26	546	2									
KTD.KD.1230	Section 14: Compl of estab work for landscape works within Part 3 (Subj to excision within 416days from starting date)	0		24-Feb-25		24-Feb-25	0	2									
KTD.KD.1240	Section 15: Compl of estab work for landscape works within Part 4 (Subj to excision within 244days from starting date)	0		24-Feb-25		24-Feb-25	0	2									
KTD.KD.1250	Section 16: Compl of estab work for landscape works within Part 6	0		30-Jun-26		30-Jun-26	0	2									
KTD.KD.1260	Section 17: Compl of estab work for landscape works under Section 1	0		25-Sep-24		25-Sep-24	0	2									
DESIGN, SUBMISSIONS, PERMIT APPLICATION & APPROVAL		240	22-Jul-20	19-Mar-21	04-Oct-20	30-Jun-26	1930	2									
KTD.KD.1270	Prepare/submission of temporary works design	30	22-Jul-20	20-Aug-20	04-Oct-20	02-Nov-20	74	2									
KTD.KD.1280	Consultation/approval of temporary works design	50	21-Aug-20	19-Oct-20	03-Nov-20	01-Jan-21	74	2									
KTD.KD.1290	Prepare/submit Temp Geotechnical&Structural Works to HyD/TD/CEDD/GEO and others (incl SB-01 by RTBM, e	30	22-Jul-20	20-Aug-20	03-Nov-25	02-Dec-25	1930	2									
KTD.KD.1300	Consult/approve Temp Geotechnical&Structural Works by HyD/TD/CEDD/GEO and others (incl SB-01 by RTBM, e	120	21-Aug-20	18-Dec-20	03-Dec-25	01-Apr-26	1930	2									
KTD.KD.1310	Prepare/submission of Temporary Drainage and Sewerage Management Plan to DSD/CEDD and others	30	22-Jul-20	20-Aug-20	02-Apr-26	01-May-26	2080	2									
KTD.KD.1320	Consultation/approval of Temporary Drainage and Sewerage Management Plan by DSD/CEDD and others	60	21-Aug-20	19-Oct-20	02-May-26	30-Jun-26	2080	2									
KTD.KD.1330	Application/approval of CNP for night works by relevant authorities and liaison with projects nearby	90	19-Dec-20	19-Mar-21	02-Apr-26	30-Jun-26	1930	2									
KTD.KD.1340	Application/approval of permits or other statutory submissions by relevant authorities (i.e. CEDD,HyD,WSD,XPM	180	31-Jul-20	26-Jan-21	02-Jan-26	30-Jun-26	1381	2									
TEMPORARY TRAFFIC MANAGEMENT		240	31-Jul-20	27-Mar-21	18-Sep-20	30-Jun-26	1921	2									
KTD.KD.1370	Prepare/Submit/Consult/Approval of TTA for loading/unloading at Sa Po Road and Concorde Road roundabout	60	31-Jul-20	28-Sep-20	20-Aug-21	18-Oct-21	385	2									
KTD.KD.1380	Prepare/Submit/Consult/Approval of TTA for working platform erection crossing Concorde Road roundabout	90	29-Sep-20	27-Dec-20	25-Jun-22	22-Sep-22	634	2									
KTD.KD.1390	Prepare/Submit/Consult/Approval of TTA for GI/diversion/preliminary works at PERE and Sa Po Road	90	31-Jul-20	26-Oct-20	03-Nov-25	31-Jan-26	1921	2									
KTD.KD.1400	Prepare/Submit/Consult/Approval of TTA for 2-staged Sa Po Road and PERE WB diversion	90	30-Aug-20	27-Nov-20	03-Dec-25	02-Mar-26	1921	2									
KTD.KD.1410	Prepare/Submit/Consult/Approval of TTA for road and drainage works along Olympic Avenue	120	28-Nov-20	27-Mar-21	03-Mar-26	30-Jun-26	1921	2									
KTD.KD.2180	1st TMLG Meeting	0		18-Sep-20		18-Sep-20	0	2									
KTD.KD.2220	2nd TMLG Meeting	0		19-Nov-20		19-Nov-20	0	2									
KTD.KD.2230	3rd TMLG Meeting	0		15-Jan-21		14-Jan-21	0	2									
KTD.KD.2240	4th TMLG Meeting	0		23-Mar-21		23-Mar-21	0	2									
CONSTRUCTION HEALTH AND SAFETY MANAGEMENT		1501	22-Jul-20	25-Jan-25	23-Jul-20	26-Jun-25	0	2									
KTD.KD.1420	Prepare/submit of Draft Safety Plan	13	22-Jul-20	03-Aug-20	23-Jul-20	04-Aug-20	1	2									
KTD.KD.1430	Prepare/submit Safety Plan	21	04-Aug-20	24-Aug-20	05-Aug-20	25-Aug-20	1	2									
KTD.KD.1440	Conduct meeting to discuss Draft Safety Plan	0		03-Aug-20		03-Aug-20	0	2									
KTD.KD.1450	Prepare/submit Site Traffic Safety Management Plan	41	22-Jul-20	31-Aug-20	23-Jul-20	01-Sep-20	1	2									
KTD.KD.1460	Prepare/submit Construction Health and Safety Plan	29	22-Jul-20	19-Aug-20	23-Jul-20	20-Aug-20	1	2									
KTD.KD.1470	1st SSMC Meeting	1	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	0	2									
KTD.KD.1480	2nd SSMC Meeting	1	23-Sep-20	23-Sep-20	23-Sep-20	23-Sep-20	0	2									
KTD.KD.1490	3rd SSMC Meeting	1	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	0	2									
KTD.KD.1500	4th SSMC Meeting	1	26-Nov-20	26-Nov-20	26-Nov-20	26-Nov-20	0	2									
KTD.KD.1510	5th SSMC Meeting	1	31-Dec-20	31-Dec-20	31-Dec-20	31-Dec-20	0	2									
KTD.KD.1520	6th SSMC Meeting	1	28-Jan-21	28-Jan-21	28-Jan-21	28-Jan-21	0	2									
KTD.KD.1530	7th SSMC Meeting	1	25-Feb-21	25-Feb-21	25-Feb-21	25-Feb-21	0	2									
KTD.KD.1540	8th SSMC Meeting	1	24-Mar-21	24-Mar-21	24-Mar-21	24-Mar-21	0	2									
KTD.KD.1550	9th SSMC Meeting	1	29-Apr-21	29-Apr-21	29-Apr-21	29-Apr-21	0	2									
KTD.KD.1560	10th SSMC Meeting	1	27-May-21	27-May-21	27-May-21	27-May-21	0	2									
KTD.KD.1570	11th SSMC Meeting	1	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	0	2									
KTD.KD.1580	12th SSMC Meeting	1	29-Jul-21	29-Jul-21	29-Jul-21	29-Jul-21	0	2									
KTD.KD.1590	13th SSMC Meeting	1	26-Aug-21	26-Aug-21	26-Aug-21	26-Aug-21	0	2									
KTD.KD.1600	14th SSMC Meeting	1	30-Sep-21	30-Sep-21	30-Sep-21	30-Sep-21	0	2									
KTD.KD.1610	15th SSMC Meeting	1	28-Oct-21	28-Oct-21	28-Oct-21	28-Oct-21	0	2									

Project Baseline Bar ◆ Milestone
 Remaining Work ◆ Summary
 Critical Remaining Work

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
 (Page 1 of 11)

Date	Revision	Checked	Approved
13-Oct-23	First Draft		

Appendix C – Environmental monitoring schedules

Contract No. EDO 2/2020 Environmental Monitoring at Kai Tak Development – Stage 5B infrastructure works at the former north apron area
 Environmental Monitoring and Weekly Site Inspection Schedule for November 2023

November 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 Weekly Site Inspection 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	3	4
5	6	7	8 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	9	10 Weekly Site Inspection	11
12	13	14 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	15	16 Weekly Site Inspection	17	18
19	20 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	21	22	23 Weekly Site Inspection	24	25 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3
26	27	28	29	30 Weekly Site Inspection + SSMC meeting		

Air Quality Monitoring Station

AM2(A) Ng Wah Catholic Secondary School
 AM3 - Sky Tower

Noise Quality Monitoring Station

M4(A) - Le Billionnaire
 M5(A) - Prince Ritz

Contract No. EDO 2/2020 Environmental Monitoring at Kai Tak Development – Stage 5B infrastructure works at the former north apron area
Tentative Environmental Monitoring and Weekly Site Inspection Schedule for December 2023

December 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	2
3	4	5	6	7 Weekly Site Inspection 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	8	9
10	11	12	13 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	14 Weekly Site Inspection	15	16
17	18	19 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	20	21 Weekly Site Inspection	22	23 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3
24	25	26	27	28 Weekly Site Inspection + SSMC meeting	29 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	30
31						

NOTE:

1) Site inspection schedule and Impact monitoring schedule may be changed due to unforeseen circumstance (e.g. adverse weather).

Air Quality Monitoring Station

AM2(A) Ng Wah Catholic Secondary School
AM3 - Sky Tower

Noise Quality Monitoring Station

M4(A) - Le Billionnaire
M5(A) - Prince Ritz

Appendix D – Photographic records

Impact Air Quality Monitoring



Measurement setup at AM2(A)



Measurement setup at AM3



Weather Station at the rooftop of Ng Wah Catholic Secondary School

Impact Noise Monitoring



Measurement setup at M4(A)



Measurement setup at M5(A)

**Appendix E – Calibration certificates, catalogue of air quality
monitoring equipment**

Catalogue of High Volume Sampler (HVS)



TSP MFC

Total Suspended Particulate, Mass Flow Controlled



MFC TSP
Ambient Air Sampler

The TE-5170 is a high volume ambient Total Suspended Particulate (TSP) air sampler featuring a mass flow controller (MFC) for accurate and consistent particulate sampling. The mass flow controller adjust the motor speed as the filter media collects particulate to maintain a constant flow rate throughout the entire sample duration. The system utilizes a stainless steel filter holder for use with standard 8" x 10" filter paper. The anodized aluminum shelter and robust electrical components allow the system to operate a continuous 24 hour sample.

ABOUT US: Tisch Environmental Inc. Tisch Environmental is the benchmark for high volume air sampling, particulate, metals, volatiles, and specialty monitoring equipment. Since the company's inception in 1953 as General Metal Works, our product line has expanded from the first high volume air sampler to include high-tech and custom samplers. Our clients are professionals from every sector of the regulatory and industrial markets.

- ✔ Meets EPA CFR, Appendix B to Part 50
- ✔ Total Suspended Particulate(TSP)
- ✔ Mass Flow Controlled
- ✔ 7-Day Mechanical Timer
- ✔ Elapsed Time Indicator
- ✔ Aluminum Outdoor Shelter
- ✔ Brush Style Motor
- ✔ Dickson Chart Recorder, 24 Hour
- ✔ Stainless Steel Filter Holder
- ✔ 36-60 CFM
- ✔ Made In USA

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Cleveland, OH 44102
513-487-3000
sales@tisch-env.com



TSP MFC

MFC TSP Ambient Air Sampler

General System Specifications

Particulate Size:Total Suspended Particulate (TSP)
EPA Designation: CFR 40 Part 50 Appendix B
Flow Controller: Mass Flow Controller
Motor Style:Brush Style Motor Assembly
Pressure Recorder:Dickson Chart Recorder, 24 hour
Timer:7 Day Mechanical
Elapsed Time Indicator:Mechanical, Hours and Tenths
Flow Range:39-60CFM, 1.09M³M-1.68M³M
Housing:Anodized Aluminum
Filter Holder:Stainless Steel, 8" x 10"
4" Recorder Charts: Box of 100
Filter Holder: 8" x 10" Stainless Steel with hold down frame

Applications

US EPA Reference Method Sampling, CFR Appendix J Part 50 Regulatory Compliance
 Institutional Studies
 Construction Sites
 Bridge and Water Tower Painting Sites
 Fence Line Monitoring
 Industrial Monitoring
 Landfill Monitoring
 Public Health Applications

Available Models

TE-5170 TSP MFC, 110 Volt 60 Hertz, 8 Amps
 TE-5170X TSP MFC, 220 Volt 50 Hertz 4 Amps
 TE-5170XZ TSP MFC, 220 Volts 60 Hertz, 4 Amps

Calibration Equipment

TE-5028 -Variable Flow Calibration Kit
 TE-HVC-V Xcalibrator HiVol Calibrator

Optional Equipment

TE-3000 Filter Holder Cartridge
 TE-G653 8" x 10" Glass Fiber Filter Media
 TE-33384 Motor Brush Set (110volt)
 TE-33378 Motor Brush Set (220volt)
 TE-116311 Replacement Motor (110volt)
 TE-116312 Replacement Motor (220volt)
 TE-106 Recorder Charts
 TE-160 Recorder Pen Points
 TE-5018 Gasket 8" x 10"

Physical Specifications

Weight: 75lbs, Shelter
Shipping Dimensions: 46"W x 23"L x 20" H, Shelter
 19"W x 19"L x 20"H, Lid
Assembled Dimensions: 28"W x 28"L x 61"H

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Calibration Certificate of HVS used for performance check of Dust Meter

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No.: ATSPC-01-2022061301 Date of calibration: 19/06/2023

Model no: GS2310 Serial number: 10346

Calibration Data

Ambient barometric pressure, Pa = 755.3 (mmHg) Ambient temperature, Ta = 305.25 (deg K)

Calibration Orifice

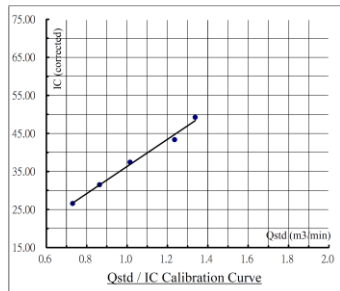
Model = TE-5025A Qstd Slope, m = 2.01424
 Serial No. = 0006 Qstd Intercept, b = 0.02085
 Calibration Due Date: 17/05/2024 Qstd Corr. coeff., r = 0.99999

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	7.60	1.338	50.0	49.25
13	6.50	1.236	44.0	43.34
10	4.40	1.015	38.0	37.43
7	3.20	0.864	32.0	31.52
5	2.30	0.731	27.0	26.60

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [I (\sqrt{ (Pa / 760) (298 / Ta) }) - b]$	35.675	0.6397	0.9953



Calibration curve requirements: (A). $r > 0.990$; (B). At least 3 Qstd numbers are in the TSP range (1.1 - 1.7 m³/min).

Remark: $Qstd (m^3/min) = 1/m [\sqrt{ (H_2O (Pa / 760) (298 / Ta)) } - b]$

$IC (corrected) = I [\sqrt{ (Pa / 760) (298 / Ta) }]$

$FLOW (corrected) = \sqrt{ (FLOW (mano) (Pa / 760) (298 / Ta)) }$

Calibrated by: Ben Poon 19/06/2023 Checked by: Tommy Wong 19/06/2023

Name: (Ben Poon) Name: (Tommy Wong)

Form No. DNS-HVS-CAL-01 10/01/2020

Orifice Transfer Standard Certification Worksheet TE-5025A

AAS- TSPC-01, Cal: 17 May 2023



RECALIBRATION
DUE DATE:
May 17, 2024

Certificate of Calibration

Calibration Certification Information

Cal. Date: May 17, 2023 Rootsmer S/N: 438320 Ta: 297 °K
 Operator: Jim Tisch Pa: 745.0 mm Hg
 Calibration Model #: TE-5025A Calibrator S/N: 0006

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4270	3.2	2.00
2	3	4	1	1.0000	6.4	4.00
3	5	6	1	0.8940	7.9	5.00
4	7	8	1	0.8490	8.8	5.50
5	9	10	1	0.6990	12.8	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H (Pa / Pstd) (Tstd / Ta)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta / Pa)}$ (y-axis)
0.9793	0.6863	1.4025	0.9957	0.6978	0.8929
0.9751	0.9751	1.9835	0.9914	0.9914	1.2628
0.9731	1.0885	2.2176	0.9894	1.1067	1.4119
0.9719	1.1448	2.3258	0.9882	1.1639	1.4808
0.9666	1.3829	2.8051	0.9828	1.4060	1.7859
QSTD		m= 2.01424	QA		m= 1.26128
		b= 0.02085			b= 0.01328
		r= 0.99999			r= 0.99999

Calculations

$Vstd = \Delta Vol ((Pa - \Delta P) / Pstd) (Tstd / Ta)$ $Va = \Delta Vol ((Pa - \Delta P) / Pa)$

$Qstd = Vstd / \Delta Time$ $Qa = Va / \Delta Time$

For subsequent flow rate calculations:

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

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmer 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

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

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

Catalogue of Dust Meter (TSI Sidepak AM510)

The SidePak AM510 monitor's easy-to-read display shows your data as both real-time aerosol mass-concentration and 8-hour time-weighted average (TWA). With its convenient data logging and long battery life, the AMS10 is also ideal for extended sampling. The easy-to-use TrakPro Data Analysis Software lets you create effective graphs and reports.



User Friendly

- + Small, lightweight and quiet to maximize worker acceptance
- + Rugged design with secure belt clip
- + Easy-to-understand user interface with only four keys
- + Lockable keypad prevents tampering while sampling
- + User-adjustable sample flow rate
- + Define, label and store multiple calibration constants
- + Easy-to-read LCD display
- + Convenient, threaded tripod socket accommodates area sampling

Advanced Features

- + Smart Battery Management System provides precise run time information, maximizes battery capacity and speeds charging
- + Integrated pump allows use of size-selective aerosol inlet conditioners
- + Built-in impactors let you choose "none," 1.0, 2.5 or 10-micron cut off
- + 10-mm Dorr-Oliver cyclone for respirable sampling
- + Display shows real-time concentrations (mg/m³) and "on-the-fly" TWA as you data log
- + Display statistics: max, min and average readings, elapsed time and 8-hour TWA

Quick and Easy Reports

- + Convenient preprogramming for occupational exposure sampling
- + Data log for long periods and store multiple tests
- + Analyze data, print graphs and create reports with TrakPro Data Analysis Software
- + USB port lets you conveniently connect to your computer

Power to Spare

- + Long-lasting NiMH rechargeable battery packs eliminate "memory" issues
- + Choice of rechargeable NiMH smart battery packs or AA-cell pack

Model AMS10

SidePak Personal Aerosol Monitor

Sensitivity

Sensor Type	90° light scattering, 670 nm laser diode
Aerosol Concentration Range	0.001 to 20 mg/m ³ (calibrated to respirable fraction of ISO 12103-1, A1 test dust)
Particle Size Range	0.1 to 10 micrometer (µm)
Minimum Resolution	0.001 mg/m ³
Zero stability	±0.001 mg/m ³ over 24 hours using 10-second time-constant
Temperature Coefficient	Approximately +0.0005 mg/m ³ per °C (for variations from temperature at which instrument was last zeroed)

Flow Rate

Range	User-adjustable, 0.7 to 1.8 liters/min (L/min)
-------	--

Temperature Range

Operating Range	32 to 120°F (0 to 50°C)
Storage Range	-4 to 140°F (-20 to 60°C)

Operational Humidity

0 to 95% RH, non-condensing

Time Constant (LCD display)

Range	User-adjustable, 1 to 60 seconds
-------	----------------------------------

Data Logging

Data Points	Approx. 31,000
Logging Interval	User-adjustable, 1 second to 1 hour

User-Select Calibration Factors

Factory Setting	1.0 (non-adjustable)
User-defined Settings	3, with user-defined labels
Range	0.1 to 10.0, user-adjustable

Physical

External Dimensions	4.2 x 3.7 x 2.8 in. (106 x 92 x 70 mm) with 801723, 801724, 801729 or 801743 battery 5.1 x 3.7 x 2.8 in. (130 x 92 x 70 mm) with 801708, 801722, 801728, 801735, or 801736 battery
Weight	16 oz (0.46 kg) with 801723, 801724, 801729 or 801743 battery 19 oz (0.54 kg) with 801708, 01722, 801728, 801735, or 801736 battery
Display	2 line x 12 character LCD
Tripod Socket	1/4-20 female thread

Power Supply/Charger (P/N 2613210)

Input Voltage Range	100 to 240 VAC, 50 to 60 Hz
Output Voltage	9 VDC @ 1.0 A

Maintenance

Factory Clean/Calibrate	Recommended annually
User Zero Calibration	Before each use
User Flow Calibration	As needed

Communications Interface

Type	USB 1.1
Connector, Instrument	USB Mini-B (socket)

Minimum Computer Requirements for TrakPro™ Data Analysis Software

Communications Port	Universal Serial Bus (USB) v 1.1 or higher
Operating System	Microsoft Windows® XP, or 7 (32-bit or 64-bit) operating systems

Battery Performance

Battery Options	Charge Time (hrs)*	Intrinsic Safety Rating	Run Time (hrs @ 1.7 L/min)
1600 mAh NiMH Pack, 4.8 V (P/N 801723)	3.0	No	7.1
1650 mAh NiMH Pack, 4.8 V (P/N 801724, 801729 or 801743)	3.5	CSA**	7.5
2700 mAh NiMH Pack, 4.8 V (P/N 801722 or 801728)	5.5	No	12.0
2700 mAh NiMH Pack, 4.8 V (P/N 801735)	5.5	No	12.0
6-Cell AA-size Alkaline Pack*** (P/N 801708 or 801736 with six user-supplied AA cells)	N/A	No	22.5

*Of a fully depleted battery

**All dust plugs and dust gaskets must be installed.

***Using Energizer AA-size, E91 alkaline batteries.

Battery Level Indicator

The Smart Battery Management System™ technology utilizes a built-in "gauge" in the SidePak™ battery packs. The gauge monitors battery capacity and calculates run time information by dividing capacity of the battery (mAh) by the instantaneous current consumed by the instrument (mA). This calculation is correct for current operating conditions and can change due to current (mA) consumption or changes in battery capacity.

Calibration Certificate of Dust Meter (TSI Sidepak AM510)

AAS7-RSP-07, Cal cert, 9/2023

CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 590 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-498-2811 Fax: 1-651-498-3824 http://www.tsi.com

Environment Conditions		Model	AM510
Temperature	73.99 (23.3) °F (°C)	Serial Number	11411017
Relative Humidity	51.8 %RH		
Barometric Pressure	28.83 (976.3) inHg (hPa)		

As Left In Tolerance
 As Found Out of Tolerance

Concentration Linearity Plot

System ID: DTH01-01

CONCENTRATION								Unit: mg/m3
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE	
1	1.612	1.529	1.451-1.773	3	0.074	0.075	0.052-0.096	
2	0.242	0.234	0.206-0.278	4	15.040	14.957	13.536-16.544	

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 4:1.

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003319	03-17-23	09-30-23	Flowmeter	E004570	06-05-23	06-30-24
DC Voltage(Keithley)	E002455	06-13-23	06-30-24	Microbalance	M001324	02-09-23	02-28-25
Pressure	E005651	07-24-23	07-31-24				

Calibrated

August 9, 2023

Date

Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0220602-5 Report Issue Date 02/06/2023
 Date of performance check 02/06/2023

Objective:

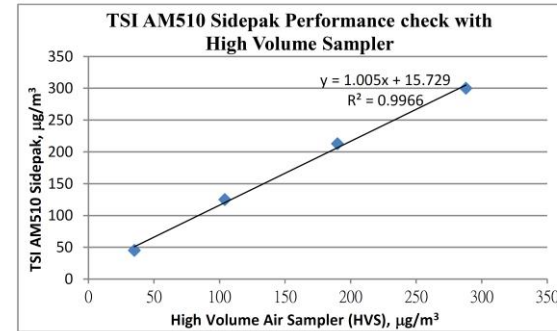
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11411017
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

Results:

Equipment	Measurement Result, µg/m ³			
TSI AM510 Sidepak	45	125	213	300
High Volume Air Sampler (HVS)	35	104	190	288



Tested by: 02/06/2023 Checked by: 02/06/2023
 Name: (Ben Poon) Name: (Tommy Wong)

Form No. ENV CAL SAMPLER CCI 4012/12/2003

Catalogue of Weather Station

Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations



**6152C
6162C**
Vantage Pro2™

The Vantage Pro2™ (# 6152C) and Vantage Pro2™ Plus (# 6162C) cabled weather stations include two components: the Integrated Sensor Suite (ISS) and the console. The ISS contains the sensor interface module (SIM), rain collector, an anemometer, and a passive radiation shield. The Vantage Pro2 console provides the user interface, data display, and calculations. The Vantage Pro2 Plus weather station includes two additional sensors that are optional on the Vantage Pro2 and purchased separately: the UV Sensor and the Solar Radiation Sensor. The console and ISS are powered by an AC-power adapter connected to the console. Batteries can be installed in the console to provide a backup power supply. Use WeatherLink® to let your weather station interface with a computer, log data, and upload weather information to the Internet. The 6152C and 6162C models rely on passive shielding to reduce solar-radiation induced temperature errors in the outside temperature sensor readings.

Integrated Sensor Suite (ISS)

Operating Temperature	-40° to +150°F (-40° to +65°C)
Non-operating Temperature	-40° to +158°F (-40° to +70°C)
Current Draw	5 mA (average) at 4 to 6 VDC for ISS only, 10 mA average for both console and ISS
Connectors, Sensor	Modular RJ-11
Cable Type	4-conductor, 26 AWG
Cable Length, Anemometer	40' (12 m) (included); 240' (73 m) (maximum recommended)

Note: Maximum displayable wind decreases as the length of cable increases. At 140' (42 m) of cable, the maximum wind speed displayed is 135 mph (60 m/s); at 240' (73 m), the maximum wind speed displayed is 100 mph (34 m/s).

Wind Speed Sensor	Solid state magnetic sensor
Wind Direction Sensor	Wind vane with potentiometer
Rain Collector Type	Tipping bucket, 0.01" per tip (0.2 mm with metric rain adapter), 33.2 in ² (214 cm ²) collection area
Temperature Sensor Type	PN Junction Silicon Diode
Relative Humidity Sensor Type	Film capacitor element
Housing Material	UV-resistant ABS, polypropylene
Sensor Inputs	
RF Filtering	RC low-pass filter on each signal line

ISS Dimensions(not including anemometer or bird spikes):

Vantage Pro2 with Standard Rad Shield	14.0" x 9.4" x 14.5" (356 mm x 239 mm x 368 mm)
Vantage Pro2 with Fan-Aspirated Rad Shield	20.8" x 9.4" x 16.0" (528 mm x 239 mm x 406 mm)
Vantage Pro2 Plus with Standard Rad Shield	14.3" x 9.7" x 14.5" (363 mm x 246 mm x 368 mm)
Vantage Pro2 Plus with Fan-Aspirated Rad Shield	21.1" x 9.7" x 16.0" (536 mm x 246 mm x 406 mm)

DAVIS **Davis Instruments** 3465 Diablo Ave., Hayward, CA 94545-2778 USA
(510) 732-9229 • FAX (510) 670-0589 • sales@davisinstruments.com • www.davisinstruments.com

DS6152C, 6162C Rev. W 12/7/18
1

7
Vantage Pro2™

Ultra Violet (UV) Radiation Index (requires UV sensor)

Resolution and Units	0.1 Index
Range	0 to 16 Index
Accuracy	±5% of full scale (Reference: Yankee UVB-1 at UV index 10 (Extremely High))
Cosine Response	±4% FS (0° to 90° zenith angle)
Update Interval	50 seconds to 1 minute (5 minutes when dark)
Current Graph Data	Instant Reading and Hourly Average; Daily, Monthly High
Historical Graph Data	Hourly Average, Daily, Monthly Highs
Alarm	High Threshold from Instant Calculation

Wind

Wind Chill (Calculated)	
Resolution and Units	1°F or 1°C (user-selectable); °C is converted from °F and rounded to the nearest 1°C
Range	-110° to +135°F (-79° to +57°C)
Accuracy	±2°F (±1°C) (typical)
Update Interval	10 to 12 seconds
Source	United States National Weather Service (NWS)/NOAA
Equation Used	Osczevski (1995) (adopted by US NWS in 2001)
Variables Used	Instant Outside Temperature and 10-min. Avg. Wind Speed
Current Display Data	Instant Calculation
Current Graph Data	Instant Calculation; Hourly, Daily and Monthly Low
Historical Graph Data	Hourly, Daily and Monthly Lows
Alarm	Low Threshold from Instant Calculation

Wind Direction

Range	1 - 360°
Display Resolution	16 points (22.5°) on compass rose, 1° in numeric display
Accuracy	±3°
Update Interval	2.5 to 3 seconds
Current Graph Data	Instant Reading (user adjustable); 10-min. Dominant; Hourly, Daily, Monthly Dominant
Historical Graph Data	Past 6 10-min. Dominants on compass rose only; Hourly, Daily, Monthly Dominants

Wind Speed

Resolution and Units	1 mph, 1 km/h, 0.4 m/s, or 1 knot (user-selectable) Measured in mph; other units are converted from mph and rounded to nearest 1 km/hr, 0.1 m/s, or 1 knot.
Range	0 to 200 mph, 0 to 173 knots, 0 to 89 m/s, 0 to 322 km/h
Update Interval	Instant Reading; 2.5 to 3 seconds, 10-minute Average: 1 minute
Accuracy	±2 mph (2 kts, 3.2 km/h, 0.9 m/s) or ±5%, whichever is greater
Maximum Cable Length	540' (165 m) (Note that maximum wind speed reading decreases as length of cable from anemometer to ISS increases.)
Current Display Data	Instant
Current Graph Data	Instant Reading; 10-minute and Hourly Average; Hourly High; Daily, Monthly and Yearly High with Direction of High
Historical Graph Data	10-min. and Hourly Averages; Hourly Highs; Daily, Monthly and Yearly Highs with Direction of Highs
Alarms	High Thresholds from Instant Reading and 10-minute Average

Calibration Certificate of Weather Station



Cal Lab Limited 校正實驗室有限公司
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,
 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk

Calibration Certificate No.: CC0072308

Information provided by customer

Customer: Castco Testing Centre Limited
 Address: 33, On Kui Street, Fanling, N.T.

Equipment Identification provided by customer

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.:
Weather Station	Davis Vantage PRO 2	6152CUK	BD1811101023	AAST-W5-04

Certificate Information

Date of Receipt:	4 August 2023	Calibration Condition:	24.3°C, 52%RH, 1002hPa
Date of Calibration:	14 August 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	JJF 1183-2007, JJF 1076-2020, SOP-116	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Platinum resistance thermometer	KPPRHT-A-1	KCI I-1095, KCI P-1095	9 November 2024
Humidity sensor	KPPRHT-A-1	KCI I-1095, KCI P-1095	9 November 2024
Hot Wire Anemometer	9535	T95351316004	11 August 2024

- Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
- Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
- Note3: The result 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.
- Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 17 August 2023

CT-BEG-04

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 2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0072308
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Cal Lab Limited 校正實驗室有限公司
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 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk

Result of Calibration

Temperature

Reference reading (°C)	Reading (°C)	Error (°C)	Uncertainty (°C)
15.0	15	0	2
20.0	20	0	2
25.0	25	0	2
30.0	30	0	2

Relative Humidity

Reference reading (%RH)	Reading (%RH)	Error (%RH)	Uncertainty (%RH)
40.0	39	-1	2
50.0	51	1	2
70.0	72	2	2

Wind Speed

Reference reading (m/s)	Measured reading (m/s)	Error (%)	Uncertainty (%)
0.0	0.0	N/A	3.6
2.0	2.0	0.0	3.6
5.0	4.9	-2.0	3.6
8.0	7.7	-3.8	3.6

Wind Direction

Reference reading	Measured reading	Error	Uncertainty
0°	0°	0°	5°
45°	45°	0°	5°
90°	90°	0°	5°
135°	135°	0°	5°
180°	180°	0°	5°
225°	225°	0°	5°
270°	270°	0°	5°
315°	315°	0°	5°

*** End of Certificate ***

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Appendix F – Weather information

General Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)	Total Rainfall (mm)	Mean Relative Humidity (%)
01/11/2023	23.6	29.1	0	70
02/11/2023	24.4	28.4	0	75
03/11/2023	24.3	29.1	0	78
04/11/2023	24.7	29.4	0	76
05/11/2023	25	30.1	0	77
06/11/2023	25.3	30.7	0	65
07/11/2023	25.3	26.8	0	70
08/11/2023	24.7	26	0	77
09/11/2023	24.8	27.3	Trace	81
10/11/2023	25.6	29.3	0	82
11/11/2023	24.8	26.5	2.5	85
12/11/2023	22	26.6	0.6	77
13/11/2023	20.3	25.2	0	67
14/11/2023	18.9	23.9	0	70
15/11/2023	20.7	25.2	0	71
16/11/2023	17.3	24	0	65
17/11/2023	15.6	21.9	0	37
18/11/2023	16.6	23	0	42
19/11/2023	18.5	23.3	0	59
20/11/2023	19	24.6	0	65
21/11/2023	20.3	24.6	0	70
22/11/2023	20.5	25.7	0	73
23/11/2023	20.5	26.3	0	74
24/11/2023	21.5	25	0	67
25/11/2023	20	24.3	0	66
26/11/2023	19.8	25.3	0	68
27/11/2023	20.2	26.7	0	68
28/11/2023	20.2	25.4	Trace	61
29/11/2023	21.2	24	0.2	73
30/11/2023	21.9	26	0	73

NOTE1: The above weather information was obtained from manned weather station of Hong Kong Observatory.

NOTE2: Trace means rainfall less than 0.12 mm

<https://www.hko.gov.hk/en/cis/dailyExtract.htm?y=2023&m=11>

Kai Tak Runway Park Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)
01/11/2023	23.6	29.2
02/11/2023	24.3	27.4
03/11/2023	24.3	28.6
04/11/2023	24.6	29.4
05/11/2023	24.8	29.7
06/11/2023	25.1	32.0
07/11/2023	25.4	27.1
08/11/2023	24.5	25.7
09/11/2023	24.6	26.8
10/11/2023	25.5	29.1
11/11/2023	24.5	26.3
12/11/2023	22.0	26.4
13/11/2023	20.4	25.5
14/11/2023	19.1	24.6
15/11/2023	20.6	25.3
16/11/2023	17.1	24.4
17/11/2023	15.9	22.9
18/11/2023	16.5	23.8
19/11/2023	18.7	23.6
20/11/2023	19.0	25.4
21/11/2023	20.1	25.6
22/11/2023	20.5	26.4
23/11/2023	20.1	27.8
24/11/2023	21.5	25.4
25/11/2023	19.8	24.8
26/11/2023	19.4	26.0
27/11/2023	19.8	28.4
28/11/2023	20.5	25.5
29/11/2023	20.8	24.2
30/11/2023	21.7	26.8

NOTE1: The above weather information was obtained from manned weather station of Kai Tak Runway Park.

https://i-lens.hk/hkweather/history_chart.php?date=2023-11-01&chart_type=DG_TEMP

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/11/2023	0:00	0.4	135	02/11/2023	0:00	0.4	112.5	03/11/2023	0:00	0.9	90	04/11/2023	0:00	1.3	270
01/11/2023	1:00	0.4	112.5	02/11/2023	1:00	0.9	112.5	03/11/2023	1:00	1.3	112.5	04/11/2023	1:00	0.9	270
01/11/2023	2:00	0.4	112.5	02/11/2023	2:00	0.9	90	03/11/2023	2:00	1.8	112.5	04/11/2023	2:00	1.3	247.5
01/11/2023	3:00	0.4	112.5	02/11/2023	3:00	0.4	90	03/11/2023	3:00	2.2	112.5	04/11/2023	3:00	1.8	270
01/11/2023	4:00	0.4	135	02/11/2023	4:00	0.4	112.5	03/11/2023	4:00	1.3	315	04/11/2023	4:00	2.2	270
01/11/2023	5:00	0.4	112.5	02/11/2023	5:00	0.9	112.5	03/11/2023	5:00	0.4	337.5	04/11/2023	5:00	1.3	247.5
01/11/2023	6:00	0.4	112.5	02/11/2023	6:00	1.3	90	03/11/2023	6:00	1.3	112.5	04/11/2023	6:00	0.9	247.5
01/11/2023	7:00	0.4	112.5	02/11/2023	7:00	1.3	90	03/11/2023	7:00	1.8	90	04/11/2023	7:00	0.4	90
01/11/2023	8:00	0.4	112.5	02/11/2023	8:00	0.9	112.5	03/11/2023	8:00	1.3	112.5	04/11/2023	8:00	0.4	90
01/11/2023	9:00	0.4	315	02/11/2023	9:00	0.4	112.5	03/11/2023	9:00	1.3	112.5	04/11/2023	9:00	0.4	112.5
01/11/2023	10:00	0.4	337.5	02/11/2023	10:00	0.9	112.5	03/11/2023	10:00	1.8	90	04/11/2023	10:00	0.4	112.5
01/11/2023	11:00	0.4	112.5	02/11/2023	11:00	0.9	90	03/11/2023	11:00	1.8	90	04/11/2023	11:00	0.4	135
01/11/2023	12:00	0.9	90	02/11/2023	12:00	0.4	90	03/11/2023	12:00	1.3	22.5	04/11/2023	12:00	0.4	112.5
01/11/2023	13:00	0.4	112.5	02/11/2023	13:00	0.4	112.5	03/11/2023	13:00	1.3	45	04/11/2023	13:00	0.4	112.5
01/11/2023	14:00	0.4	112.5	02/11/2023	14:00	0.9	112.5	03/11/2023	14:00	1.8	45	04/11/2023	14:00	0.4	112.5
01/11/2023	15:00	0.4	112.5	02/11/2023	15:00	1.3	90	03/11/2023	15:00	1.8	112.5	04/11/2023	15:00	0.4	112.5
01/11/2023	16:00	0.4	135	02/11/2023	16:00	1.3	90	03/11/2023	16:00	2.2	112.5	04/11/2023	16:00	0.4	315
01/11/2023	17:00	0.4	112.5	02/11/2023	17:00	0.4	135	03/11/2023	17:00	2.7	337.5	04/11/2023	17:00	0.4	337.5
01/11/2023	18:00	0.4	112.5	02/11/2023	18:00	0	135	03/11/2023	18:00	2.2	112.5	04/11/2023	18:00	0.4	112.5
01/11/2023	19:00	0.4	112.5	02/11/2023	19:00	0.4	135	03/11/2023	19:00	2.2	45	04/11/2023	19:00	0.9	90
01/11/2023	20:00	0.4	112.5	02/11/2023	20:00	0.4	135	03/11/2023	20:00	2.7	112.5	04/11/2023	20:00	0.4	112.5
01/11/2023	21:00	0.4	315	02/11/2023	21:00	0.4	112.5	03/11/2023	21:00	1.3	90	04/11/2023	21:00	0.9	112.5
01/11/2023	22:00	0.4	337.5	02/11/2023	22:00	0.9	112.5	03/11/2023	22:00	1.3	90	04/11/2023	22:00	0.4	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/11/2023	23:00	0.4	112.5	02/11/2023	23:00	0.4	112.5	03/11/2023	23:00	0.4	90	04/11/2023	23:00	0.9	112.5
05/11/2023	0:00	0.9	112.5	06/11/2023	0:00	0.4	135	07/11/2023	0:00	0.9	157.5	08/11/2023	0:00	0.4	157.5
05/11/2023	1:00	2.2	112.5	06/11/2023	1:00	0.4	67.5	07/11/2023	1:00	0.9	22.5	08/11/2023	1:00	0.9	157.5
05/11/2023	2:00	1.8	90	06/11/2023	2:00	1.3	112.5	07/11/2023	2:00	0.4	22.5	08/11/2023	2:00	0.9	22.5
05/11/2023	3:00	1.8	112.5	06/11/2023	3:00	0.9	135	07/11/2023	3:00	0.4	45	08/11/2023	3:00	0.4	22.5
05/11/2023	4:00	1.8	90	06/11/2023	4:00	0.4	112.5	07/11/2023	4:00	0.9	135	08/11/2023	4:00	0.4	45
05/11/2023	5:00	1.8	90	06/11/2023	5:00	0.9	112.5	07/11/2023	5:00	0.9	112.5	08/11/2023	5:00	0.9	135
05/11/2023	6:00	1.8	67.5	06/11/2023	6:00	0.9	90	07/11/2023	6:00	1.3	135	08/11/2023	6:00	0.4	112.5
05/11/2023	7:00	1.3	157.5	06/11/2023	7:00	0.9	292.5	07/11/2023	7:00	1.3	135	08/11/2023	7:00	0.4	135
05/11/2023	8:00	1.3	225	06/11/2023	8:00	0.9	112.5	07/11/2023	8:00	0.9	22.5	08/11/2023	8:00	0.4	112.5
05/11/2023	9:00	0.9	22.5	06/11/2023	9:00	0.9	247.5	07/11/2023	9:00	0.4	112.5	08/11/2023	9:00	0.4	90
05/11/2023	10:00	0.9	22.5	06/11/2023	10:00	0.9	247.5	07/11/2023	10:00	0.4	112.5	08/11/2023	10:00	0.9	90
05/11/2023	11:00	1.3	337.5	06/11/2023	11:00	1.3	315	07/11/2023	11:00	1.3	112.5	08/11/2023	11:00	1.3	135
05/11/2023	12:00	1.8	270	06/11/2023	12:00	0.9	157.5	07/11/2023	12:00	0.4	112.5	08/11/2023	12:00	1.3	90
05/11/2023	13:00	0.9	337.5	06/11/2023	13:00	0.9	22.5	07/11/2023	13:00	0.9	292.5	08/11/2023	13:00	0.4	315
05/11/2023	14:00	0.9	90	06/11/2023	14:00	0.4	22.5	07/11/2023	14:00	0.4	112.5	08/11/2023	14:00	0.4	67.5
05/11/2023	15:00	0.9	22.5	06/11/2023	15:00	0.4	45	07/11/2023	15:00	0.4	112.5	08/11/2023	15:00	1.3	112.5
05/11/2023	16:00	0.9	22.5	06/11/2023	16:00	0.9	135	07/11/2023	16:00	0.4	135	08/11/2023	16:00	0.9	135
05/11/2023	17:00	0.9	22.5	06/11/2023	17:00	0.9	112.5	07/11/2023	17:00	0.9	135	08/11/2023	17:00	0.4	112.5
05/11/2023	18:00	0.4	22.5	06/11/2023	18:00	1.3	135	07/11/2023	18:00	0.4	112.5	08/11/2023	18:00	0.9	112.5
05/11/2023	19:00	0.4	90	06/11/2023	19:00	1.3	135	07/11/2023	19:00	0.9	67.5	08/11/2023	19:00	0.9	90
05/11/2023	20:00	0.4	90	06/11/2023	20:00	0.9	22.5	07/11/2023	20:00	0.9	112.5	08/11/2023	20:00	0.9	67.5
05/11/2023	21:00	0.4	90	06/11/2023	21:00	0.4	112.5	07/11/2023	21:00	0.9	337.5	08/11/2023	21:00	0.9	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
05/11/2023	22:00	0.9	247.5	06/11/2023	22:00	0.4	112.5	07/11/2023	22:00	0.4	247.5	08/11/2023	22:00	0.9	337.5
05/11/2023	23:00	0.4	180	06/11/2023	23:00	1.3	112.5	07/11/2023	23:00	0.4	247.5	08/11/2023	23:00	0.9	337.5
09/11/2023	0:00	0.9	157.5	10/11/2023	0:00	0.9	22.5	11/11/2023	0:00	0.9	157.5	12/11/2023	0:00	0.4	22.5
09/11/2023	1:00	0.4	202.5	10/11/2023	1:00	1.3	22.5	11/11/2023	1:00	0.4	135	12/11/2023	1:00	0.4	22.5
09/11/2023	2:00	0.4	112.5	10/11/2023	2:00	1.3	45	11/11/2023	2:00	0.9	157.5	12/11/2023	2:00	0.9	45
09/11/2023	3:00	1.3	157.5	10/11/2023	3:00	0.9	135	11/11/2023	3:00	0.9	202.5	12/11/2023	3:00	0.9	135
09/11/2023	4:00	0.9	90	10/11/2023	4:00	0.4	112.5	11/11/2023	4:00	0.9	135	12/11/2023	4:00	1.3	112.5
09/11/2023	5:00	0.4	90	10/11/2023	5:00	0.9	135	11/11/2023	5:00	0.9	315	12/11/2023	5:00	1.3	135
09/11/2023	6:00	0.4	22.5	10/11/2023	6:00	1.3	135	11/11/2023	6:00	0.9	112.5	12/11/2023	6:00	0.9	135
09/11/2023	7:00	1.3	90	10/11/2023	7:00	0.9	22.5	11/11/2023	7:00	0.9	225	12/11/2023	7:00	0.4	22.5
09/11/2023	8:00	0.9	45	10/11/2023	8:00	0.4	112.5	11/11/2023	8:00	0.9	225	12/11/2023	8:00	0.4	112.5
09/11/2023	9:00	0.4	90	10/11/2023	9:00	0.4	112.5	11/11/2023	9:00	1.3	157.5	12/11/2023	9:00	1.3	112.5
09/11/2023	10:00	0.9	90	10/11/2023	10:00	1.3	112.5	11/11/2023	10:00	0.9	112.5	12/11/2023	10:00	0.9	112.5
09/11/2023	11:00	0.9	112.5	10/11/2023	11:00	0.9	112.5	11/11/2023	11:00	0.4	180	12/11/2023	11:00	0.4	112.5
09/11/2023	12:00	0.9	202.5	10/11/2023	12:00	0.4	315	11/11/2023	12:00	0.4	67.5	12/11/2023	12:00	0.4	112.5
09/11/2023	13:00	0.9	45	10/11/2023	13:00	0.9	67.5	11/11/2023	13:00	1.3	112.5	12/11/2023	13:00	1.3	135
09/11/2023	14:00	0.9	45	10/11/2023	14:00	1.3	90	11/11/2023	14:00	0.9	135	12/11/2023	14:00	0.9	90
09/11/2023	15:00	1.8	90	10/11/2023	15:00	1.8	90	11/11/2023	15:00	0.4	112.5	12/11/2023	15:00	1.8	157.5
09/11/2023	16:00	1.3	112.5	10/11/2023	16:00	0.9	90	11/11/2023	16:00	0.9	112.5	12/11/2023	16:00	1.8	90
09/11/2023	17:00	1.8	112.5	10/11/2023	17:00	1.3	112.5	11/11/2023	17:00	0.9	90	12/11/2023	17:00	1.8	112.5
09/11/2023	18:00	2.7	135	10/11/2023	18:00	0.9	22.5	11/11/2023	18:00	0.9	292.5	12/11/2023	18:00	1.8	112.5
09/11/2023	19:00	2.2	112.5	10/11/2023	19:00	1.3	22.5	11/11/2023	19:00	0.9	112.5	12/11/2023	19:00	1.3	112.5
09/11/2023	20:00	1.8	135	10/11/2023	20:00	1.3	22.5	11/11/2023	20:00	0.9	337.5	12/11/2023	20:00	1.3	90

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
09/11/2023	21:00	1.8	90	10/11/2023	21:00	0.4	22.5	11/11/2023	21:00	0.4	247.5	12/11/2023	21:00	0.9	112.5
09/11/2023	22:00	0.4	112.5	10/11/2023	22:00	0.4	22.5	11/11/2023	22:00	0.4	157.5	12/11/2023	22:00	0.9	135
09/11/2023	23:00	0.4	112.5	10/11/2023	23:00	0.9	22.5	11/11/2023	23:00	0.4	157.5	12/11/2023	23:00	0.9	112.5
13/11/2023	0:00	0.4	22.5	14/11/2023	0:00	0.9	157.5	15/11/2023	0:00	1.8	135	16/11/2023	0:00	0.9	135
13/11/2023	1:00	0.4	22.5	14/11/2023	1:00	0.9	22.5	15/11/2023	1:00	0.9	67.5	16/11/2023	1:00	0.9	112.5
13/11/2023	2:00	0.9	45	14/11/2023	2:00	0.4	22.5	15/11/2023	2:00	1.3	112.5	16/11/2023	2:00	0.9	135
13/11/2023	3:00	0.4	135	14/11/2023	3:00	0.4	45	15/11/2023	3:00	0.9	112.5	16/11/2023	3:00	1.3	112.5
13/11/2023	4:00	0.4	112.5	14/11/2023	4:00	0.9	135	15/11/2023	4:00	0.4	135	16/11/2023	4:00	0.9	135
13/11/2023	5:00	0.9	135	14/11/2023	5:00	0.9	112.5	15/11/2023	5:00	0.4	135	16/11/2023	5:00	1.3	67.5
13/11/2023	6:00	0.4	135	14/11/2023	6:00	0.4	135	15/11/2023	6:00	0.4	135	16/11/2023	6:00	1.3	157.5
13/11/2023	7:00	0.9	22.5	14/11/2023	7:00	0	135	15/11/2023	7:00	0.9	67.5	16/11/2023	7:00	1.3	135
13/11/2023	8:00	0.4	45	14/11/2023	8:00	0	22.5	15/11/2023	8:00	0.9	157.5	16/11/2023	8:00	1.3	112.5
13/11/2023	9:00	0.4	135	14/11/2023	9:00	0	112.5	15/11/2023	9:00	0.9	67.5	16/11/2023	9:00	0.9	112.5
13/11/2023	10:00	0.4	202.5	14/11/2023	10:00	0	112.5	15/11/2023	10:00	0.4	112.5	16/11/2023	10:00	0.9	135
13/11/2023	11:00	0.4	202.5	14/11/2023	11:00	0.9	135	15/11/2023	11:00	0.9	112.5	16/11/2023	11:00	0.9	112.5
13/11/2023	12:00	0.9	135	14/11/2023	12:00	0.9	135	15/11/2023	12:00	0	22.5	16/11/2023	12:00	0.9	135
13/11/2023	13:00	0.4	112.5	14/11/2023	13:00	0.9	112.5	15/11/2023	13:00	0.4	45	16/11/2023	13:00	0.9	135
13/11/2023	14:00	0.9	112.5	14/11/2023	14:00	0.9	90	15/11/2023	14:00	0.4	315	16/11/2023	14:00	0.9	112.5
13/11/2023	15:00	0.4	112.5	14/11/2023	15:00	0.9	90	15/11/2023	15:00	0.4	112.5	16/11/2023	15:00	0.9	135
13/11/2023	16:00	0.4	135	14/11/2023	16:00	0.9	90	15/11/2023	16:00	0.4	135	16/11/2023	16:00	1.3	67.5
13/11/2023	17:00	0.4	270	14/11/2023	17:00	0.9	90	15/11/2023	17:00	0.4	112.5	16/11/2023	17:00	1.3	157.5
13/11/2023	18:00	0.4	135	14/11/2023	18:00	0.9	90	15/11/2023	18:00	0.4	45	16/11/2023	18:00	1.3	135
13/11/2023	19:00	0.4	90	14/11/2023	19:00	0.9	90	15/11/2023	19:00	0.4	315	16/11/2023	19:00	1.3	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
13/11/2023	20:00	0.4	22.5	14/11/2023	20:00	0.4	90	15/11/2023	20:00	0.4	112.5	16/11/2023	20:00	0.9	112.5
13/11/2023	21:00	0.4	112.5	14/11/2023	21:00	1.8	90	15/11/2023	21:00	0.4	135	16/11/2023	21:00	0.9	135
13/11/2023	22:00	0.4	90	14/11/2023	22:00	1.3	135	15/11/2023	22:00	0.4	112.5	16/11/2023	22:00	0.9	112.5
13/11/2023	23:00	0.4	67.5	14/11/2023	23:00	1.3	112.5	15/11/2023	23:00	1.3	90	16/11/2023	23:00	0.9	135

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/11/2023	0:00	0.9	112.5	18/11/2023	0:00	0.9	292.5	19/11/2023	0:00	1.3	90	20/11/2023	0:00	0.4	22.5
17/11/2023	1:00	0.9	67.5	18/11/2023	1:00	0.9	112.5	19/11/2023	1:00	1.3	135	20/11/2023	1:00	0.9	337.5
17/11/2023	2:00	0.9	112.5	18/11/2023	2:00	0.9	135	19/11/2023	2:00	0.9	135	20/11/2023	2:00	0.9	45
17/11/2023	3:00	0.4	337.5	18/11/2023	3:00	0.9	135	19/11/2023	3:00	1.3	112.5	20/11/2023	3:00	1.3	90
17/11/2023	4:00	0.9	67.5	18/11/2023	4:00	1.3	135	19/11/2023	4:00	0.9	202.5	20/11/2023	4:00	1.3	45
17/11/2023	5:00	1.3	67.5	18/11/2023	5:00	0.9	315	19/11/2023	5:00	0.4	180	20/11/2023	5:00	1.3	112.5
17/11/2023	6:00	0.9	90	18/11/2023	6:00	1.3	112.5	19/11/2023	6:00	0.4	337.5	20/11/2023	6:00	1.3	45
17/11/2023	7:00	0.9	90	18/11/2023	7:00	0.9	135	19/11/2023	7:00	0.9	112.5	20/11/2023	7:00	1.3	90
17/11/2023	8:00	0.9	67.5	18/11/2023	8:00	0.4	45	19/11/2023	8:00	0.4	135	20/11/2023	8:00	0.9	67.5
17/11/2023	9:00	0.4	112.5	18/11/2023	9:00	1.3	337.5	19/11/2023	9:00	0.4	135	20/11/2023	9:00	1.3	67.5
17/11/2023	10:00	0.9	67.5	18/11/2023	10:00	0.9	202.5	19/11/2023	10:00	0.4	135	20/11/2023	10:00	1.8	67.5
17/11/2023	11:00	1.3	112.5	18/11/2023	11:00	1.3	45	19/11/2023	11:00	0.4	112.5	20/11/2023	11:00	1.3	67.5
17/11/2023	12:00	0.9	112.5	18/11/2023	12:00	0.9	112.5	19/11/2023	12:00	0.4	112.5	20/11/2023	12:00	0.9	135
17/11/2023	13:00	1.8	112.5	18/11/2023	13:00	0.4	337.5	19/11/2023	13:00	0.9	112.5	20/11/2023	13:00	0.4	135

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/11/2023	14:00	0.4	112.5	18/11/2023	14:00	0.9	67.5	19/11/2023	14:00	2.2	112.5	20/11/2023	14:00	1.3	45
17/11/2023	15:00	1.3	157.5	18/11/2023	15:00	1.3	67.5	19/11/2023	15:00	2.2	112.5	20/11/2023	15:00	0.4	90
17/11/2023	16:00	1.3	90	18/11/2023	16:00	0.9	90	19/11/2023	16:00	2.2	112.5	20/11/2023	16:00	0.4	45
17/11/2023	17:00	0.9	90	18/11/2023	17:00	0.9	90	19/11/2023	17:00	2.2	67.5	20/11/2023	17:00	0.4	112.5
17/11/2023	18:00	1.3	22.5	18/11/2023	18:00	0.4	90	19/11/2023	18:00	0.4	67.5	20/11/2023	18:00	1.3	45
17/11/2023	19:00	1.3	90	18/11/2023	19:00	0.9	90	19/11/2023	19:00	0.9	112.5	20/11/2023	19:00	0.9	90
17/11/2023	20:00	1.8	45	18/11/2023	20:00	0.4	90	19/11/2023	20:00	0.9	90	20/11/2023	20:00	1.3	67.5
17/11/2023	21:00	1.8	90	18/11/2023	21:00	0.4	90	19/11/2023	21:00	1.3	112.5	20/11/2023	21:00	0.9	67.5
17/11/2023	22:00	0.9	90	18/11/2023	22:00	0.4	90	19/11/2023	22:00	1.3	67.5	20/11/2023	22:00	0.9	67.5
17/11/2023	23:00	1.8	90	18/11/2023	23:00	0.9	22.5	19/11/2023	23:00	1.3	67.5	20/11/2023	23:00	0.9	67.5
21/11/2023	0:00	0.4	90	22/11/2023	0:00	0.4	112.5	23/11/2023	0:00	0.4	90	24/11/2023	0:00	1.3	45
21/11/2023	1:00	0.4	270	22/11/2023	1:00	1.3	45	23/11/2023	1:00	0.9	90	24/11/2023	1:00	0.9	270
21/11/2023	2:00	0.4	112.5	22/11/2023	2:00	0.9	90	23/11/2023	2:00	0.9	67.5	24/11/2023	2:00	0.9	90
21/11/2023	3:00	0.4	45	22/11/2023	3:00	0.9	90	23/11/2023	3:00	0.4	90	24/11/2023	3:00	0.9	337.5
21/11/2023	4:00	1.3	90	22/11/2023	4:00	0.4	67.5	23/11/2023	4:00	0.4	45	24/11/2023	4:00	1.3	90
21/11/2023	5:00	0.4	90	22/11/2023	5:00	0.4	90	23/11/2023	5:00	1.3	270	24/11/2023	5:00	0.4	112.5
21/11/2023	6:00	0.4	67.5	22/11/2023	6:00	0.9	45	23/11/2023	6:00	1.3	90	24/11/2023	6:00	1.3	67.5
21/11/2023	7:00	0.9	90	22/11/2023	7:00	0.4	270	23/11/2023	7:00	0.4	337.5	24/11/2023	7:00	0.9	67.5
21/11/2023	8:00	0.4	45	22/11/2023	8:00	0.4	90	23/11/2023	8:00	0.4	90	24/11/2023	8:00	0.9	67.5
21/11/2023	9:00	0.4	270	22/11/2023	9:00	0.9	337.5	23/11/2023	9:00	1.3	112.5	24/11/2023	9:00	0.9	67.5
21/11/2023	10:00	0.4	90	22/11/2023	10:00	0.4	90	23/11/2023	10:00	1.3	67.5	24/11/2023	10:00	0.4	67.5
21/11/2023	11:00	0.4	45	22/11/2023	11:00	0.4	112.5	23/11/2023	11:00	0.9	90	24/11/2023	11:00	0.4	67.5
21/11/2023	12:00	0.4	90	22/11/2023	12:00	1.3	67.5	23/11/2023	12:00	0.9	247.5	24/11/2023	12:00	0.9	67.5
21/11/2023	13:00	0.4	90	22/11/2023	13:00	1.3	112.5	23/11/2023	13:00	0.4	135	24/11/2023	13:00	0.4	67.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
21/11/2023	14:00	0.4	67.5	22/11/2023	14:00	0.9	90	23/11/2023	14:00	0	135	24/11/2023	14:00	0.4	67.5
21/11/2023	15:00	0.9	90	22/11/2023	15:00	1.8	225	23/11/2023	15:00	0.4	90	24/11/2023	15:00	0.9	67.5
21/11/2023	16:00	0.4	45	22/11/2023	16:00	0.4	67.5	23/11/2023	16:00	0.4	135	24/11/2023	16:00	0.4	90
21/11/2023	17:00	0.9	270	22/11/2023	17:00	0.9	67.5	23/11/2023	17:00	0.4	22.5	24/11/2023	17:00	0.4	112.5
21/11/2023	18:00	0.9	90	22/11/2023	18:00	0.4	67.5	23/11/2023	18:00	0.9	135	24/11/2023	18:00	1.3	67.5
21/11/2023	19:00	0.9	337.5	22/11/2023	19:00	0.4	67.5	23/11/2023	19:00	0.9	112.5	24/11/2023	19:00	0.9	90
21/11/2023	20:00	1.3	90	22/11/2023	20:00	0.4	67.5	23/11/2023	20:00	0.4	112.5	24/11/2023	20:00	0.9	90
21/11/2023	21:00	1.3	180	22/11/2023	21:00	0.9	90	23/11/2023	21:00	0.4	112.5	24/11/2023	21:00	0.9	135
21/11/2023	22:00	1.3	180	22/11/2023	22:00	0.9	90	23/11/2023	22:00	0.9	112.5	24/11/2023	22:00	0.9	112.5
21/11/2023	23:00	1.3	90	22/11/2023	23:00	0.4	112.5	23/11/2023	23:00	0.9	225	24/11/2023	23:00	0.9	112.5
25/11/2023	0:00	0.4	67.5	26/11/2023	0:00	0.9	112.5	27/11/2023	0:00	1.3	45	28/11/2023	0:00	0.9	90
25/11/2023	1:00	0.9	225	26/11/2023	1:00	0.9	112.5	27/11/2023	1:00	0.4	45	28/11/2023	1:00	0.9	67.5
25/11/2023	2:00	0.9	67.5	26/11/2023	2:00	0.9	90	27/11/2023	2:00	0.9	247.5	28/11/2023	2:00	0.4	112.5
25/11/2023	3:00	1.8	225	26/11/2023	3:00	0.9	135	27/11/2023	3:00	0.9	247.5	28/11/2023	3:00	0.4	90
25/11/2023	4:00	1.8	90	26/11/2023	4:00	0.4	247.5	27/11/2023	4:00	0.9	247.5	28/11/2023	4:00	0.9	112.5
25/11/2023	5:00	0.9	112.5	26/11/2023	5:00	0.9	180	27/11/2023	5:00	0.4	247.5	28/11/2023	5:00	0.9	90
25/11/2023	6:00	1.3	225	26/11/2023	6:00	0.9	135	27/11/2023	6:00	0.9	45	28/11/2023	6:00	0.9	315
25/11/2023	7:00	0.9	247.5	26/11/2023	7:00	0.4	90	27/11/2023	7:00	0.9	45	28/11/2023	7:00	0.4	315
25/11/2023	8:00	0.4	67.5	26/11/2023	8:00	1.3	90	27/11/2023	8:00	0.9	67.5	28/11/2023	8:00	0.9	90
25/11/2023	9:00	0.4	67.5	26/11/2023	9:00	0.9	90	27/11/2023	9:00	1.3	67.5	28/11/2023	9:00	0.9	270
25/11/2023	10:00	0.4	67.5	26/11/2023	10:00	1.3	22.5	27/11/2023	10:00	1.8	90	28/11/2023	10:00	0.9	157.5
25/11/2023	11:00	0.9	67.5	26/11/2023	11:00	0.9	22.5	27/11/2023	11:00	1.3	247.5	28/11/2023	11:00	0.9	45
25/11/2023	12:00	0.4	67.5	26/11/2023	12:00	0.9	22.5	27/11/2023	12:00	1.3	247.5	28/11/2023	12:00	1.3	45
25/11/2023	13:00	0.4	90	26/11/2023	13:00	0.9	22.5	27/11/2023	13:00	1.3	247.5	28/11/2023	13:00	0.4	45

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
25/11/2023	14:00	0.4	90	26/11/2023	14:00	1.3	22.5	27/11/2023	14:00	1.3	247.5	28/11/2023	14:00	0.9	45
25/11/2023	15:00	1.3	67.5	26/11/2023	15:00	1.3	90	27/11/2023	15:00	1.3	270	28/11/2023	15:00	0.9	45
25/11/2023	16:00	0.9	315	26/11/2023	16:00	1.3	135	27/11/2023	16:00	1.3	270	28/11/2023	16:00	0.9	45
25/11/2023	17:00	0.9	315	26/11/2023	17:00	1.3	112.5	27/11/2023	17:00	1.3	270	28/11/2023	17:00	0.4	45
25/11/2023	18:00	0.9	90	26/11/2023	18:00	1.3	135	27/11/2023	18:00	1.3	270	28/11/2023	18:00	0.9	45
25/11/2023	19:00	0.9	270	26/11/2023	19:00	1.3	112.5	27/11/2023	19:00	1.3	45	28/11/2023	19:00	0.9	45
25/11/2023	20:00	0.9	112.5	26/11/2023	20:00	1.3	135	27/11/2023	20:00	1.3	45	28/11/2023	20:00	0.9	67.5
25/11/2023	21:00	0.9	45	26/11/2023	21:00	1.3	90	27/11/2023	21:00	1.3	45	28/11/2023	21:00	1.3	67.5
25/11/2023	22:00	1.3	90	26/11/2023	22:00	1.3	157.5	27/11/2023	22:00	1.3	45	28/11/2023	22:00	1.8	90
25/11/2023	23:00	0.9	90	26/11/2023	23:00	0.9	247.5	27/11/2023	23:00	2.2	112.5	28/11/2023	23:00	2.2	90
29/11/2023	0:00	0.4	112.5	30/11/2023	0:00	0.4	45								
29/11/2023	1:00	0.4	135	30/11/2023	1:00	1.3	45								
29/11/2023	2:00	0.4	315	30/11/2023	2:00	1.3	45								
29/11/2023	3:00	0.9	90	30/11/2023	3:00	0.4	45								
29/11/2023	4:00	0.9	270	30/11/2023	4:00	0.9	45								
29/11/2023	5:00	0.4	112.5	30/11/2023	5:00	0.9	90								
29/11/2023	6:00	1.3	45	30/11/2023	6:00	0.9	135								
29/11/2023	7:00	0.9	90	30/11/2023	7:00	0.9	90								
29/11/2023	8:00	0.9	90	30/11/2023	8:00	0.9	270								
29/11/2023	9:00	0.4	67.5	30/11/2023	9:00	0.9	112.5								
29/11/2023	10:00	0.4	90	30/11/2023	10:00	0.9	45								
29/11/2023	11:00	0.9	45	30/11/2023	11:00	0.9	90								
29/11/2023	12:00	0.4	270	30/11/2023	12:00	0.4	90								
29/11/2023	13:00	0.4	90	30/11/2023	13:00	0.4	67.5								

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
29/11/2023	14:00	0.9	337.5	30/11/2023	14:00	1.8	90								
29/11/2023	15:00	0.9	90	30/11/2023	15:00	1.8	45								
29/11/2023	16:00	0.9	45	30/11/2023	16:00	1.8	270								
29/11/2023	17:00	0.9	45	30/11/2023	17:00	1.3	90								
29/11/2023	18:00	0.9	45	30/11/2023	18:00	0.9	90								
29/11/2023	19:00	0.9	45	30/11/2023	19:00	0.4	45								
29/11/2023	20:00	0.9	45	30/11/2023	20:00	0.9	45								
29/11/2023	21:00	2.2	90	30/11/2023	21:00	0.9	45								
29/11/2023	22:00	1.8	90	30/11/2023	22:00	0.9	45								
29/11/2023	23:00	1.8	90	30/11/2023	23:00	0.4	45								

Appendix G – 24-hr TSP monitoring results and graphical presentation

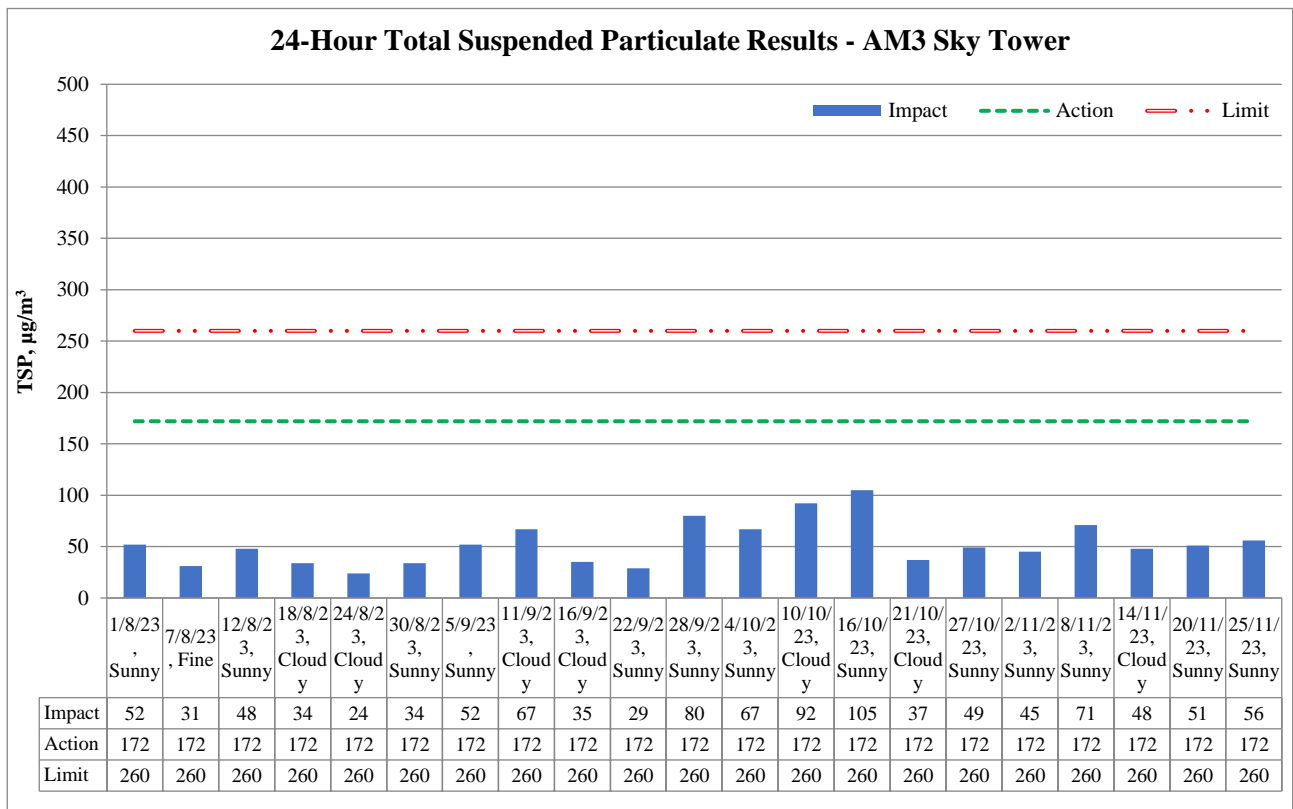
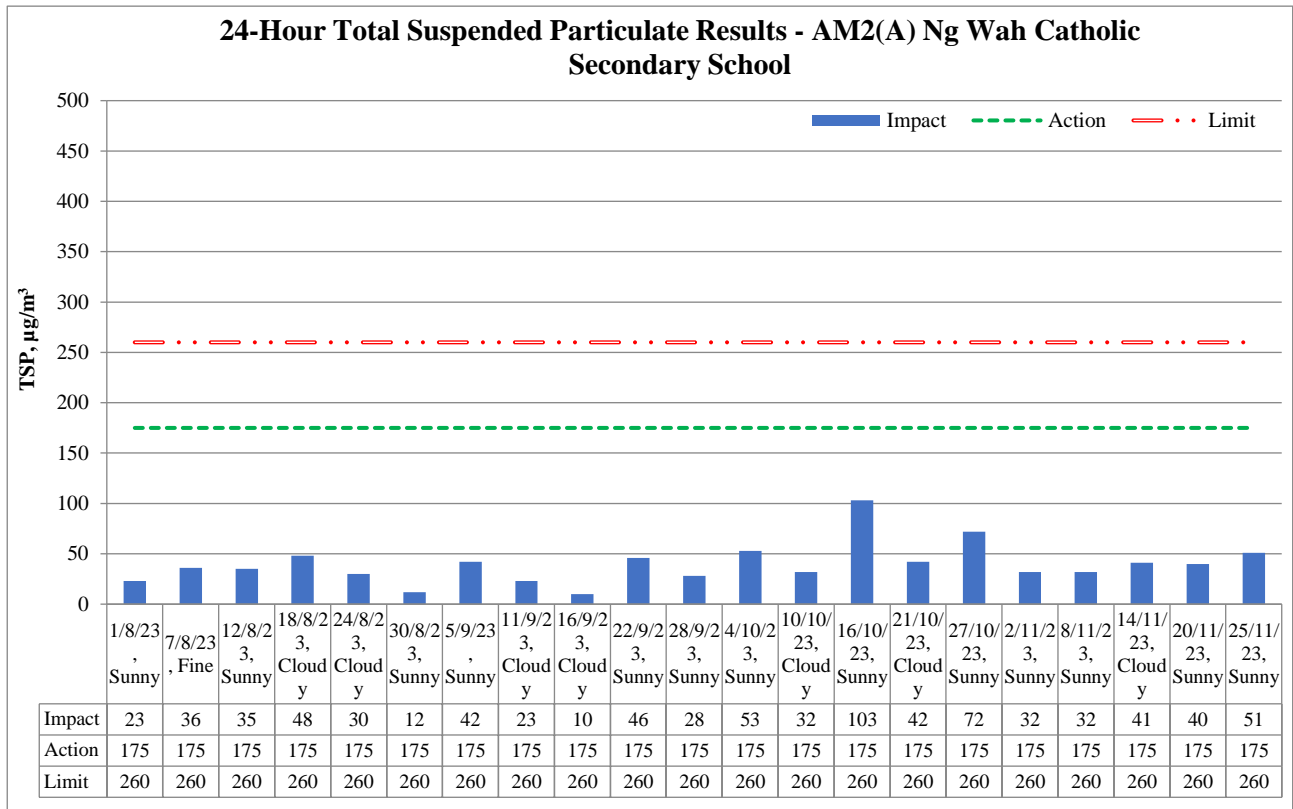
Location: AM2(A) – Ng Wah Catholic Secondary School

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
02/11/2023	Sunny	27.4	1015.5	18.0796	18.1411	0.0615	2023/11/2 9:20	2023/11/3 9:20	1440	50	50	1.35	1951	32
08/11/2023	Sunny	25.7	1015.8	18.1884	18.2545	0.0661	2023/11/8 13:30	2023/11/9 13:30	1440	52	52	1.41	2036	32
14/11/2023	Cloudy	18.8	1022.6	14.9422	15.0276	0.0854	2023/11/14 9:15	2023/11/15 9:15	1440	52	52	1.44	2067	41
20/11/2023	Sunny	25.4	1019.4	18.1503	18.2311	0.0808	2023/11/20 9:05	2023/11/21 9:05	1440	52	52	1.42	2041	40
25/11/2023	Sunny	24.8	1021	18.1193	18.2203	0.1010	2023/11/25 13:05	2023/11/26 13:05	1440	50	50	1.36	1965	51
												Maximum	51	
												Minimum	32	
												Average	39	
												Action Level	175	
												Limit Level	260	

Location: AM3 – Sky Tower

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
02/11/2023	Sunny	27.4	1015.5	14.9807	15.0621	0.0814	2023/11/2 13:26	2023/11/3 13:26	1440	46	46	1.26	1814	45
08/11/2023	Sunny	25.7	1015.8	18.4461	18.5748	0.1287	2023/11/8 9:29	2023/11/9 9:29	1440	46	46	1.26	1819	71
14/11/2023	Cloudy	18.8	1022.6	15.1155	15.2073	0.0918	2023/11/14 9:25	2023/11/15 9:25	1440	48	48	1.34	1930	48
20/11/2023	Sunny	25.4	1019.4	18.1588	18.2563	0.0975	2023/11/20 13:38	2023/11/21 13:38	1440	48	48	1.32	1905	51
25/11/2023	Sunny	24.8	1021	18.1061	18.2086	0.1025	2023/11/25 9:35	2023/11/26 9:35	1440	46	46	1.27	1827	56
													Maximum	71
													Minimum	45
													Average	54
													Action Level	172
													Limit Level	260

24-hour average TSP



Major Construction Activities	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for SB-01 tunnel	✓			
Construction of Underpinning of S14	✓	✓		
Construction of Retaining Wall Type 1 for S14	✓	✓	✓	✓
Construction of Pile Cap for S14		✓	✓	✓
Construction works for SMH404 and SMH505		✓	✓	✓
Construction of Permanent Shaft Structure of SB-01				✓
Demolition of bearing wall of S14			✓	✓
Modification works for Rising Main chamber WOC1, AVC2 and K1		✓	✓	✓
ELS modification and Backfilling works for Retrieving Shaft at Sa Po Road	✓			
Pre-bored socket H-pile construction works for Slip Road S14				
GI and Grouting works for Slip Road S14	✓			
Installation of post tensioning anchorage system at LW-02				✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RTBM dismantle		✓	✓	
RC construction for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RC construction for Subway KS10 Lift and Staircase	✓	✓		
RC construction works for lift and staircase of LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase			✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Road and drain construction works for Road L16	✓			
Road and Drain Construction works for Road L16, Commercial Street and Road D1		✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

Factors might affect the monitoring results	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

Appendix H – 1-hr TSP monitoring results and graphical presentation

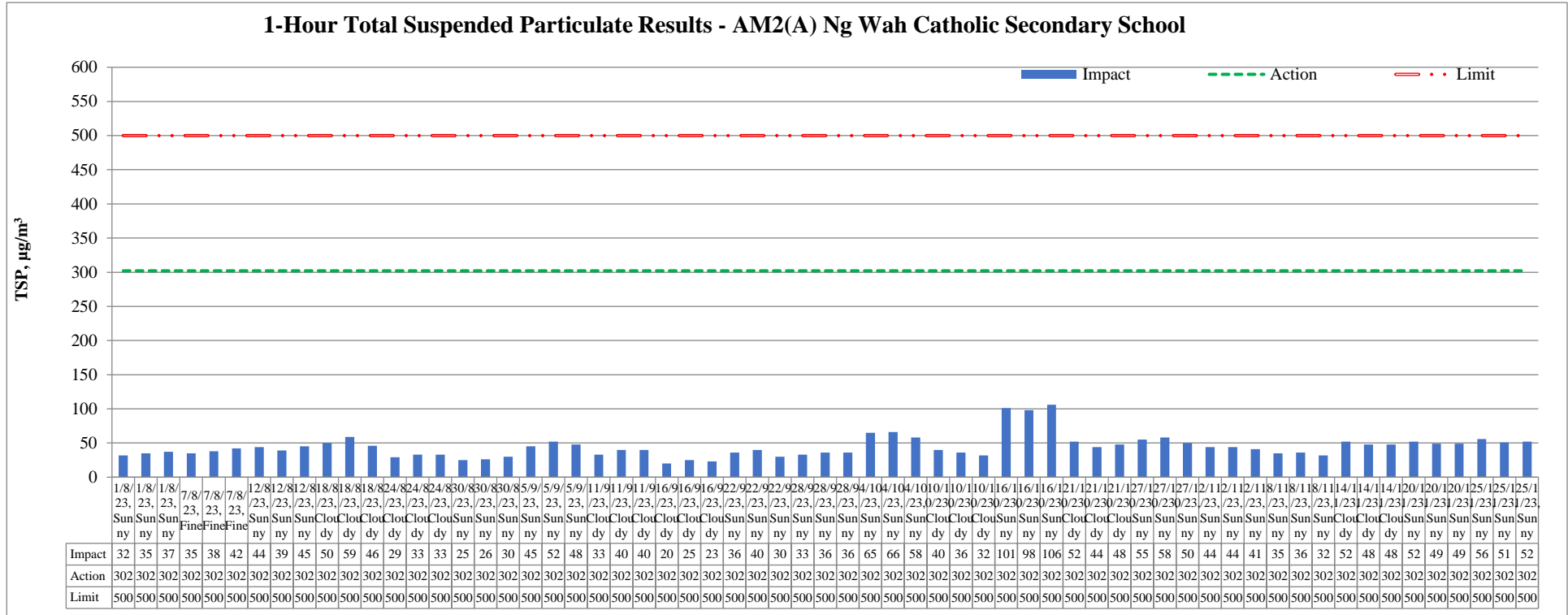
Location:
**AM2(A) –
 Ng Wah Catholic
 Secondary School**

Date	Measurement Period			1-hr TSP concentration, μg/m ³	Weather
	9:00	-	10:00		
02/11/2023	9:00	-	10:00	44	Sunny
	10:00	-	11:00	44	
	11:00	-	12:00	41	
08/11/2023	13:00	-	14:00	35	Sunny
	14:00	-	15:00	36	
	15:00	-	16:00	32	
14/11/2023	9:00	-	10:00	52	Cloudy
	10:00	-	11:00	48	
	11:00	-	12:00	48	
20/11/2023	9:00	-	10:00	52	Sunny
	10:00	-	11:00	49	
	11:00	-	12:00	49	
25/11/2023	13:00	-	14:00	56	Sunny
	14:00	-	15:00	51	
	15:00	-	16:00	52	
Maximum				56	
Minimum				32	
Average				46	
Action Level				302	
Limit Level				500	

Location:
**AM3 -
 Sky Tower**

Date	Measurement Period			1-hr TSP concentration, μg/m ³	Weather
02/11/2023	13:00	-	14:00	67	Sunny
	14:00	-	15:00	70	
	15:00	-	16:00	73	
08/11/2023	9:00	-	10:00	44	Sunny
	10:00	-	11:00	49	
	11:00	-	12:00	48	
14/11/2023	9:00	-	10:00	53	Cloudy
	10:00	-	11:00	53	
	11:00	-	12:00	55	
20/11/2023	13:00	-	14:00	60	Sunny
	14:00	-	15:00	59	
	15:00	-	16:00	55	
25/11/2023	9:00	-	10:00	67	Sunny
	10:00	-	11:00	70	
	11:00	-	12:00	73	
Maximum				73	
Minimum				39	
Average				54	
Action Level				301	
Limit Level				500	

1-hour average TSP



Major Construction Activities	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for SB-01 tunnel	✓			
Construction of Underpinning of S14	✓	✓		
Construction of Retaining Wall Type 1 for S14	✓	✓	✓	✓
Construction of Pile Cap for S14		✓	✓	✓
Construction works for SMH404 and SMH505		✓	✓	✓
Construction of Permanent Shaft Structure of SB-01				✓
Demolition of bearing wall of S14			✓	✓
Modification works for Rising Main chamber WOC1, AVC2 and K1		✓	✓	✓
ELS modification and Backfilling works for Retrieving Shaft at Sa Po Road	✓			
Pre-bored socket H-pile construction works for Slip Road S14				
GI and Grouting works for Slip Road S14	✓			
Installation of post tensioning anchorage system at LW-02				✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RTBM dismantle		✓	✓	
RC construction for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RC construction for Subway KS10 Lift and Staircase	✓	✓		
RC construction works for lift and staircase of LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase			✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Road and drain construction works for Road L16	✓			
Road and Drain Construction works for Road L16, Commercial Street and Road D1		✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

Factors might affect the monitoring results	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

Appendix I – Event and Action Plan for air quality

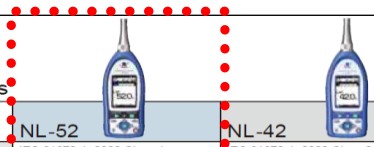
Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Repeat measurement to confirm finding. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and Supervisor /ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 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 Supervisor /ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues. 	<ol style="list-style-type: none"> 1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to Supervisor /ER and IEC within three working day of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, Supervisor /ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss possible remedial measures with ET and Contractor; 4. Advise the Supervisor /ER 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposal for remedial actions to Supervisor /ER and IEC

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results.	on the effectiveness of the proposed remedial measures.	4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	within three working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, Supervisor /ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, Supervisor /ER and Contractor to discuss the remedial action to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results; 7. If exceedance stop, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with Supervisor /ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposal for remedial actions to Supervisor /ER and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.

Appendix J – Calibration certificates, catalogue of noise monitoring equipment

Catalogue of Sound Level Meter

Specifications



NL-52		NL-42	
Applicable standards	IEC 61672-1: 2002 Class 1 ANSI S1.4-1983 Type 1 ANSI S1.4A-1985 Type 1 ANSI S1.43-1997 Type 1 JIS C 1509-1: 2005 Class 1	IEC 61672-1: 2002 Class 2 ANSI S1.4-1983 Type 2 ANSI S1.4A-1985 Type 2 ANSI S1.43-1997 Type 2 JIS C 1509-1: 2005 Class 2	
Measurement functions	Simultaneous measurement of the following items, with selected time weighting and frequency weighting		
Processing (main ch)	Instantaneous sound pressure level: L_p Equivalent continuous sound pressure level: L_{eq} Sound exposure level: L_E Maximum sound pressure level: L_{max} Minimum sound pressure level: L_{min} Percentile sound levels: L_N (0.1 to 99.9%, 0.1-increment steps, max. 5 values)		
Processing (sub ch)	Instantaneous sound pressure level: L_p		
Additional processing	In addition to main processing items, one of the following can be selected for simultaneous processing: C-weighted equivalent continuous sound level: L_{Ceq} C-weighted peak sound level: L_{Cpeak} Z-weighted peak sound level: L_{Zpeak} 1-time-weighted equivalent continuous sound level: $L_{A,eq} \#2$ Maximum 1-time-weighted equivalent continuous sound level: $L_{A,max} \#2$ The power average of the maximum level of each 5 second interval: L_{Amax} The frequency weighting for the additional processing synchronizes with the frequency weighting of the sub-channel, so when the sub-channel has A-weighting, L_{Amax} can be selected. When C-weighting (Z-weighting) is selected, the additional processing L_{Ceq} and L_{Cpeak} (L_{Zpeak}) are selectable.		
Measuring time	10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h)		
Microphone	Type: UC-59 Sensitivity level: -27 dB	Type: UC-52 Sensitivity level: -33 dB	
Measurement range	A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB Z-weighting: 38 dB to 138 dB C-weighting peak sound level: 55 dB to 141 dB Z-weighting peak sound level: 60 dB to 141 dB		
Inherent noise	A-weighting: 17 dB or less C-weighting: 25 dB or less Z-weighting: 30 dB or less	19 dB or less 27 dB or less 32 dB or less	
Frequency range	20 Hz to 20 kHz		
Frequency weighting	A, C, and Z		
Time weighting	F (Fast) and S (Slow)		
Level range	Single range (Linearity range: 113 dB) Bar graph display range max: Max. 110 dB (20 to 130 dB) Switching of bar graph display: Set the upper/lower limit in 10 dB increments.		
RMS detection circuit	Digital processing method		
Sampling cycle	20.8 μ s (L_p , L_{eq} , L_E , L_{max} , L_{min} , L_{peak}): sampling frequency: 48 kHz) 100 ms (L_N)		
Calibration	Measurement Law: electrical calibration performed according to IEC and JIS standards, using internally generated signals; acoustic calibration performed with the NC-74.		
Correction functions	Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed. Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.		
Delay time	The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.		
Back erase function	When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.		
Display	Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel) Numerical display update frequency: 1 s Bar graph update frequency: 100 ms		
Store	Manual	Data for measurement results are stored manually in single address increments. Internal memory: max. 1000 sets SD Card: depends on the capacity of the SD Card *1	
	Auto *2	Instantaneous values (L_p mode) and processed values (L_{eq} mode) are stored continuously and automatically at preset intervals.	
	L_p sampling cycle	100 ms, 200 ms, 1 s, L_{eq} 1 s	
	L_{eq} sampling cycle	10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h	
	Measurement Time	Max. 1000 h (depends on the capacity of the SD Card) *1	

* Windows is a trademark of Microsoft Corporation.
* Specifications subject to change without notice.

Distributed by:

Data recall	Allows viewing of stored data
Setup memory	Up to five setup configurations can be saved in internal memory, for later recall Start up via file settings previously stored on SD card possible
Waveform recording *3	
File format	Uncompressed waveform WAVE file
Sampling frequency	Select 48 kHz, 24 kHz or 12 kHz
Data length	Select 24 bit or 16 bit
Outputs	
DC output	Output DC signals using a frequency weighting characteristic selected by processing.
Output voltage	2.5 V, 25 mV / dB at bar graph display full scale
AC output	Output AC signals using a frequency weighting characteristic selected by processing or by A, C, Z-weighting.
Output voltage	1 V (rms values) at bar graph display full scale
Comparator output *2	Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW)
USB *1	Allows USB to be connected to a computer and recognized as a removable disk Allows USB to be controlled via communication commands
RS-232C communication	Allows for RS-232C communication via use of a dedicated cable
Data continuous output *2	
Type of data	Instantaneous value: L_p Processed value: L_{eq} , L_{max} , L_{min} , L_{peak}
Output interval	100 ms
Print out	Printing of measurement results on dedicated printer DPU-414
Power requirements	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply
Battery life (23 °C)	Alkaline battery LR6 (AA): 26 h NI-MH secondary battery: 25 h At the maximum * Depends on the setting
AC adapter	NC-98C (NC-34 for previous models cannot be used)
External power voltage	5 to 7 V (rated voltage: 6 V)
Current consumption	Approximately 90 mA (normal operation, rated voltage)
Ambient conditions	Temperature: -10 to +50 °C Humidity: 10 to 90% RH (non-condensing)
Dustproof / water-resistant performance *4	IP code: IP54 (except for microphone) See precautions regarding waterproofing
Dimensions, weight	Approx. 250 (H) x 76 (W) x 33 mm(D), approx. 400 g (with batteries)
Supplied accessories	Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MB x 1 (NX-42EX preinstalled model only)

Options

Product name	Product number
Extended function program (Inst on 512 MB SD card)	NX-42EX
Waveform recording program *2 (Inst on 2 GB SD card)	NX-42WR
Octave, 1/3 octave real-time analysis program *2 (Inst on 512 MB SD card)	NX-42RT
FFT analysis program *2 (Inst on 512 MB SD card)	NX-42FT
Data management software for environmental measurement	AS-60
Data management software for environmental measurement (Includes the octave and 1/3 octave data management software)	AS-60RT
Data management software for environmental measurement (Includes the vibration level data management software)	AS-60VM
Waveform analysis software	CAT-WAVE
SD Card 512 MB	SD-512M
SD Card 2 GB	SD-2G
AC adapter (100 V to 240 V)	NC-98C
Battery pack	BP-21
Microphone extension cables	EC-04 (from 2 m)
BNC-Pin output code	CC-24
Comparator output cable	CC-42C
Printer	DPU-414
Printer cable	CC-42P
RS 232C serial I/O cable	CC-42R
USB cable	—
Sound calibrator	NC-74
All-weather windscreen	WS-15
Windscreen mounting adapter	WS-1500
Rain-protection windscreen	WS-16
Sound level meter tripod	ST-80
All-weather windscreen tripod	ST-81

*1 Use Rion fully guaranteed products. *2 NX-42EX required (sold separately). *3 NX-42WR required (sold separately). *4 Protection against harmful dust and water splashing from any direction.

Precautions regarding waterproofing

Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.
To maintain the water and dust proof rating, internal packing replacement is required every two years (at cost).



ISO 14001 RION CO., LTD.
ISO 9001 RION CO., LTD.

RION CO., LTD.
http://www.rion.co.jp/english/

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This product is environment-friendly. It does not include toxic chemicals on our policy.
 This product is certified to an International Protection rating of IP54 (dust protected and resistant to splashing water).
This leaflet is printed with environmentally friendly vegetable-based ink on recycled paper.

1011-4 212.P.D

Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB23001488-0003

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

2 指示声级调整 (Indication SPL Calibration)

频率(Frequency)=1000Hz

传声器型号 (Microphone Type)	传声器编号 (Microphone SN.)	放大器型号 (Preamplifier Type)	放大器编号 (Preamplifier SN.)	声校准器型号 (Calibrator Type)	标准声压级 (Reference SPL)	校准前示值 (Before Calibration)	校准后示值 (After Calibration)	U (k=2)
					(dB)	(dB)	(dB)	(dB)
/	/	/	/	4226	94.0	93.8	93.8	0.2

3 级线性 (Level Linearity)

3.1 参考级量程 (Reference Range)

频率(Frequency): 8000Hz

标准声级 (Standard)	指示声级 (Indication)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)	U (k=2)
(dB)	(dB)	(dB)	(dB)	(P/F)	(dB)
130.0	129.8	-0.2	±0.8	P	0.3
129.0	128.8	-0.2	±0.8	P	0.3
128.0	127.8	-0.2	±0.8	P	0.3
127.0	126.8	-0.2	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	119.9	-0.1	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	79.9	-0.1	±0.8	P	0.3
70.0	69.9	-0.1	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	49.9	-0.1	±0.8	P	0.3
40.0	39.9	-0.1	±0.8	P	0.3
35.0	34.8	-0.2	±0.8	P	0.3
34.0	33.8	-0.2	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.8	-0.2	±0.8	P	0.3
31.0	30.8	-0.2	±0.8	P	0.3
30.0	29.8	-0.2	±0.8	P	0.3

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证书编号(Certificate No.): 2HB23001488-0003

3.2 其它级量程 (Other Range)

频率(Frequency): 1000Hz

标准声级 (Standard)	指示声级 (Indication)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)	U (k=2)
(dB)	(dB)	(dB)	(dB)	(P/F)	(dB)
130.0	129.9	-0.1	±0.8	P	0.3
129.0	128.9	-0.1	±0.8	P	0.3
128.0	127.9	-0.1	±0.8	P	0.3
127.0	126.9	-0.1	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	120.0	0.0	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	80.0	0.0	±0.8	P	0.3
70.0	70.0	0.0	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	50.0	0.0	±0.8	P	0.3
40.0	40.0	0.0	±0.8	P	0.3
35.0	34.9	-0.1	±0.8	P	0.3
34.0	33.9	-0.1	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.9	-0.1	±0.8	P	0.3
31.0	30.9	-0.1	±0.8	P	0.3
30.0	29.9	-0.1	±0.8	P	0.3

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Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB23001488-0003

5 C计权特性(C-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
20	-6.6	-6.2	-0.4	±2.0	P	0.5
25	-4.7	-4.4	-0.3	+2.0 ~ -1.5	P	0.5
31.5	-3.0	-3.0	0.0	±1.5	P	0.5
40	-2.0	-2.0	0.0	±1.0	P	0.5
50	-1.3	-1.3	0.0	±1.0	P	0.5
63	-0.8	-0.8	0.0	±1.0	P	0.5
80	-0.4	-0.5	0.1	±1.0	P	0.5
100	-0.2	-0.3	0.1	±1.0	P	0.5
125	-0.1	-0.2	0.1	±1.0	P	0.5
160	0.0	-0.1	0.1	±1.0	P	0.5
200	0.0	0.0	0.0	±1.0	P	0.5
250	0.0	0.0	0.0	±1.0	P	0.5
315	0.0	0.0	0.0	±1.0	P	0.4
400	0.0	0.0	0.0	±1.0	P	0.4
500	0.0	0.0	0.0	±1.0	P	0.4
630	0.0	0.0	0.0	±1.0	P	0.4
800	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	-0.1	0.0	-0.1	±1.0	P	0.6
1600	-0.2	-0.1	-0.1	±1.0	P	0.6
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
2500	-0.5	-0.3	-0.2	±1.0	P	0.6
3150	-0.8	-0.5	-0.3	±1.0	P	0.6
4000	-1.1	-0.8	-0.3	±1.0	P	0.6
5000	-1.5	-1.3	-0.2	±1.5	P	0.6
6300	-2.1	-2.0	-0.1	+1.5 ~ -2.0	P	0.6
8000	-3.0	-3.0	0.0	+1.5 ~ -2.5	P	0.6
10000	-4.3	-4.4	0.1	+2.0 ~ -3.0	P	0.6
12500	-6.2	-6.2	0.0	+2.0 ~ -5.0	P	1.0
16000	-10.4	-8.5	-1.9	+2.5 ~ -16.0	P	1.0
20000	-20.3	-11.2	-9.1	+3.0 ~ -∞	P	1.0

Catalogue of Sound Calibrator

For microphone calibration **NC-74**

How to use

Carefully insert the microphone all the way into the coupler of the NC-74. Then simply turn the power on to apply a constant sound pressure level to the diaphragm of the microphone.

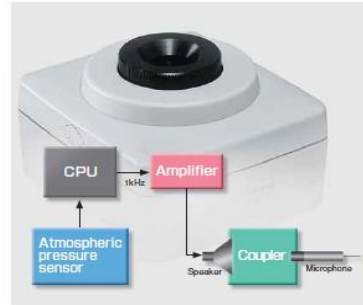


Usage example (NL series)

The performance of the NC-74 is suitable for calibration of high-precision sound level meters. The unit is compact, lightweight, and easy to use. Two IEC LR6 (size AA) alkaline batteries will power the unit for more than 30 hours of continuous use at room temperature.

Atmospheric pressure compensation principle

The NC-74 incorporates a sensor that detects atmospheric pressure. Based on the information provided by the sensor, the CPU controls the signal amplitude. This allows the unit to always provide the correct output for achieving constant sound pressure level, regardless of fluctuations in atmospheric pressure.



Using the 1/2-inch adapter

To allow calibration of sound level meter microphones with 1 inch diameter, the 1/2-inch microphone adapter can be removed. 1/2-inch microphones are calibrated with the adapter in place.



Specifications

Applicable standards	IEC 60942:2003 Class 1 JIS C 1515:2004 Class 1	IEC 61094-1 Type L81P UC-27 UC-28 UC-34
Suitable microphones	1-inch microphones	IEC 61094-1 Type L82aP UC-69 UC-67 UC-62A UC-62 UC-26 UC-30 UC-31 UC-33P
	1/2-inch microphones	
Nominal sound pressure level	94 dB	
Sound pressure level tolerance	±1.0 dB	
Nominal frequency	1 kHz	
Frequency tolerance	±1.0 % or less	
Power requirements	IEC LR6 (size AA) alkaline battery × 2	
Dimensions, mass	Approx. 49 (H) × 80 (W) × 74 (D) mm Approx. 200 g (including batteries)	
Supplied accessories	Class 1 IEC LR6 (size AA) alkaline battery × 2 1/2-inch microphone adapter NC-74-002 × 1	

* Specification subject to change without notice.

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ISO 14001 RION CO., LTD.
ISO 9001 RION CO., LTD.



Distributed by:

Printed in Japan 0510-1 0807.P-MP

Calibration Certificate of Sound Calibrator

AAST-SLC-06 Cal 5 Sep 2023



中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB23001715-0001
Certificate No.



委托单位: Castco Testing Centre Limited
Client
仪器名称: Sound Level Calibrator
Description
型号规格: NC-74
Model/Type
制造商: RION
Manufacturer
机身号: 34678556
Serial No.
管理号: AAST-SLC-06
Asset No.
接收日期: 2023-08-23 校准日期: 2023-09-05
Rec. Date Cal. Date
签发日期: 2023-09-05 建议校准周期: 12个月(12 months)
App. Date Reference Cal. Period
结论: 所校准项目符合技术要求(The calibrated items meet the technical requirements)
Conclusion

校准: 赵文钰 赵文钰
Calibrated by
检验: 钟颖 钟颖
Inspected by
签发: 郑木力 郑木力
Approved by

印章:



扫一扫查真伪

赛宝计量检测中心
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实验室地址: 广州市增城区朱村街朱村大道西78号
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Complaint Tel: 020-87236896
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Website: www.ceprei-cal.com

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Calibration Certificate of Sound Calibrator

证书编号(Certificate No.): 2HB23001715-0001

说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求, 获得中国合格评定国家认可委员会 (CNAS) 认可, 认可证书号为: CNAS L13344。
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.
2. 本机构出具的数据均可溯源到国际单位制 (SI) 单位和社会公用计量标准。
The data issued by this laboratory is traceable to International system of Units (SI) and national primary standards.
3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):
* JJG 176-2022 声校准器检定规程: Sound Pressure Level: 94dB、104dB、114dB、124dB(63Hz~8kHz); 94dB、104dB、114dB、(31.5Hz~16kHz); Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0.1%~10%, (20Hz~20kHz)
* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可, 其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)
4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

名称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
前置放大器(2239843) 304所	GFJGJL1001230304185/2024-03-22/航空	频率响应: $\pm 0.1\text{dB}$	(10~50000) Hz
数字多用表(MY45051674) 514所	GFJGJL1004230400378/2024-04-02/航天	DCV: $\pm 8 \times 10^{-6}$; DCI: $\pm 2 \times 10^{-5}$; ACV: $\pm 0.02\%$; ACI: $\pm 0.03\%$; R: $\pm 1 \times 10^{-5}$; f: $\pm 0.01\%$	DCV: 10mV~1000V; DCI: 1pA~1A; ACV: (10mV~700V) @ (1Hz~2MHz); ACI: (100pA~1A) @ (10Hz~100kHz); R: 10 $\mu\Omega$ ~1G Ω ; F: 1Hz~10MHz
PULSE分析系统(3160-106540)	4GC23000528-0009/2024-08-16/赛宝(广州)	频率: $U_{rel}=0.001\%$, $k=2$; 电压: $U_{rel}=0.10\%$, $k=2$	频率: 0.001Hz~51.2kHz, 电压: (1~10 ⁵ ~30)V
实验室标准传声器(2246093) 304所	GFJGJL1001230304187/2024-04-13/航空	LS级	10Hz~25kHz
5. 校准地点(The calibration place):
广州市增城区朱村街朱村大道西78号9栋110室
6. 环境条件(Environmental conditions):
温度(Temperature): 21.2°C 相对湿度(Relative Humidity): 60%
7. 本证书中给出的扩展不确定度依据JJF 1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子 k 得到。
The extended uncertainty given in this certificate is evaluated according to JJF 1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.
8. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。
"P" and "Pass" in this certificate stand for "Low Limit≤the measured value ≤High Limit", "F" and "Fail" stand for "the measured value < Low Limit or the measured value > High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc". The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.
9. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

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证书编号(Certificate No.): 2HB23001715-0001

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

2 声压级 (Sound Pressure Level)

规定声压级 (Prescribed SPL)	测量声压级 (Measured SPL)	声压级差的绝对值 (Absolute value of SPL)	接受限 (Limit)	结论 (Pass/Fail)	U ($k=2$) (dB)
(dB)	(dB)	(dB)	(dB)		(dB)
94	93.86	0.14	≤0.25	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.)	测量频率 (Measured Fre.)	频率误差的绝对值 (Absolute value of Fre.)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} ($k=2$) (%)
(Hz)	(Hz)	(%)	(%)		(%)
1000	1003.7	0.37	≤0.70	P	0.10

4 总失真+噪声 (Distortion and noise)

规定声压级 (Prescribed SPL)	规定频率 (Measured Fre.)	总失真+噪声 (Distortion and noise)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} ($k=2$) (%)
(dB)	(Hz)	(%)	(%)		(%)
94	1000	0.69	≤2.50	P	5.0

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数据页(Data sheet) ID: 013393

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Catalogue of Air Flow Meter (TSI TA440)

SPECIFICATIONS

THERMAL ANEMOMETERS
MODELS TA410, TA430 AND TA440

Velocity

Range (TA410)	0 to 20 m/s (0 to 4,000 ft/min)
Range (TA430, TA440)	0 to 30 m/s (0 to 6,000 ft/min)
Accuracy (TA410) ^{1,2}	±5% of reading or ±0.025 m/s (±5 ft/min), whichever is greater
Accuracy (TA430, TA440) ^{1,2}	±3% of reading or ±0.015 m/s (±3 ft/min), whichever is greater
Resolution	0.01 m/s (1 ft/min)

Duct Size (TA430, TA440)

Dimensions 1 to 635 cm in increments of 0.1 cm (1 to 250 inches in increments of 0.1 in.)

Volumetric Flow Rate (TA430, TA440)

Range Actual range is a function of velocity, and duct size

Temperature

Range (TA410, TA430)	-18 to 93°C (0 to 200°F)
Range (TA440)	-10 to 60°C (14 to 140°F)
Accuracy ³	±0.3°C (±0.5°F)
Resolution	0.1°C (0.1°F)

Relative Humidity (TA440 only)

Range	5 to 95% RH
Accuracy ⁴	±3% RH
Resolution	0.1% RH

Wet Bulb Temperature (TA440 only)

Range	5 to 60°C (40 to 140°F)
Resolution	0.1°C (0.1°F)

Dew Point (TA440 only)

Range	-15 to 49°C (5 to 120°F)
Resolution	0.1°C (0.1°F)

Instrument Temperature Range

Operating (Electronics)	5 to 45°C (40 to 113°F)
Model TA410, TA430	-18 to 93°C (0 to 200°F)
Operating (Probe)	-10 to 60°C (14 to 140°F)
Model TA440	-10 to 60°C (14 to 140°F)
Operating (Probe)	-20 to 60°C (-4 to 140°F)
Storage	-20 to 60°C (-4 to 140°F)

Data Storage Capabilities (TA430, TA440)

Range 12,700+ samples and 100 test IDs

Logging Interval (TA430, TA440)

1 second to 1 hour

Specifications subject to change without notice.

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Visit our website at www.airflowinstruments.co.uk for more information.

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France Tel: +33 491 11 87 64

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Time Constant (TA430, TA440)

User selectable

External Meter Dimensions

8.4 cm x 17.8 cm x 4.4 cm (3.3 in. x 7.0 in. x 1.8 in.)

Meter Weight with Batteries

0.27 kg (0.6 lbs.)

Meter Probe Dimensions

Probe Length	101.6 cm (40 in.)
Probe Diameter of Tip	7.0 mm (0.28 in.)
Probe Diameter of Base	13.0 mm (0.51 in.)

Articulating Probe Dimensions

Articulating Section Length	19.7 cm (7.8 in.)
Diameter of Articulating Knuckle	9.5 mm (0.38 in.)

Power Requirements

Four AA-size batteries or AC adapter

	TA410	TA430, TA430-A	TA440, TA440-A
Velocity range 0 to 20.00 m/s (0 to 4000 ft/min)	+		
Velocity range 0 to 30.00 m/s (0 to 6000 ft/min)		+	+
Temperature	+	+	+
Flow		+	+
Humidity, wet bulb, dew point			+
Probe	Straight	Straight or -A articulated	Straight or -A articulated
Variable time constant		+	+
Manual data logging		+	+
Auto save data logging			+
Statistics		+	+
Review data		+	+
LogDat2 downloading software		+	+
Free Certificate of Calibration	+	+	+

¹Temperature compensated over an air temperature range of 5 to 65°C (40 to 150°F).

²The accuracy statement begins at 30 ft/min through 4000 ft/min (0.15 m/s through 20 m/s) for the Model TA410, and 30 ft/min through 6,000 ft/min (0.15 m/s through 30 m/s) for Models TA430 and TA440.

³Accuracy with instrument case at 25°C (77°F), add uncertainty of 0.03°C (0.05°F) for change in instrument temperature.

⁴Accuracy with probe at 25°C (77°F). Add uncertainty of 0.2% RH/°C (0.1% RH/°F) for change in probe temperature. Includes 1% hysteresis.

Calibration Certificate of Air Flow Meter



Cal Lab Limited 校正實驗室有限公司
Room 2103, Technology Plaza, 29-35 Sha Tsui Road,
Tsuen Wan, NT, Hong Kong
Tel: +852 25680106 Email: info@callab.com.hk
Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0222301

Customer Information

Customer: Castco Testing Centre Limited
Address: 33, On Kui Street, Fanling, N.T.

Equipment Identification

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401706003	AAST-FLOW-03

Certificate Information

Date of Receipt:	11 January 2023	Calibration Condition:	23.5°C, 58%RH, 1003hPa
Date of Calibration:	13 January 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	SOP-112	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Hot Wire Anemometer	9535	T95351316004	11 August 2024

Result of Calibration

Air flow rate – Error of indication

Reference reading (L/min)	Measured reading (L/min)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
0.5	0.51	2.0	3.6	± 5 %	JIG 956-2013
1.0	0.99	-1.0	3.6	± 5 %	JIG 956-2013
2.0	2.03	1.5	3.6	± 5 %	JIG 956-2013
5.0	5.07	1.4	3.6	± 5 %	JIG 956-2013

CF-AFR-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.

Note3: The result 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.

Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Wing Cheng

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 13 January 2023

*** End of Certificate ***

CF-BEG-03

- The certificate shall not be reproduced except in full, without written approval of Cal Lab Calibration
- The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0222301
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Appendix K – Noise monitoring results and graphical presentation

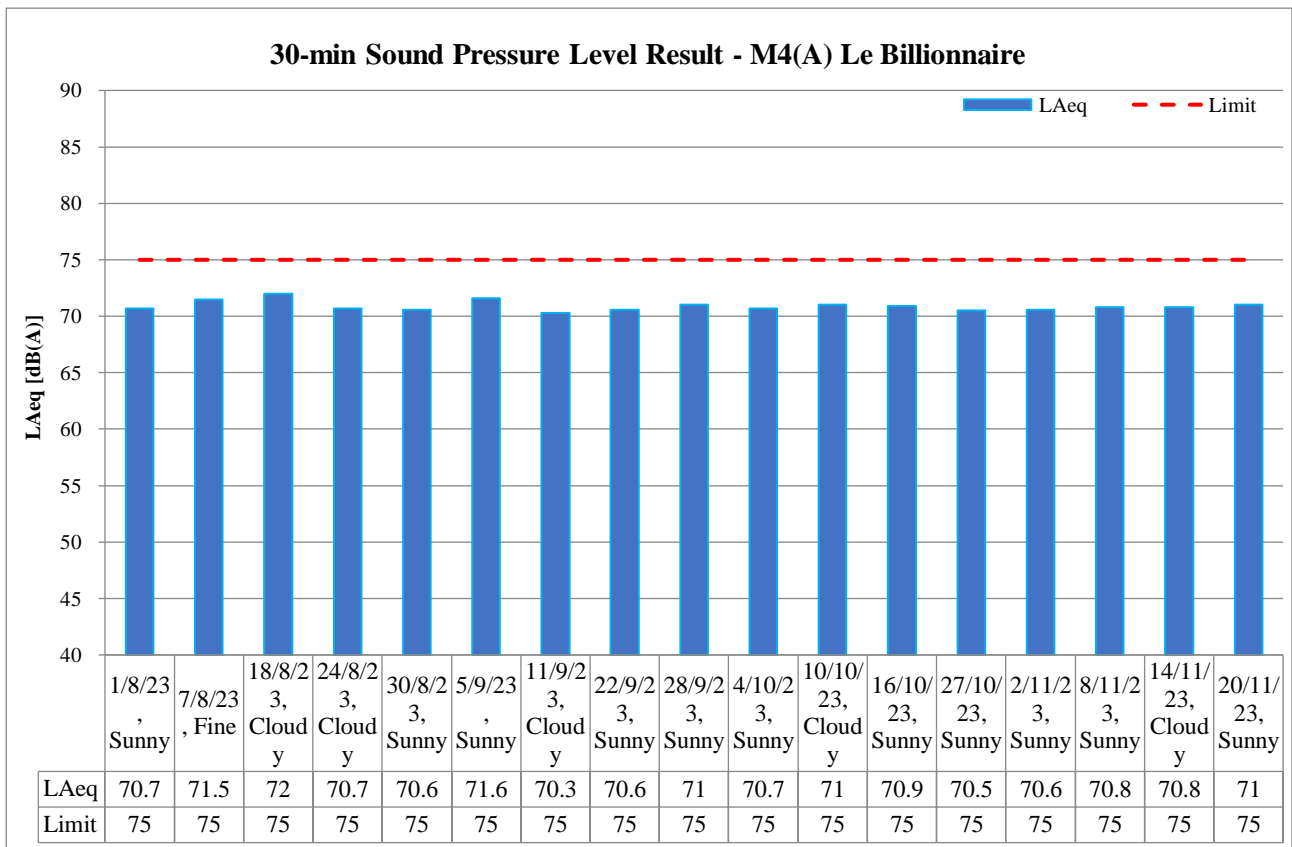
M4(A) – Le Billionnaire

Date	Temp (°C)	Wind Speed m/s	Weather	Measured Noise Level at M4(A), dB(A)						Limit	
				Time		Baseline	L _{Aeq}	L _{A10}	L _{A90}		
02/11/2023	27.4	0.7	Sunny	9:20	-	9:50	69.5	70.6	71.7	69.5	75
08/11/2023	25.7	0.3	Sunny	13:00	-	13:30	69.5	70.8	72.0	69.7	75
14/11/2023	18.8	0.3	Cloudy	14:15	-	14:45	69.5	70.8	71.8	69.5	75
20/11/2023	25.4	1.1	Sunny	9:25	-	9:55	69.5	71.0	72.3	69.9	75
								Maximum		71.0	
								Minimum		70.6	
								Average		70.8	

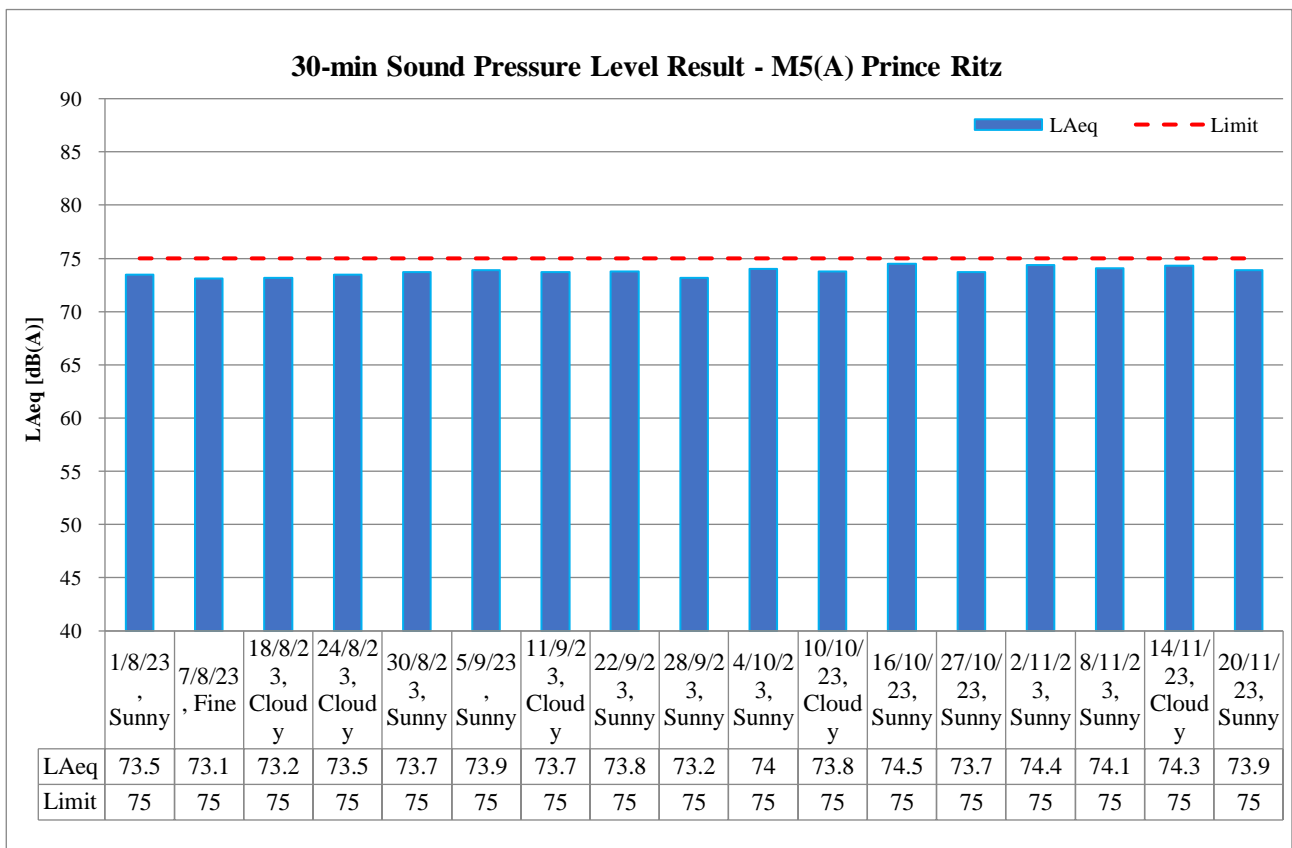
M5(A) – Prince Ritz

Date	Temp (°C)	Wind Speed m/s	Weather	Measured Noise Level at M5(A), dB(A)						Limit	
				Time		Baseline	L _{Aeq}	L _{A10}	L _{A90}		
02/11/2023	27.4	1.1	Sunny	10:30	-	11:00	72.5	74.4	76.0	72.0	75
08/11/2023	25.7	0.1	Sunny	14:00	-	14:30	72.5	74.1	75.8	71.9	75
14/11/2023	18.8	0.5	Cloudy	15:06	-	15:36	72.5	74.3	75.8	72.4	75
20/11/2023	25.4	0.9	Sunny	10:20	-	10:50	72.5	73.9	75.7	71.8	75
								Maximum		74.4	
								Minimum		73.9	
								Average		74.2	

L_{Aeq, 30-min} graphical results of M4(A) – Le Billionnaire



L_{Aeq, 30-min} graphical results of M5(A) – Prince Ritz



Major Construction Activities	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for SB-01 tunnel	✓			
Construction of Underpinning of S14	✓	✓		
Construction of Retaining Wall Type 1 for S14	✓	✓	✓	✓
Construction of Pile Cap for S14		✓	✓	✓
Construction works for SMH404 and SMH505		✓	✓	✓
Construction of Permanent Shaft Structure of SB-01				✓
Demolition of bearing wall of S14			✓	✓
Modification works for Rising Main chamber WOC1, AVC2 and K1		✓	✓	✓
ELS modification and Backfilling works for Retrieving Shaft at Sa Po Road	✓			
Pre-bored socket H-pile construction works for Slip Road S14				
GI and Grouting works for Slip Road S14	✓			
Installation of post tensioning anchorage system at LW-02				✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RTBM dismantle		✓	✓	
RC construction for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RC construction for Subway KS10 Lift and Staircase	✓	✓		
RC construction works for lift and staircase of LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase			✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Road and drain construction works for Road L16	✓			
Road and Drain Construction works for Road L16, Commercial Street and Road D1		✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

Factors might affect the monitoring results	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

Appendix L – Event and Action Plan for noise

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify Supervisor / ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, Supervisor / ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly; 3. Advise the Supervisor / ER on the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 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. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposal to IEC and Supervisor / ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, Supervisor /ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contract's working procedure; 6. Discuss remedial measures required with the IEC, Contractor and Supervisor /ER; 7. Assess effectiveness of 	<ol style="list-style-type: none"> 1. Discuss the potential remedial actions with Supervisor /ER, ET and Contractor; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and Supervisor /ER within 3 working days of notification; 3. Implement the agreed proposal; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated. <p>(The above actions should be</p>

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	<p>Contractor's remedial actions and keep IEC, EPD, and Supervisor /ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified.)</p>		<p>exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<p>taken within 2 working days after the exceedance is identified.)</p>

Appendix M – Event and Action Plan for Landscape and Visual Impact

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary.	1. Undertake remedial design if necessary.	
Non-conformity on one occasion	1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 4. Monitor remedial actions until rectification has been completed.	1. Check report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.
Repeated Non-conformity	1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Increase monitoring frequency. 4. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If non-conformity stops, cease additional monitoring.	1. Check monitoring report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Supervise implementation of remedial measures.	1. Notify Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.

Appendix N – Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE FOR 2023 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated A + B	Broken Concrete Generated A	General fill Generated B	Broken Concrete Reused in the Contract	General Fill Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse
	[in '000m ³]	[in '000m ³]	[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]
JAN	0.67	0.00	0.67	0.00	0.09	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.01
FEB	0.81	0.00	0.81	0.00	0.08	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.01
MAR	0.79	0.00	0.79	0.00	0.08	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.01
APR	1.18	0.00	1.18	0.00	0.09	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.01
MAY	1.01	0.00	1.01	0.00	0.09	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.01
JUNE	0.23	0.00	0.23	0.00	0.05	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.01
SUB-TOTAL	4.69	0.00	4.69	0.00	0.48	0.00	4.21	0.00	0.00	0.00	0.00	0.00	0.06
JULY	0.30	0.00	0.30	0.00	0.06	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.01
AUG	0.90	0.00	0.90	0.00	0.06	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.01
SEPT	0.56	0.00	0.56	0.00	0.05	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.01
OCT	0.72	0.00	0.72	0.00	0.06	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.01
NOV	2.48	0.00	2.48	0.00	0.06	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.01
DEC													
TOTAL	9.65	0.00	9.65	0.00	0.77	0.00	8.88	0.00	0.00	0.00	0.00	0.00	0.11

Appendix O – Environmental Mitigation Implementation Schedule (EMIS)

EIA Ref	Recommended Mitigation Measures	Implementation			
Part B Water Quality		Not Observed	Yes	No	Remark
S8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. Particular attention should be paid to the control of silty surface runoff during storm events.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Drainage</i> On-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Sewage Effluent</i> Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Stormwater Discharges</i> Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Debris and Litter</i> In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

EIA Ref	Recommended Mitigation Measures	Implementation			
	is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur				
S8.8	Construction Works at or in Close Proximity of Storm Culvert or Seafront The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Part C Construction Noise Impact		Not Observed	Yes	No	Remark
S7.8	Use of quiet PME, movable barriers for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S7.9	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Part D Waste / Chemical Management		Not Observed	Yes	No	Remark
S5.2	Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Provision of sufficient waste disposal points and regular collection for waste. Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Separation of chemical wastes for special handling and appropriate treatment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S9.5	1)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 2)Training of site personnel in proper waste management and chemical waste handling procedures 3)Provision of sufficient waste disposal points and regular collection for disposal 4)Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers 5)A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

EIA Ref	Recommended Mitigation Measures	Implementation			
S9.5	Waste Reduction Measures 1) Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals 2) 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 3) Encourage collection of aluminum 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 4) Any unused chemicals or those with remaining functional capacity should be recycled 5) Proper storage and site practices to minimize the potential for damage or contamination of construction materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S9.5	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: 1) Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible 2) Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric 3) Skip hoist for material transport should be totally enclosed by impervious sheeting 4) Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site 5) The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores 6) The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle 7) All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S9.5	When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S9.5	Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Part E Landscape & Visual		Not Observed	Yes	No	Remark
S13.9	CM1 - All existing trees should be carefully protected during construction. CM2 - Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work. CM3 - Control of night-time lighting. CM4 - Erection of decorative screen hoarding.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Part F Air Quality		Not Observed	Yes	No	Remark
S6.8	Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	Misting for the dusty material should be carried out before being loaded into the vehicle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	Vehicle washing facilities should be provided at every vehicle exit point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

EIA Ref	Recommended Mitigation Measures	Implementation			
S6.8	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.5	8 times daily watering of the work site with active dust emitting activities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Appendix P – Summaries of Environmental Complaint, Warning,
Summon and Notification of Successful Prosecution**

Reporting Month: November 2023

Contract No.	Record of Complaint (Yes/No)	Record of Warning (Yes/No)	Notification of Summons and Successful Prosecutions (Yes/No)
ED/2018/05	No	No	No

Cumulative Statistics on Complaints, Notification of Summons and Successful Prosecutions upto reporting month

Contract No.	Record of Complaint	Record of Warning	Notification of Summons and Successful Prosecutions
ED/2018/05	1	0	0