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77th CONSOLIDATED MONTHLY EM&A REPORT

March 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/1188

Prepared by	**:**	Wingo So
Reviewed by	**:**	Cyrus Lai
Certified by	**:**	Colin Yung Independent Environmental Checker Fugro Technical Services Limited

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EXECUTIVE SUMMARY

i. This is the 77th Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 March and 31 March 2023.

ii. The construction activities undertaken in the reporting month are summarized as follow:

Contract No. KL/2014/01:

- Architectural features works at ground floor open space;
- DCS modification works at Shing Fung Road;
- Defect rectification works of pedestrian streets;
- Minor E&M works;
- Deck movement joint rectification
- TTA implementation for minor works at Shing Fung Road and;
- Deck cladding rectification and modification.

Contract No. KL/2015/02:

- Carry out finishing works, E&M works and clearing works inside the subway;
- Reinstate the road pavement at TTA Stage 1 and Stage 4-1;
- Release traffic from TTA stage 4-1;
- Installation of directional signs at PERE;

Contract No. ED/2018/05:

- Erection of falseworks and working platform for decking of Elevated Walkway LW-02
- RC construction for decking of LW-02
- RC construction works for lift and staircase of LW-02
- ELS and excavation works for retrieving shaft at Sa Po Road
- Steel back thrust construction at launching shaft for SB-01
- Erect gantry crane at launching shaft for SB-01
- Assembly of RTBM at launching shaft for SB-01
- Construction works for Road L16
- Construction works for DCS
- Construction works for Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10

Pre-bored socket H-pile construction works for Slip Road S14

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. KL/2014/01, Contract No. KL/2015/02, 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 Impact Prediction	Control Measures
Contract No. KL/2014/01:	
Air quality impact (dust)	• Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	• 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 • Provision of measures to prevent discharge into the stream.
Noise Impact	• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Waste/ Chemical Management	• Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. • Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.
Contract No. KL/2015/02:	
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 run-off)	• 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 • Provision of measures to prevent discharge into the stream.
Noise Impact	• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.
Waste	• Avoided oil leakage from PME

Major Impact Prediction	Control Measures
/Chemical Management	• Provided drip tray with adequate capacity and well maintained to chemical and oil containers
Contract No. ED/2018/05:	
Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual	• 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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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:

a) Road D1 – a dual 2-lane carriageway of approximately 1.3 km long.
b) Road D2 – a dual 3-lane carriageway of approximately 1.1 km long.
c) Road D3 – a dual 2-lane carriageway of approximately 2.3 km long.
d) 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 77th Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 March and 31 March 2023.

1.2 Summary of relevant Contract Information of Key Personnel

Party	Position	Name	Telephone	Fax/ E-mail
Contract No. KL/2014/01:				
Project Proponent (CEDD)	Engineer	Mr. Michael So	3579 2066	2739 0076
Engineer's Representative (AECOM)	SRE	Mr. Anthony Lok	3746 1801	2798 0783
IEC (KSMC)	IEC	Mr. Happy Lee	2618 2166	2120 7752
ET (Cinotech)	ET Leader	Mr. K.S Lee	2151 2091	3107 1388
	Audit Team Leader	Ms. Betty Choi	2151 2072	
Main Contractor (CCJV)	EO	Mr. Simon Yau	2960 1398	2960 1399
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. Colin Yung	3565 4114	2450 8032
ET (Cinotech)	ET Leader	Mr. K.S Lee	2151 2091	3107 1388
	Audit Team Leader	Ms. Betty Choy	2151 2072	
Main Contractor	Site Agent	Mr. W. M. Wong	6386 3535	2398 8301

Party	Position	Name	Telephone	Fax/ E-mail
(PWHJV)				
Contract No. ED/2018/05:				
Project Proponent (CEDD)	Permit Holder	Mr. Lam Shing Tim	3842 7090	st_lam@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/2014/01:
- Architectural features works at ground floor open space;
- DCS modification works at Shing Fung Road;
- Defect rectification works of pedestrian streets;
- Minor E&M works;
- Deck movement joint rectification
- TTA implementation for minor works at Shing Fung Road and;
- Deck cladding rectification and modification.

Contract No. KL/2015/02:
- Carry out finishing works, E&M works and clearing works inside the subway;
- Reinstate the road pavement at TTA Stage 1 and Stage 4-1;
- Release traffic from TTA stage 4-1;
- Installation of directional signs at PERE;

Contract No. ED/2018/05:
- Erection of falseworks and working platform for decking of Elevated Walkway LW-02
- RC construction for decking of LW-02
- RC construction works for lift and staircase of LW-02
- ELS and excavation works for retrieving shaft at Sa Po Road
- Steel back thrust construction at launching shaft for SB-01
- Erect gantry crane at launching shaft for SB-01
- Assembly of RTBM at launching shaft for SB-01
- Construction works for Road L16
- Construction works for DCS
- Construction works for Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14

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/2014/01:	
Noise, dust impact, water quality and waste generation	• Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles; • 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 mitigation measure to temporary use of chemicals; • Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.
Contract No. KL/2015/02:	
Noise, dust impact, water quality and waste generation	• Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles; • 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; • 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/2018/05:	
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,

Major Environmental Impact	Control Measures
	and • Provide sufficient mitigation measures as recommended in Approved EIA Reports.

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 ($\mu g/m^3$)	Range ($\mu g/ m^3$)	Action Level ($\mu g/ m^3$)	Limit Level ($\mu g/ m^3$)
Contract No. KL/2014/01:					
N.A (No air quality monitoring is required for the Project)					
Contract No. KL/2015/02:					
1-hr TSP	AM2	65.4	11.4 – 166.0	346	500
24-hr TSP	AM2(A)	73.6	55.1 – 101.3	157	260
Contract No. ED/2018/05:					
24-hr TSP	AM2(A)	89	39 – 126	175	260
	AM3	83	39 – 113	172	
1-hr TSP	AM2(A)	76	35 – 108	302	500
	AM3	70	33 – 99	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/2014/01:		When one documented complaint is received.	
N.A (No Construction noise monitoring is required for the Project.)			NA
Contract No. KL/2015/02:			
M3(A)	68.5 – 75.4 #		75
M4	69.4 – 75.2 #		70*
M5(C)	72.3 – 78.3 #		75
Contract No. ED/2018/05:			
M4(A)	69.2 – 71.2		75
M5(A)	72.3 – 72.8		75

(*) Noise Limit Level is 65 dB(A) during school examination periods.
(#) Measured noise level ≤ 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.

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/2014/01:		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
Contract No. KL/2015/02:		
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/2014/01:

- Architectural features works at ground floor open space;
- Defect rectification works of pedestrian streets & at deck level;
- Minor E&M works;
- Installation of DCS louvres & Laying of paving blocks for footpath;
- Deck cladding rectification and modification;
- Deck movement joint rectification;
- Planting works at roundabout & footpath;
- TTA implementation for minor works at Shing Fung Road, and;
- TTA implementation, minor works at Wang Chiu Road / Kai Cheung Road

Contract No. KL/2015/02:

- Carry out finishing works, E&M works inside the subway;
- Laying DN800 salt main with the associated inspection pits and reinstate the road pavement and surface drain at TTA Stage 1;
- Demolish temporary concrete pavement and removal steel decking pavement at PERE outer east boundary;

Contract No. ED/2018/05:

- Erection of falsework and working platform for decking of Elevated Walkway LW-02
- RC construction of decking of LW-02
- RC construction of LW02 lift and staircase
- Excavation and ELS works for retrieving shaft at Sa Po Road
- RC construction at Launching Shaft for SB-01
- Construction of Road L16
- Construction of DCS
- Construction of Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing Subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14

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 Impact Prediction	Control Measures
Contract No. KL/2014/01:	
Air quality impact (dust)	• Frequent watering or covering stockpiles with tarpaulin or similar means; and • Watering of any earth moving activities.
Water quality impact (surface run-off)	• 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 • Provision of measures to prevent discharge into the stream.
Noise Impact	• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic barriers if necessary.

Major Impact Prediction	Control Measures
Waste/ Chemical Management	• Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. • Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.
Contract No. KL/2015/02:	
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 run-off)	• 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 • Provision of measures to prevent discharge into the stream.
Noise Impact	• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; • Controlling the number of plants use on site; • Regular maintenance of machines; and • Use of acoustic 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
Contract No. ED/2018/05:	
Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual	• 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.

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. KL/2014/01, Contract No. KL/2015/02, 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/2014/01
Kai Tak Development - Stage 2 Infrastructure works for Developments at Southern Part of the Former Runway

Civil Engineering and Development Department

EP-337/2009 & EP-445/2013/B

Contract No. KL/2014/01

Kai Tak Development –
Stage 2 Infrastructure works for Developments at Southern Part of the Former Runway

Monthly EM&A Report

March 2023

(Version 1.0)

Approved 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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嘉誠管理顧問有限公司
Ka Shing management consultant Limited

Our ref: 11-4-2023

11-4-2023 By email: clive.cheng@aecom-ktd.com and By hand

Supervising Officer Representative
Aecom Asia Co Ltd.
8/F Grand Central Plaza Tower 2
138 Shatin Rural Committee Road Sha Tin, N.T. Hong Kong
(Attn: Mr. Cheng Chi Hung)

Dear Mr. Cheng,

Re: Contract No. KL/2014/01 (Environmental Permit Nos. EP-337/2009 and EP-445/2013/B)
Kai Tak Development –Stage 2 Infrastructure Works for Developments at Southern Part of the Former Runway
Monthly EM&A report for March 2023 v1.0

Reference is made to the Environmental Team's submission of the Draft Monthly EM&A Report (Mar 2023 v1.0) provided to Independent Environmental Checker (IEC) via an email on 6-4-2023 for review and comment.

Please be informed that IEC has no adverse comment on the captioned submission. IEC hereby verifies the captioned submission in accordance with Specific Condition 2.2 of the Environmental Permit No. 337/2009 and 445/2013/B.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,

For and on behalf of
Ka Shing Management Consultant Limited

Lee
Independent Environmental Checker

c.c. CEDD Mr. Jason Wong (By email: kaichungwong@cedd.gov.hk)
AECOM Mr. Anthony Lok (By email: anthony.lok@aecom-ktd.com)
CEC-CCC Mr. Eric Fong (By email: eric-cs-fong@continental-engineering.com)
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EXECUTIVE SUMMARY

Introduction

1. This is the 84th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2014/01 - Kai Tak Development – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway" (Hereafter referred to as "the Project"). This contract work comprises two Schedule 2 designated projects (DP), namely the new distributor road D4 (part) and roads D3A & D4A serving the planned KTD. The DPs are part of the designated projects under Environmental Permits (EP) No.: EP-337/2009 ("New distributor roads serving the planned Kai Tak Development") and EP-445/2013/B ("Kai Tak Development – Roads D3A & D4A") respectively. This report documents the findings of EM&A Works conducted in March 2023.

2. With reference to the same principle of EIA report of the Project, air quality monitoring station should be provided at the Air Sensitive Receivers (ASR) within 500 m from the boundary of this Project while construction noise monitoring station should be provided at the Noise Sensitive Receivers (NSR) within 300 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.

3. The major site activities undertaken in the reporting month included:
   - Architectural features works at ground floor open space;
   - DCS modification works at Shing Fung Road;
   - Defect rectification works of pedestrian streets;
   - Minor E&M works;
   - Deck movement joint rectification
   - TTA implementation for minor works at Shing Fung Road and;
   - Deck cladding rectification and modification.

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 I**.

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

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

Environmental Monitoring for Air Quality and Construction Noise

6. No monitoring for air quality and construction noise is required. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

7. Licenses/Permits granted to the Project include the Environmental Permits (EP) for the Project, EP-337/2009 issued on 23 April 2009 and EP-445/2013 issued on 3 May 2013 (Amended Environmental Permit (No.: EP-445/2013/A) issued on 13 August 2014; further amendment of Environmental Permit (No.: EP-445/2013/B) issued on 3 May 2022).

8. Billing Account for Disposal of Construction Waste (A/C No. 7024073).

9. Registration of Chemical Waste Producer (License: 5213-247-C4004-01).

10. Water Discharge License (License: WT0029931-2017).

11. Construction Noise Permits (Permit: GW-RE0442-20, GW-RE0639-20, GW-RE0045-21, GW-RE0717-21 & GW-RE0656-21).

Key Information in the Reporting Month

12. Summary of key information in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

13. The future key environmental issues in the coming month include:
- Wastewater and runoff discharge from site;
- Noise from operation of the equipment, especially for rock-breaking activities, and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Dust generating activity and on haul road;
- Storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site.

Reporting Changes

14. Since the major parts of Works under Contract no. KL/2014/03 has been completed, the environmental monitoring works of EM&A monitoring station, KTD1a, was then handed over to the ET of Contract no. ED/2018/04 in August, 2020. In order to obtain the environmental impact monitoring data with higher representativeness based on several factors, such as distance between monitoring location and the sensitive receiver, non-project related interference, obstruction to the construction works on site and the power supply problem, the monitoring location KTD1a was relocated to the original location as proposed in the EM&A manual (AEIAR-174/2013), and renamed as KTD1 on 3 August 2020.

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 2 Infrastructure Works for Developments for Southern Part of the Former Runway is one of the construction stages of KTD. It contains two Schedule 2 DPs including new distributor roads serving the planned KTD and KTD Roads D3A & D4A. The general layout of the Project is shown in **Figure 1.**

1.2 One Environmental Permit (EP) No.: EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD and one Environmental Permit No.: EP-445/2013 was issued on 3 May 2013 for Kai Tak Development Roads D3A & D4A to Civil Engineering and Development Department (CEDD) as the Permit Holder. Pursuant to Section 13 of the EIAO, the Director of Environmental Protection Department amended the Environmental Permit No.: EP-445/2013 based on the Application No. VEP-449/2014 and the Environmental Permit (No.: EP-445/2013/A) was issued on 13 August 2014. The Environmental Permit (No.: EP-445/2013/A) was further amended and the Environmental Permit (No.: EP-445/2013/B) was issued on 3 May 2022.

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. EIA Reports (Register No. AEIAR-130/2009 and AEIAR-170/2013) were approved by the Environmental Protection Department (EPD) on 4 March 2009 and 3 May 2013 respectively.

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/2014/01 – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway. The construction work under KL/2014/01 comprises the construction of part of the Road D4 under the EP (EP-337/2009) and the construction of Roads D3A & D4A under the EP (EP-445/2013/B).

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 construction commencement of this Contract is on 13 April 2016. This is the 84th Monthly EM&A report summarizing the EM&A works for the Project in March 2023.

1.6 All project information since the commencement of work under EPs including Monthly EM&A Reports is made available to the public via internet access at the website: https://www.epd.gov.hk/eia/english/register/index8/vep4492014_content.html

Project Organizations

1.7 Different parties with different levels of involvement in the project organization include:

- Project Proponent – Civil Engineering and Development Department (CEDD).
- The Supervising Officer and the Supervising Officer's Representative (SO) – AECOM Asia Co. Ltd. (AECOM).
- Environmental Team (ET) – Cinotech Consultants Limited (CCL).
- Independent Environmental Checker (IEC) – Ka Shing Management Consultant Ltd. (KSMC).
- Contractor – Continental Engineering Corp. and Chit Cheung Construction Co. Ltd. Joint Venture (CCJV).

1.8 The key contacts of the Project are shown in **Table III.**

Table III Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Michael So	Engineer	3579 2066	27390076
AECOM	Supervising Officer	Mr. Anthony Lok	SRE	3746 1801	2798 0783
Cinotech	Environmental Team	Mr. K S Lee	Environmental Team Leader	2151 2091	3107 1388
		Ms. Betty Choi	Audit Team Leader	2151 2072	
KSMC	Independent Environmental Checker	Mr. Happy Lee	IEC	2618 2166	2120 7752
CCJV	Contractor	Mr. Simon Yau	Environmental Officer	2960 1398	2960 1399

Construction Activities undertaken during the Reporting Month

1.9 The site activities undertaken in the reporting month included:

- Architectural features works at ground floor open space;
- DCS modification works at Shing Fung Road;
- Defect rectification works of pedestrian streets;
- Minor E&M works;
- Deck movement joint rectification
- TTA implementation for minor works at Shing Fung Road and;
- Deck cladding rectification and modification.

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

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

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	• Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles; • 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 mitigation measure to temporary use of 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 5 of this report.

2. AIR QUALITY

Monitoring Requirements

2.1 With reference to the same principle of EIA report of the Project, air quality monitoring station should be provided at the Air Sensitive Receivers (ASR) within 500 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.

2.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1), the corresponding monitoring results for January 2023 should be accessed in the EM&A report for the reporting month. Appendix A shows the established Action and Limit Levels for the environmental monitoring works.

Observations

2.3 No monitoring for air quality is required for this report. No Action/Limit Level exceedance at KTD1 was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.

2.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of air quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C.**

3. NOISE

Monitoring Requirements

3.1 With reference to the same principle of EIA report of the Project, construction noise monitoring station should be provided at the Noise Sensitive Receivers (NSR) within 300 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.

3.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1), the corresponding monitoring results for March 2023 should be accessed in the EM&A report for the reporting month. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Observations

3.3 No monitoring for construction noise is required for this report. No Action/Limit Level exceedance at KTD1 was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.

3.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of construction noise mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

4. LANDSCAPE AND VISUAL

Monitoring Requirements

4.1 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

4.2 Site audits were carried out on a weekly basis to monitor and audit 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 C**.

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

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

5. ENVIRONMENTAL AUDIT

Site Audits

5.1 Site audits 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 audits are attached in **Appendix C**.

5.2 Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 2, 7, 16, 22 & 29 March 2023 in the reporting month. IEC joint site inspection was conducted on 29 March 2023. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

5.3 All permits/licenses obtained for the Project are summarized in **Table V**.

Table V Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-337/2009	23 Apr 2009	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-445/2013/A	13 Aug 2014	N/A	Construction of Kai Tak Development roads D3A and D4A	Valid
EP-445/2013/B	3 May 2022	N/A	Construction of Kai Tak Development roads D3A and D4A	Valid
Effluent Discharge License				
WT00023634-2016	--	31 Mar 2021	Wastewater from the construction site including effluent treated by screen and sedimentation tank; There are no more need for the license after 31 March 2021 as the project is close to completion and no significant waste water is being generated from site.	Expired on 31 Mar 2021
WT0029931-2017	--	31 December 2022	Wastewater from the construction site including effluent treated by screen and sedimentation tank; There are no more need for the license after 31 December 2022 as the project is close to completion and no significant waste water is being generated from site.	Expired on 31 December 2022
Registration of Chemical Waste Producer				
5213-247-C4004-01	--	N/A	Chemical Waste Types: Surplus paint, waste contaminated by paint, diesel, waste contaminated by diesel, spent lubricating oil and waste, soil contaminated by lubricating oil.	Valid
Construction Noise Permit (CNP)				
GW-RE0442-20	14 Jun 2020	13 Dec 2020	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive pilling and performing prescribed construction work. Construction Noise Permit for the use of powered mechanical	Expired on 13 Dec 2020
GW-RE0639-20	3 Aug 2020	19 Jan 2021		Expired on 19 Feb 2021

Permit No.	Valid Period		Details	Status
	From	To		
GW-RE0045-21	20 Jan 2021	19 Jul 2021	equipment for carrying out construction work other than percussive pilling and performing prescribed construction work.	Expired on 19 Jul 2021
GW-RE0656-21	9 Jul 2021	30 Sep 2021		Expired on 30 Sep 2021
GW-RE0717-21	30 Jul 2021	19 Jan 2022		Expired on 19 Jan 2022

Status of Waste Management

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

5.5 In respect of the dump truck cover, the Contractor is reminded to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

Implementation Status of Environmental Mitigation Measures

5.6 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 VI**.

Table VI Observations and Recommendations of Site Inspections

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

Summary of Mitigation Measures Implemented

5.7 An updated summary of the EMIS is provided in **Appendix E**.

Implementation Status of Event Action Plans

5.8 The Event Action Plans for noise and landscape and visual are presented in **Appendix D**. No Event Action Plan for air quality is considered necessary.

Construction Dust

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

Construction Noise

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

Landscape and visual

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

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

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

6. FUTURE KEY ISSUES

6.1 Major site activities undertaken for the coming two months include:

- Architectural features works at ground floor open space;
- Defect rectification works of pedestrian streets & at deck level;
- Minor E&M works;
- Installation of DCS louvres & Laying of paving blocks for footpath;
- Deck cladding rectification and modification;
- Deck movement joint rectification;
- Planting works at roundabout & footpath;
- TTA implementation for minor works at Shing Fung Road, and;
- TTA implementation, minor works at Wang Chiu Road / Kai Cheung Road

6.2 Key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Silt, mud and sand along u-channels and sedimentation tanks;
- Noise from operation of the equipment, especially for rock-breaking activities and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site

6.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. April & May 2023 are summarized as follows:

Construction Works	**Major Impact Prediction**	**Control Measures**
As mentioned in Section 6.1	Air quality impact (dust)	a) Frequent watering or covering stockpiles with tarpaulin or similar means; and b) Watering of any earth moving activities.
	Water quality impact (surface run-off)	a) 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 b) Provision of measures to prevent discharge into the stream.
	Noise Impact	a) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; b) Controlling the number of plants use on site; c) Regular maintenance of machines; and d) Use of acoustic barriers if necessary.
	Waste/ Chemical Management	a) Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. b) Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.

7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

7.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken in March 2023.

Air Quality and Construction Noise

7.2 No regular monitoring air quality and noise monitoring is required for the Project. No Action/Limit Level exceedance was recorded.

Landscape and visual

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

Complaint and Prosecution

7.4 No environmental complaints and environmental prosecution were received in the reporting month.

7.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

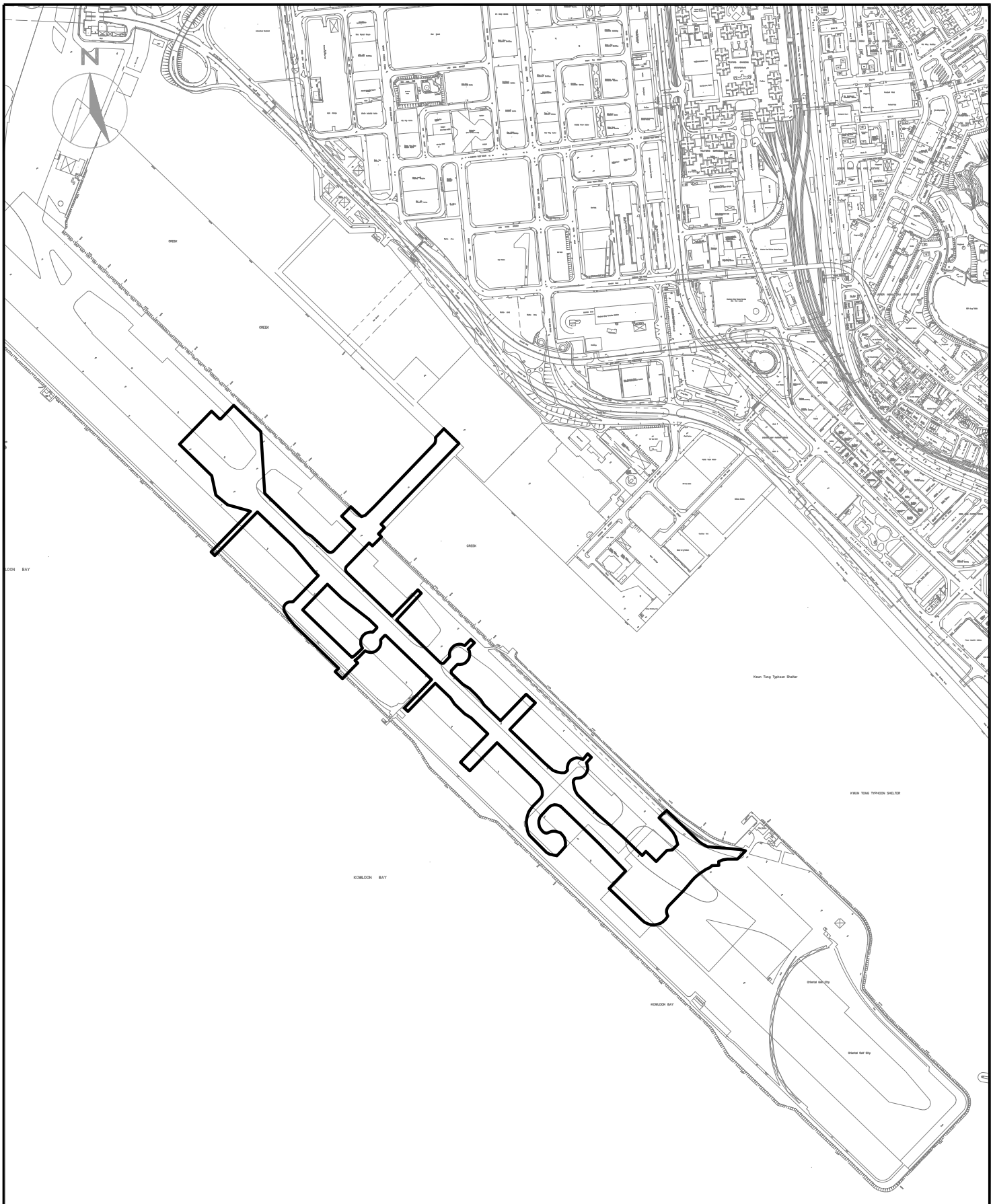
Waste/ chemical management

- To avoid the accumulation of general refuse, especially cigarette butt and other domestic waste.
- The construction/chemical material should be stoned at the proper place.
- The drip trays with adequate capacity and well maintained should be provided to chemicals

Air Quality

- The dusty material should be covered by impervious materials or maintained wet.

FIGURES



LEGEND:

SITE BOUNDARY

CINOTECH

Cinotech Consultants Limited

KL/2014/01 KAI TAK DEVELOPMENT - STAGE 2
INFRASTRUCTURE WORKS FOR DEVELOPMENT AT
SOUTHERN PART OF THE FORMER RUNWAY

SITE LAYOUT PLAN

SCALE	1:1000@A4	DATE	MAY 2016
CHECK	JL	DRAWN	JW
JOB No.	MA15046	FIGURE NO. 1	REV -

APPENDIX A
ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Parameter	Action Level ($\mu g/ m^3$)	Limit Level[(1)(2)] ($\mu g/ m^3$)
KTD1	24-hr TSP	177	260
KTD1*	1-hr TSP	285	500

* 1-hr TSP monitoring should be required in case of complaints.

Table A-2 Action and Limit Levels for Construction Noise Monitoring

Time Period	Action Level	Limit Level[(1)(2)]
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: (1) 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.

(2) No regular noise impact monitoring station for this Contract. It is subject to the noise sensitive receiver(s) and additional monitoring work.

(*) 70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods respectively.

APPENDIX B
SUMMARY OF EXCEEDANCE

Contract No. KL/2014/01
Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

Appendix B – Summary of Exceedance

Exceedance Record for Contract No. KL/2014/01

Reporting Month: March 2023

(A) Exceedance Record for Construction Dust

(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 C
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230302
Date	02 March 2023 (Thursday)
Time	13:30 – 14:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	• ***F. Visual and Landscape***	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230222).	

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	Name	Signature	Date
Recorded by	Charles Fung		02 March 2023
Checked by	Colman Wong		06 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230307
Date	07 March 2023 (Tuesday)
Time	13:30 – 14:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	• ***F. Visual and Landscape***	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230302).	

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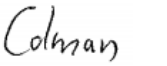
	Name	Signature	Date
Recorded by	KK Kwan		07 March 2023
Checked by	Colman Wong		13 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230316
Date	16 March 2023 (Tuesday)
Time	13:30 – 14:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	• ***F. Visual and Landscape***	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230307).	

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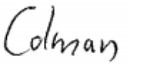
	Name	Signature	Date
Recorded by	KK Kwan		16 March 2023
Checked by	Colman Wong		20 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230322
Date	22 March 2023 (Tuesday)
Time	13:30 – 14:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	• ***F. Visual and Landscape***	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230316).	

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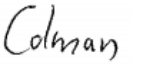
	Name	Signature	Date
Recorded by	KK Kwan		22 March 2023
Checked by	Colman Wong		27 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230329
Date	29 March 2023 (Wednesday)
Time	14:30 – 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	• ***F. Visual and Landscape***	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licenses	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230322).	

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	Name	Signature	Date
Recorded by	Charles Fung		29 March 2023
Checked by	Colman Wong		03 April 2023

APPENDIX D
EVENT ACTION PLANS

Appendix D - Event Action Plans

Event/Action Plan for Construction Noise

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

Appendix D - Event Action Plans

Event/Action Plan for Landscape and Visual

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

APPENDIX E
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	Mitigation Measures	Status
Construction Air Quality		
S3.2 (AEIAR-130/2009)	8 times daily watering of the work site with active dust emitting activities.	^
S4.8 (AEIAR-170/2013)	Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.	^
S3.2 (AEIAR-130/2009) and S4.8 (AEIAR-170/2013)	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. Onsite unpaved roads should be compacted and kept free of lose materials.	^
	● Vehicle washing facilities should be provided at every vehicle exit point.	^

EIA Ref.	Mitigation Measures	Status
	● 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; and ● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	^ ^ ^ ^
Construction Noise		
S3.3 (AEIAR-130/2009)	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.	^
S3.3 (AEIAR-130/2009)	Good Site Practice: ● 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	 ^ ^ ^ ^ ^

EIA Ref.	Mitigation Measures	Status
	practicable, in screening noise from on-site construction activities.	
S3.3 (AEIAR-130/2009)	Scheduling of Construction Works during School Examination Period	N/A
S3.8 (AEIAR-170/2013)	Provision of a landscaped deck along Roads D3A & D4A.	N/A
S3.8 (AEIAR-170/2013)	● Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A & D4A; ● Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and ● Provision of staircases with noise barriers next to Sites 4A1 and 4B1 It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.	N/A N/A N/A
S3.8 (AEIAR-170/2013)	Non-noise sensitive use areas within Sites 4A1 and 4B1.	N/A
S3.8 (AEIAR-170/2013)	Avoid sensitive façade with openable window facing Road D3A.	N/A
Construction Water Quality		
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<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: ● use of sediment traps ● adequate maintenance of drainage systems to prevent flooding and overflow	 ^ ^

EIA Ref.	Mitigation Measures	Status
	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.	^
	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.	^
S5.8 (AEIAR-170/2013)	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.	^
	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.	^
S3.4 (AEIAR-130/2009)	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	^

EIA Ref.	Mitigation Measures	Status
	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.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	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.	^
	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 (AEIAR-130/2009)	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.	^
	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.	^
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	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	^

EIA Ref.	Mitigation Measures	Status
	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.	
S5.8 (AEIAR-170/2013)	<u>Boring and Drilling Water</u> 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.	^
	<u>Acid Cleaning, Etching and Pickling Wastewater</u> 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	^
S3.4 (AEIAR-130/2009)	<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 (AEIAR-130/2009)	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.	^

EIA Ref.	Mitigation Measures	Status
S3.4 (AEIAR-130/2009)	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.	^
S5.8 (AEIAR-170/2013)	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.	^
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<u>Sewage Effluent</u> 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.	^
S5.8	Notices should be posted at conspicuous locations to remind the workers not to discharge	^

EIA Ref.	Mitigation Measures	Status
(AEIAR-170/2013)	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.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<u>Stormwater Discharges</u> Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	^
	<u>Debris and Litter</u> 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.	^
S5.8 (AEIAR-170/2013)	<u>Accidental Spillage</u> 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. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	^

EIA Ref.	Mitigation Measures	Status
	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. ● Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. ● Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	^ ^ ^ ^
Construction Waste Management		
S6.7 (AEIAR-170/2013)	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 (AEIAR-130/2009) and S6.7 (AEIAR-170/2013)	Good Site Practices 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: ● Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site Training of site personnel in proper waste management and chemical waste handling procedures ● Provision of sufficient waste disposal points and regular collection for disposal	^ ^

EIA Ref.	Mitigation Measures	Status
	● Appropriate measures to minimise 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) ● Regular cleaning and maintenance systems, sumps and oil interceptors ● Separation of chemical wastes for special handling and appropriate treatment	^ ^ ^ ^
	Waste Reduction Measures 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: ● 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 ● Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste ● Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	 ^ ^ ^ ^ ^ ^

EIA Ref.	Mitigation Measures	Status
S3.5 (AEIAR-130/2009)	Construction and Demolition Materials 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: ● Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. ● 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. 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	^ ^ ^ ^ ^ ^ ^ ^

EIA Ref.	Mitigation Measures	Status
	System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirement sand 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.	
S3.5 (AEIAR-130/2009)	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	^
Construction Landscape and Visual		
S3.8.12 (AEIAR-130/2009) and S7.9 (AEIAR-170/2013)	● Minimized construction area and contractor's temporary works areas. ● All existing trees should be carefully protected during construction. ● 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. ● Control of night-time lighting. ● Erection of decorative screen hoarding. ● Reduction of construction period to practical minimum. ● Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas. ● Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.	^ ^ ^ ^ ^ ^ ^ ^

Remarks:	EIA Report (AEIAR-130/2009) – Kai Tak Development EIA Report (AEIAR-170/2013) – Kai Tak Development – Roads D3A & D4A	
	^ Compliance of mitigation measure;	X Non-compliance of mitigation measure;
	N/A Not Applicable at this stage; N/A(1) Not observed;	• Non-compliance but rectified by the contractor;
	* Recommendation was made during site audit but improved/rectified by the contractor.	# Recommendation was made during site audit but not yet improved/rectified by the contractor.

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

Contract No. KL/2014/01

Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway

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

Reporting Month: March 2023

Contract No. KL/2014/01

Log Ref.	Location	Received Date	Details of Complaint/warning/summon and prosecution	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint/warning/summon and prosecution were received in the reporting period.

APPENDIX G
WASTE GENERATED QUANTITY

Appendix G. Monthly Summary Waste Flow Table

Name of Department: CEDD Contract No KL/2014/01

Monthly Summary Waste Flow Table for 2023

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects *	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in tonne)
Jan	110.01	0	0	0	82.86	0	0	0	0	0	27.15
Feb	54.19	0	0	0	6.43	0	0	0	0	0	47.76
Mar	23.57	0	0	0	6.66	0	0	0	0	0	16.91
Apr	0.00	0	0	0	0.00	0	0	0	0	0	0.00
May	0.00	0	0	0	0.00	0	0	0	0	0	0.00
June	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Sub-total	187.77	0	0	0	0.00	0	0	0	0	0	91.82
July	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Aug	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Sept	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Oct	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Nov	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Dec	0.00	0	0	0	0.00	0	0	0	0	0	0.00
Total	187.77	0	0	0	95.95	0	0	0	0	0	91.82

* Transfer to alterative disposal ground at Lung Kwu Sheung Tan EPD approved recycler

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Appendix B

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

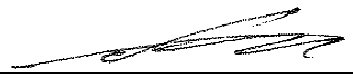
Contract No. KLN/2016/04
Environmental Monitoring Works for
Contract No. KL/2015/02
Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area

Monthly EM&A Report

March 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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Date 14 April 2023
Our Ref. MCL/ED/0163/2023/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 March 2023

We refer to your emails dated 3 and 14 April 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 me on 3565 4114 or our Cyrus Lai on 3565 4442.

Assuring you of our best attention at all times.

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

Colin K. L. Yung
Independent Environmental Checker

CY/cl

c.c. CEDD – Attn.: Mr. Ricky Chan
Attn.: Mr. Andy Wong
AECOM – Attn.: Mr. Vincent Lee
Attn.: Mr. Teddy Shih

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EXECUTIVE SUMMARY

Introduction

1. This is the 75th 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 March 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 - Cognitio 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:

- Carry out finishing works, E&M works and clearing works inside the subway;
- Reinstate the road pavement at TTA Stage 1 and Stage 4-1;
- Release traffic from TTA stage 4-1;
- Installation of directional signs at PERE;

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:

- Dust generation from stockpiles of dusty materials, exposed site area, excavation
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment; and
- Wastewater and runoff discharge from site.

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. Colin Yung	Independent Environmental Checker	3565 4114	2450 8032
PWHJV	Contractor	Mr. W.M. Wong	Site Agent	6386 3535	2398 8301

Construction Activities undertaken during the Reporting Month

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

- Carry out finishing works, E&M works and clearing works inside the subway;
- Reinstate the road pavement at TTA Stage 1 and Stage 4-1;
- Release traffic from TTA stage 4-1;
- Installation of directional signs at PERE;

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	• 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 m^3/min. and 1.4 m^3/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 through\hout all stages of the air quality monitoring.

Results and Observations

2.20. All 1-hour and 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 Latitude
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	• BSW Atech BSWA 308 & SVAN 959	2
Calibrator	• SOUNDTEK ST-120	1

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}, L_{90} and L_{10} 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 Piling 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:

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

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), µg/m³	Scenario2 (Mid 2013 to Late 2016), µg/m³	Reporting Month (March 2023), µg/m³	
			Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	65.4	11.4 – 166.0

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), µg/m³	Scenario2 (Mid 2013 to Late 2016), µg/m³	Reporting Month (March 2023), µg/m³	
			Average	Range
AM2(A) – Ng Wah Catholic Secondary School	145	169	73.6	55.1 – 101.3

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{eq\ (30min)}$ dB(A))	Reporting Month (March 2023), $L_{eq\ (30min)}$ dB(A)
M3(A) – The Bridge connecting The Latitude	Not predicted in EIA Report	68.5 – 75.4 (2)
M4 – Lee Kau Yan Memorial School	47 – 74	69.4 – 75.2 (1)
M5(C) – Mercy Grace's Home	Not predicted in EIA Report	72.3 – 78.3 (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 constriction 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 8, 15, 21 & 28 March 2023 in the reporting month. A joint site inspection with the representative of IEC, ER, the Contractor and the ET was conducted on 15 March 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	8 Nov 2019	4 May 2020	Expired
GW-RE0984-19	15 Dec 2019	24 Feb 2020	Expired
GW-RE0083-20	1 Mar 2020	1 June 2020	Expired
GW-RE0266-20	2 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

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
Water Quality	N/A	No environmental deficiency was identified in the reporting period.	N/A
Air Quality	N/A	No environmental deficiency was identified in the reporting period.	N/A
Noise	N/A	No environmental deficiency was identified in the reporting period.	N/A
Waste/ Chemical Management	N/A	No environmental deficiency was identified in the reporting period.	N/A
Landscape and Visual	N/A	No environmental deficiency was identified in the reporting period.	N/A
Permits/ Licenses	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:

- Carry out finishing works, E&M works inside the subway;
- Laying DN800 salt main with the associated inspection pits and reinstate the road pavement and surface drain at TTA Stage 1;
- Demolish temporary concrete pavement and removal steel decking pavement at PERE outer east boundary;

7.2. Key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
- Review and implementation of temporary drainage system for the surface runoff;
- Noise from operation of the equipment, especially for rock-breaking activities and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site; and
- Accumulation of general and construction waste on site.

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
- Provision of measures to prevent discharge into the stream.

Noise Impact

- Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;
- Controlling the number of plants use on site;
- 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 Quality

- The public drainage gully within the construction site shall be bounded by sand bags.

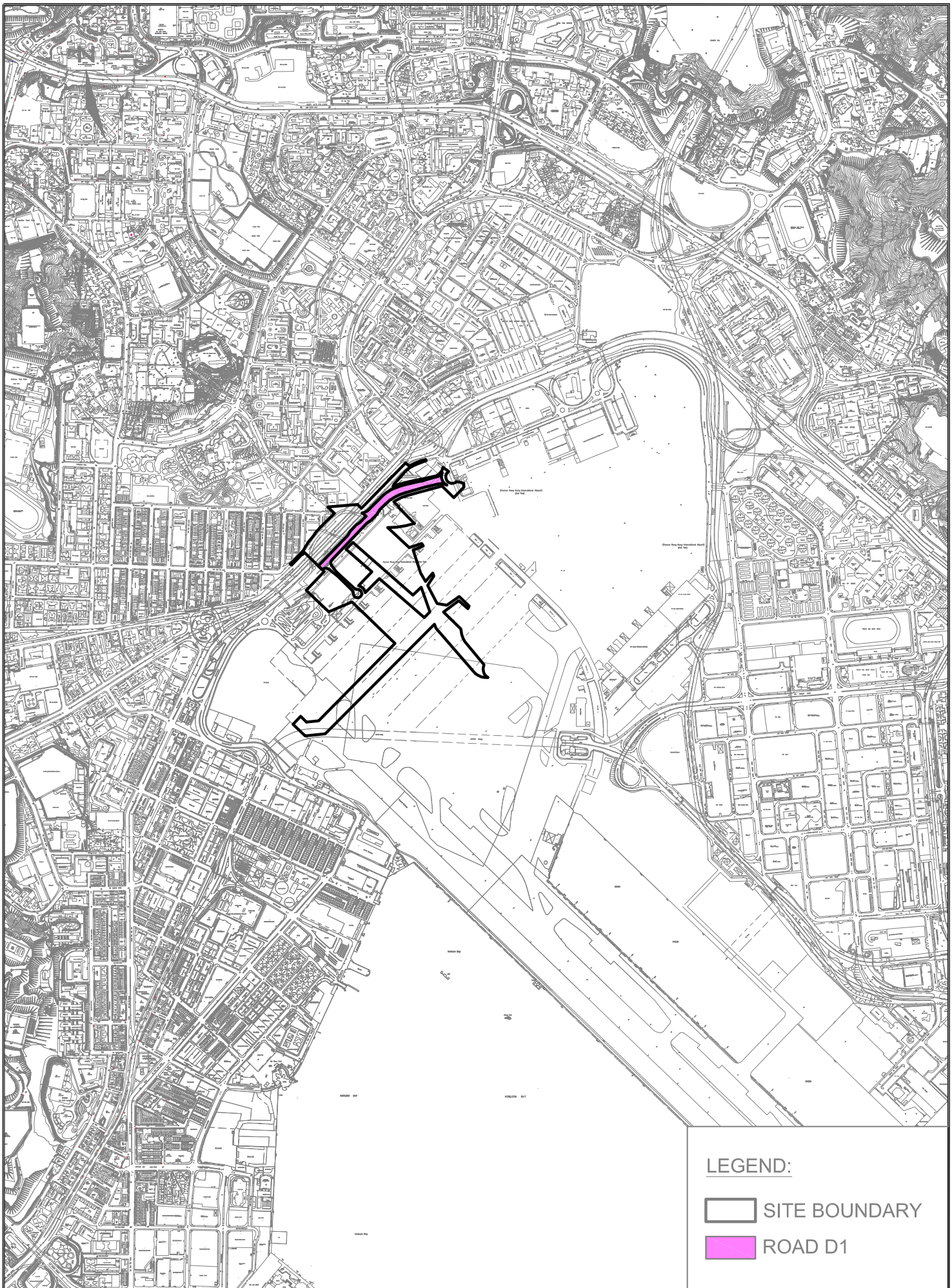
Air Quality

- The stockpile of dusty material should be covered by impervious materials or maintained wet.

Waste/Chemical Management

- Oil leakage from PME should be avoided
- The construction/chemical material should be stoned at the proper place.

FIGURES

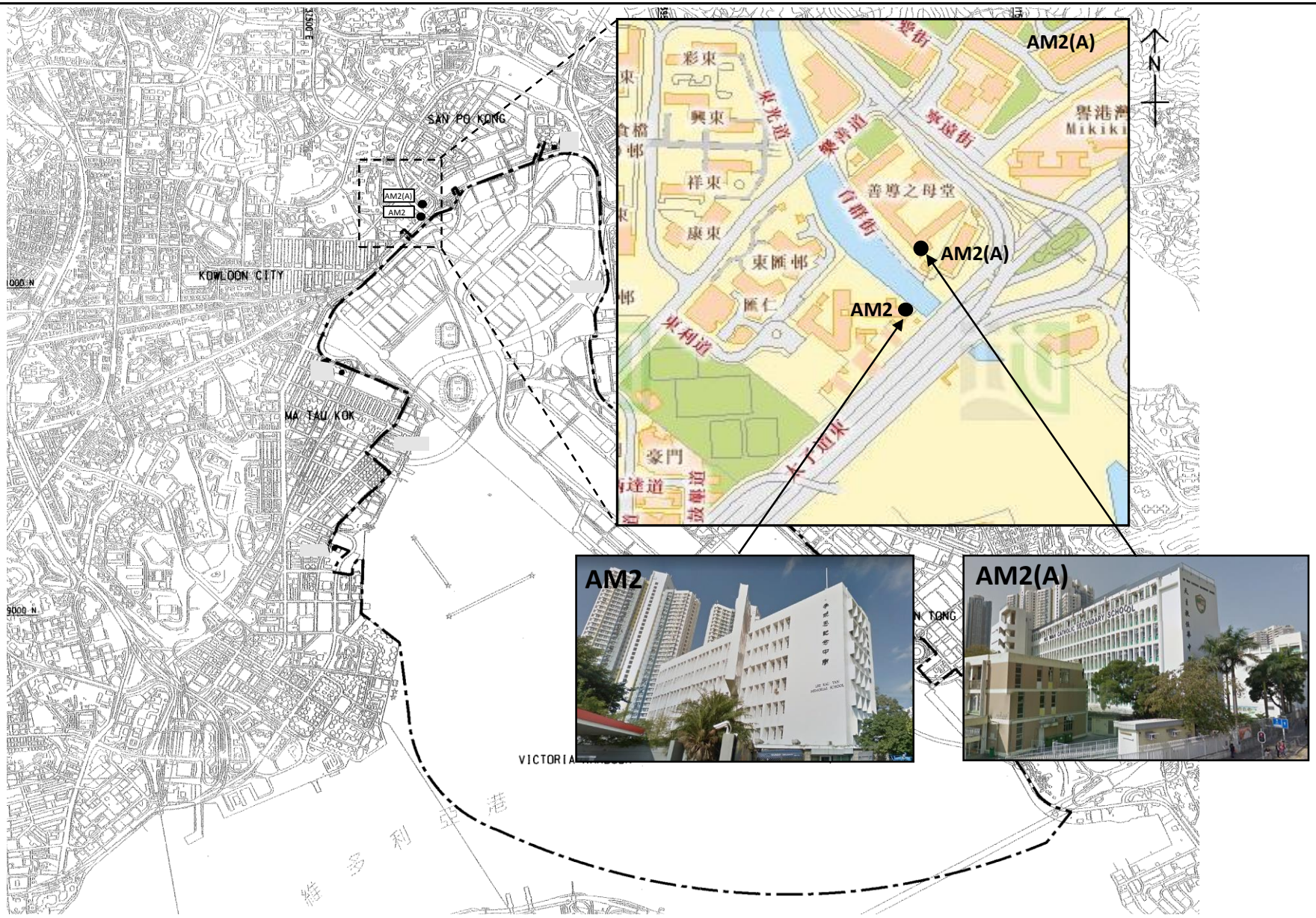


CINOTECH
Cinotech Consultants Limited

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

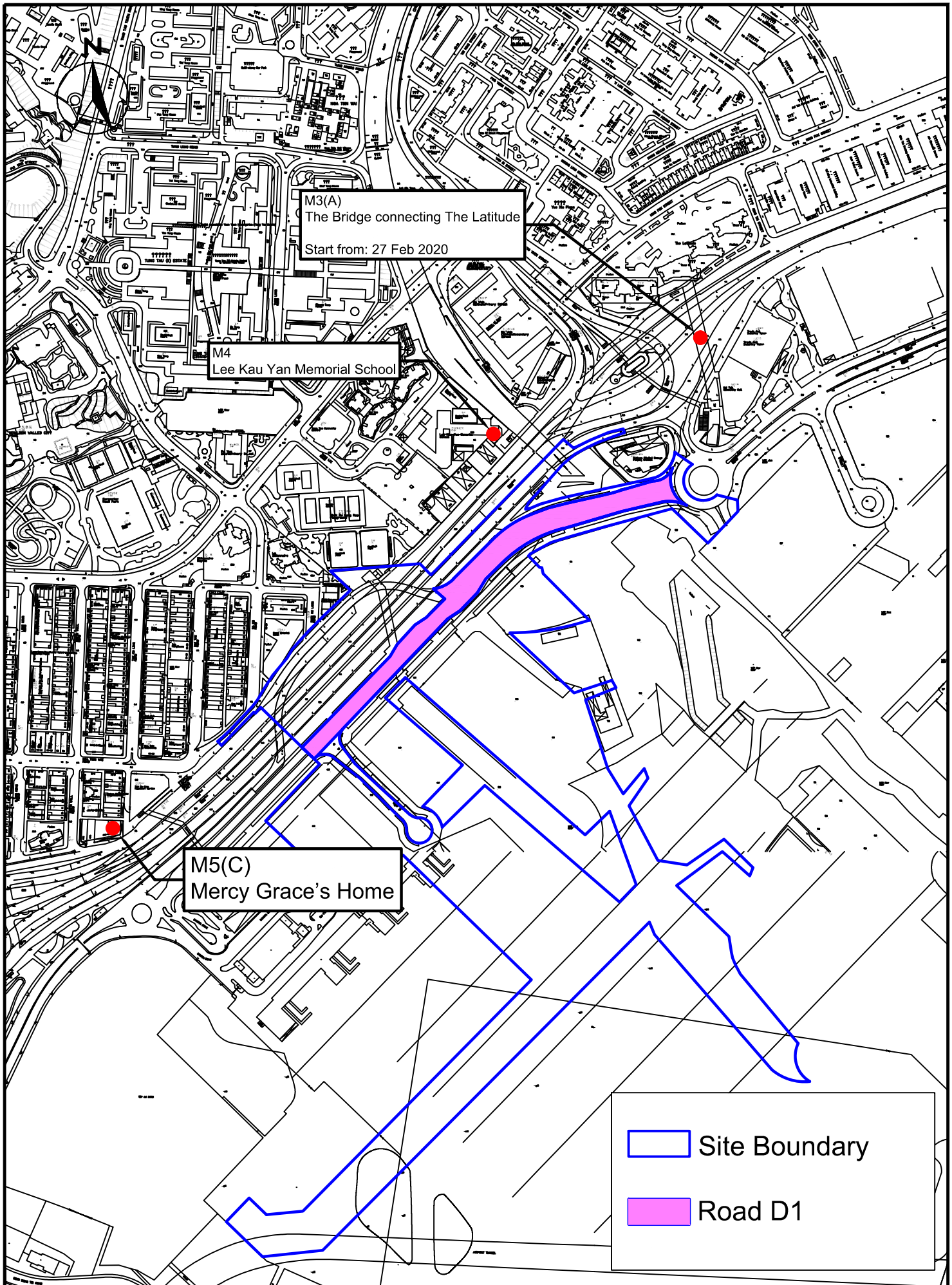
SITE LAYOUT PLAN

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



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

CINOTECH

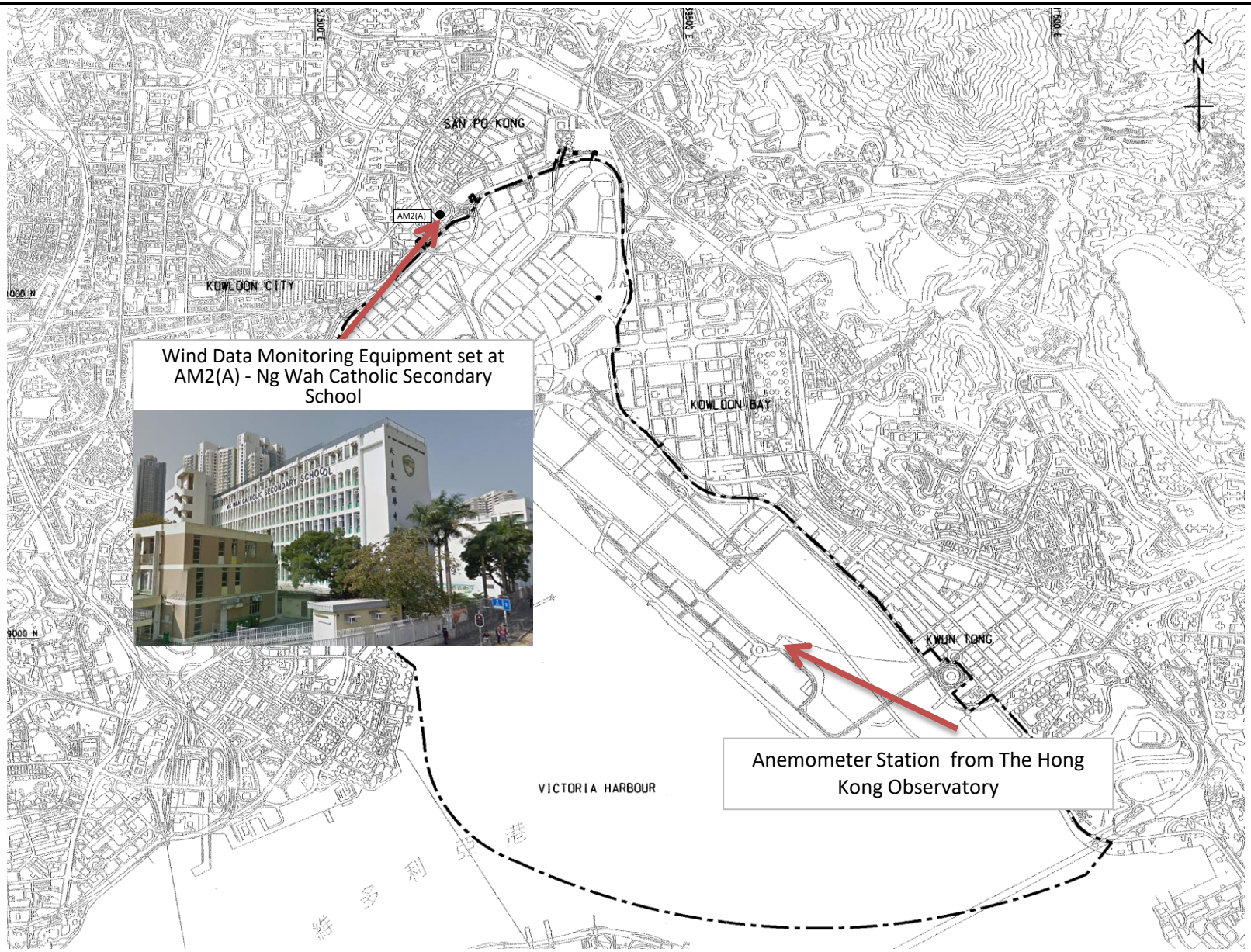


CINOTECH
Cinotech Consultants Limited

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 -



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 Location of Wind Data Monitoring Equipment	Scale: N.T.S Date: Aug-17	Project No.: MA16043 Figure: 4

CINOTECH

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, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AM2	346	500

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

Location	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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
CERTIFCATES (AIR)

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16043/13/0034

Project No. AM2(A) - Ng Wah Catholic Secondary School

Date: 4-Jan-23 Next Due Date: 6-Mar-23 Operator: SK

Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	290.4	Pressure, Pa (mmHg)	767.6

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05922	Intercept, bc	-0.02420
Last Calibration Date:	31-Jan-22	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	31-Jan-23	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

.

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	DW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	13.0	3.67	62.39	10.8	3.35
2	10.9	3.36	57.17	8.3	2.93
3	8.1	2.90	49.34	5.7	2.43
4	5.5	2.39	40.73	3.5	1.90
5	3.2	1.82	31.16	1.9	1.40

By Linear Regression of Y on X

Slope , mw = **0.0619** **Intercept, bw =** **-0.5750**

Correlation coefficient* = **0.9978**

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

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.19**

Remarks:

Conducted by: Wong Shing Kwai Signature: Date: 4-Jan-23

Checked by: Henry Leung Signature: Date: 4-Jan-23

CINOTECH CONSULTANTS LIMITED

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 29-Jan-23

Manufacturer: Sibata Scientific Technology LTD. — Validity of Calibration Record 31-Mar-23

Model No.: LD-5R

Serial No.: 972779

Equipment No.: SA-01-08 — Sensitivity 0.001 mg/m3

High Volume Sampler No.: A-01-03 — Before Sensitivity Adjustment 744 CPM

Tisch Calibration Orifice No.: 3864 — After Sensitivity Adjustment 744 CPM

Calibration of 1 hr TSP		
Calibration Point	**Laser Dust Monitor**	**HVS**
	Mass Concentration (µg/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	68.0	135.0
2	57.0	116.0
3	48.0	95.0
Average	**57.7**	**115.3**

By Linear Regression of Y on X

Slope , mw = **1.9900** **Intercept, bw =** **0.5748**

Correlation coefficient* = **0.9963**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	115.3
Particaulate Concentration by Dust Meter (µg/m^3)	57.7
Measureing time, (min)	60.0
Set Correlation Factor , SCF	
SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)]	**2.0**

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 Litimed)

Calibrated by: _____

Technical Officer (Wong Shing Kwai)

Approved by: _____

Project Manager (Henry Leung)

CINOTECH CONSULTANTS LIMITED

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 29-Jan-23

Manufacturer: Sibata Scientific Technology LTD. — Validity of Calibration Record 31-Mar-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/m3) **X-axis**	Mass concentration (µg/m^3) **Y-axis**
1	70.0	136.0
2	60.0	117.0
3	51.0	97.0
Average	**60.3**	**116.7**

By Linear Regression of Y on X

Slope , mw = **2.0498** **Intercept, bw =** **-7.0055**

Correlation coefficient* = **0.9990**

Set Correlation Factor	
Particaulate Concentration by High Volume Sampler (µg/m^3)	116.7
Particaulate Concentration by Dust Meter (µg/m^3)	60.3
Measureing time, (min)	60.0

Set Correlation Factor , SCF

SCF = [K=High Volume Sampler / Dust Meter, (µg/m3)] **1.9**

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 Litimed)

Calibrated by: _____

Technical Officer (Wong Shing Kwai)

Approved by: _____

Project Manager (Henry Leung)

TISCH Environmental

RECALIBRATION DUE DATE:
January 16, 2024

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 16, 2023	**Rootsmeter 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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (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=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

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

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

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

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

RECALIBRATION

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

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

Certificate of Calibration - Wind Monitoring Station

Description:	Ng Wah Catholic Seconday School - Weather Stations
Manufacturer:	Davis Instruments
Model No.:	Davis 6152, Vantage Pro2
Serial No.:	BC180522050
Equipment No.:	SA-03-03
Date of Calibration	7-Oct-2022
Next Due Date	7-Apr-2023

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
1.5	1.5	0.0
2.0	2.1	-0.1
3.5	3.5	0.0

2. Performance check of Wind Direction

Wind Direction (^{o})		Difference D (^{o})
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

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA16043/13/0035

Project No. AM2(A) - Ng Wah Catholic Secondary School

Date: 6-Mar-23 Next Due Date: 6-May-23 Operator: SK

Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	293	Pressure, Pa (mmHg)	766.9

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

.

Calibration of TSP Sampler					
Calibration Point	Orfice			HVS	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	DW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	12.8	3.62	61.73	10.7	3.31
2	10.7	3.31	56.49	8.2	2.90
3	8.0	2.87	48.93	5.6	2.40
4	5.3	2.33	39.93	3.4	1.87
5	3.0	1.75	30.19	1.9	1.40

By Linear Regression of Y on X

Slope , mw = **0.0606** **Intercept, bw =** **-0.4985**

Correlation coefficient* = **0.9963**

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

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.32**

Remarks:

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

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

APPENDIX B-2
COPIES OF CALIBRATION CERTIFCATES (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. : 00195 Issue Date : 07 Jun 2022
Application No. : HP00073

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-08-01

Manufacturer: : SVANTEK

Other information :

Model No.	SVAN 959
Serial No.	11275
Microphone No.	22452

Date Received : 27 May 2022

Test Period : 06 Jun 2022 to 06 Jun 2022

Test Requested : Performance checking for Sound Level Meter

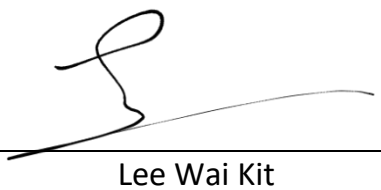
Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

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



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. : 00195 Issue Date : 07 Jun 2022
Application No. : HP00073

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	94.1	+0.1	± 1.5
114.0	114.1	+0.1	± 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. : 00171 Issue Date : 01 Apr 2022
Application No. : HP00046

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 : 25 Mar 2022

Test Period : 30 Mar 2022 to 30 Mar 2022

Test Requested : Performance checking for Sound Level Meter

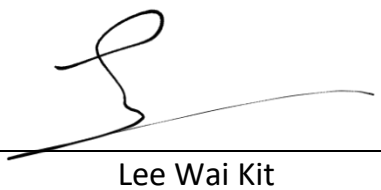
Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

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



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. : 00171 Issue Date : 01 Apr 2022
Application No. : HP00046

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	94.0	0.0	± 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. : 00288 Issue Date : 10 Nov 2022
Application No. : HP00176

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 -

APPENDIX C
WEATHER INFORMATION

March 2023

Date	Mean Pressure (hPa)	Air Temperature	Mean Relative Humidity (%)	Precipitation (mm)
		Mean (°C)		
1-Mar-23	1021.5	19.7	71	0
2-Mar-23	1023.8	19.8	70	0
3-Mar-23	1024.9	18.6	56	0
4-Mar-23	1024.4	19.6	65	0
5-Mar-23	1023.6	19.7	57	0
6-Mar-23	1022.4	20.0	50	0
7-Mar-23	1020.9	20.1	56	0
8-Mar-23	1019.7	21.6	77	0
9-Mar-23	1017.7	22.5	75	0
10-Mar-23	1017.6	22.4	68	0
11-Mar-23	1018.3	22.1	67	0
12-Mar-23	1018.9	22.6	71	0.1
13-Mar-23	1020.4	20.1	64	Trace
14-Mar-23	1016.8	19.7	73	0
15-Mar-23	1017.4	21.0	77	0
16-Mar-23	1018.4	22.0	72	Trace
17-Mar-23	1016.8	21.7	83	0.5
18-Mar-23	1015.5	22.3	80	0
19-Mar-23	1015.2	20.6	86	0.6
20-Mar-23	1012.0	21.8	88	0.3
21-Mar-23	1009.2	23.7	85	Trace
22-Mar-23	1008.0	24.7	83	Trace
23-Mar-23	1008.6	25.0	81	0
24-Mar-23	1011.4	25.6	80	0
25-Mar-23	1013.1	23.4	89	53.5
26-Mar-23	1014.0	20.8	91	5.9
27-Mar-23	1016.2	18.6	86	6.3
28-Mar-23	1017.6	18.7	84	Trace
29-Mar-23	1015.4	19.9	86	0.9
30-Mar-23	1012.9	20.8	89	0.3
31-Mar-23	1013.3	20.3	92	1.9

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
1-Mar-23	0:00	0.1	SSE
1-Mar-23	1:00	1.2	ENE
1-Mar-23	2:00	3.2	E
1-Mar-23	3:00	3.8	E
1-Mar-23	4:00	3.8	ENE
1-Mar-23	5:00	3.2	ENE
1-Mar-23	6:00	3.2	E
1-Mar-23	7:00	3.2	E
1-Mar-23	8:00	1.2	ENE
1-Mar-23	9:00	3.2	ENE
1-Mar-23	10:00	3.2	E
1-Mar-23	11:00	1.2	W
1-Mar-23	12:00	3.8	ENE
1-Mar-23	13:00	3.8	ESE
1-Mar-23	14:00	3.8	ENE
1-Mar-23	15:00	3.8	ENE
1-Mar-23	16:00	3.8	ENE
1-Mar-23	17:00	3.2	ENE
1-Mar-23	18:00	3.8	ENE
1-Mar-23	19:00	3.2	E
1-Mar-23	20:00	3.2	ENE
1-Mar-23	21:00	3.8	E
1-Mar-23	22:00	3.8	E
1-Mar-23	23:00	3.2	ENE
2-Mar-23	0:00	3.2	ESE
2-Mar-23	1:00	1.2	ENE
2-Mar-23	2:00	1.2	ENE
2-Mar-23	3:00	1.2	E
2-Mar-23	4:00	3.2	E
2-Mar-23	5:00	3.2	ENE
2-Mar-23	6:00	3.8	E
2-Mar-23	7:00	1.2	ENE
2-Mar-23	8:00	1.2	ESE
2-Mar-23	9:00	1.2	E
2-Mar-23	10:00	1.2	ENE
2-Mar-23	11:00	3.2	ENE
2-Mar-23	12:00	3.8	W
2-Mar-23	13:00	3.8	NE
2-Mar-23	14:00	3.8	E
2-Mar-23	15:00	3.8	ENE
2-Mar-23	16:00	3.8	ENE
2-Mar-23	17:00	3.2	ENE
2-Mar-23	18:00	3.2	ENE
2-Mar-23	19:00	0.1	ENE
2-Mar-23	20:00	0.1	---
2-Mar-23	21:00	0.1	ESE
2-Mar-23	22:00	0.1	SW
2-Mar-23	23:00	0.1	S

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
3-Mar-23	0:00	0.1	SE
3-Mar-23	1:00	0.1	S
3-Mar-23	2:00	0.1	SSE
3-Mar-23	3:00	0.1	SE
3-Mar-23	4:00	0.1	---
3-Mar-23	5:00	0.1	---
3-Mar-23	6:00	0.1	---
3-Mar-23	7:00	0.1	---
3-Mar-23	8:00	0.1	---
3-Mar-23	9:00	3.2	WNW
3-Mar-23	10:00	0.1	ENE
3-Mar-23	11:00	1.2	NNW
3-Mar-23	12:00	0.1	ENE
3-Mar-23	13:00	0.1	NNW
3-Mar-23	14:00	0.1	N
3-Mar-23	15:00	0.1	N
3-Mar-23	16:00	0.1	N
3-Mar-23	17:00	1.2	NNE
3-Mar-23	18:00	0.1	NNE
3-Mar-23	19:00	0.1	NNE
3-Mar-23	20:00	0.1	NNE
3-Mar-23	21:00	0.1	NNE
3-Mar-23	22:00	0.1	NNE
3-Mar-23	23:00	0.1	NNE
4-Mar-23	0:00	0.1	NNE
4-Mar-23	1:00	0.1	NNE
4-Mar-23	2:00	0.1	NNE
4-Mar-23	3:00	0.1	NE
4-Mar-23	4:00	0.1	NE
4-Mar-23	5:00	0.1	ENE
4-Mar-23	6:00	0.1	NE
4-Mar-23	7:00	0.1	---
4-Mar-23	8:00	0.1	NE
4-Mar-23	9:00	0.1	ENE
4-Mar-23	10:00	1.2	E
4-Mar-23	11:00	3.2	ENE
4-Mar-23	12:00	3.2	SSE
4-Mar-23	13:00	3.2	ENE
4-Mar-23	14:00	3.8	E
4-Mar-23	15:00	3.8	W
4-Mar-23	16:00	3.8	WSW
4-Mar-23	17:00	3.2	ENE
4-Mar-23	18:00	3.8	W
4-Mar-23	19:00	3.2	E
4-Mar-23	20:00	3.8	WSW
4-Mar-23	21:00	3.2	ENE
4-Mar-23	22:00	3.2	ENE
4-Mar-23	23:00	3.8	E

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
5-Mar-23	0:00	3.8	E
5-Mar-23	1:00	6.4	E
5-Mar-23	2:00	3.2	SSW
5-Mar-23	3:00	3.2	ENE
5-Mar-23	4:00	6.4	ENE
5-Mar-23	5:00	3.8	E
5-Mar-23	6:00	3.2	ENE
5-Mar-23	7:00	3.2	ESE
5-Mar-23	8:00	3.2	E
5-Mar-23	9:00	1.2	SW
5-Mar-23	10:00	1.2	SSE
5-Mar-23	11:00	3.2	SE
5-Mar-23	12:00	1.2	SE
5-Mar-23	13:00	1.2	SSE
5-Mar-23	14:00	3.2	SE
5-Mar-23	15:00	1.2	ESE
5-Mar-23	16:00	1.2	SE
5-Mar-23	17:00	1.2	SE
5-Mar-23	18:00	0.1	ESE
5-Mar-23	19:00	0.1	ENE
5-Mar-23	20:00	0.1	E
5-Mar-23	21:00	0.1	ENE
5-Mar-23	22:00	0.1	ENE
5-Mar-23	23:00	0.1	---
6-Mar-23	0:00	0.1	E
6-Mar-23	1:00	0.1	ENE
6-Mar-23	2:00	0.1	ENE
6-Mar-23	3:00	1.2	ESE
6-Mar-23	4:00	1.2	ESE
6-Mar-23	5:00	3.2	E
6-Mar-23	6:00	3.2	E
6-Mar-23	7:00	3.2	ENE
6-Mar-23	8:00	3.2	E
6-Mar-23	9:00	3.2	E
6-Mar-23	10:00	3.8	WNW
6-Mar-23	11:00	3.8	E
6-Mar-23	12:00	3.8	E
6-Mar-23	13:00	1.2	E
6-Mar-23	14:00	3.2	ENE
6-Mar-23	15:00	1.2	NW
6-Mar-23	16:00	1.2	E
6-Mar-23	17:00	1.2	E
6-Mar-23	18:00	0.1	ENE
6-Mar-23	19:00	0.1	ENE
6-Mar-23	20:00	0.1	ENE
6-Mar-23	21:00	0.1	ENE
6-Mar-23	22:00	0.1	ENE
6-Mar-23	23:00	0.1	E

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
7-Mar-23	0:00	1.2	E
7-Mar-23	1:00	1.2	E
7-Mar-23	2:00	3.2	ENE
7-Mar-23	3:00	3.8	ENE
7-Mar-23	4:00	3.2	ENE
7-Mar-23	5:00	1.2	E
7-Mar-23	6:00	3.2	E
7-Mar-23	7:00	1.2	NW
7-Mar-23	8:00	1.2	E
7-Mar-23	9:00	3.2	E
7-Mar-23	10:00	3.8	NNW
7-Mar-23	11:00	3.2	E
7-Mar-23	12:00	3.8	E
7-Mar-23	13:00	3.2	ENE
7-Mar-23	14:00	3.2	ENE
7-Mar-23	15:00	1.2	E
7-Mar-23	16:00	1.2	W
7-Mar-23	17:00	0.1	E
7-Mar-23	18:00	1.2	ENE
7-Mar-23	19:00	0.1	ENE
7-Mar-23	20:00	1.2	ENE
7-Mar-23	21:00	4.4	E
7-Mar-23	22:00	3.8	ENE
7-Mar-23	23:00	3.2	SW
8-Mar-23	0:00	3.2	ENE
8-Mar-23	1:00	1.2	E
8-Mar-23	2:00	3.2	ENE
8-Mar-23	3:00	3.2	E
8-Mar-23	4:00	1.2	E
8-Mar-23	5:00	1.2	ESE
8-Mar-23	6:00	1.2	E
8-Mar-23	7:00	1.2	ENE
8-Mar-23	8:00	3.2	S
8-Mar-23	9:00	4.4	E
8-Mar-23	10:00	3.8	W
8-Mar-23	11:00	6.4	W
8-Mar-23	12:00	6.1	W
8-Mar-23	13:00	6.1	W
8-Mar-23	14:00	4.4	E
8-Mar-23	15:00	4.4	W
8-Mar-23	16:00	4.4	E
8-Mar-23	17:00	3.8	ESE
8-Mar-23	18:00	3.8	ENE
8-Mar-23	19:00	6.4	ENE
8-Mar-23	20:00	6.4	E
8-Mar-23	21:00	8.0.15	E
8-Mar-23	22:00	4.4	WNW
8-Mar-23	23:00	3.8	WSW

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
9-Mar-23	0:00	3.8	WSW
9-Mar-23	1:00	6.4	W
9-Mar-23	2:00	3.2	E
9-Mar-23	3:00	3.8	WNW
9-Mar-23	4:00	1.2	E
9-Mar-23	5:00	3.2	ENE
9-Mar-23	6:00	3.2	E
9-Mar-23	7:00	1.2	ESE
9-Mar-23	8:00	1.2	W
9-Mar-23	9:00	1.2	WSW
9-Mar-23	10:00	1.2	WSW
9-Mar-23	11:00	1.2	ENE
9-Mar-23	12:00	0.1	ENE
9-Mar-23	13:00	0.1	ENE
9-Mar-23	14:00	0.1	ENE
9-Mar-23	15:00	0.1	ENE
9-Mar-23	16:00	0.1	ENE
9-Mar-23	17:00	1.2	ENE
9-Mar-23	18:00	1.2	ENE
9-Mar-23	19:00	3.2	WNW
9-Mar-23	20:00	1.2	NW
9-Mar-23	21:00	0.1	NW
9-Mar-23	22:00	0.1	NW
9-Mar-23	23:00	0.1	WNW
10-Mar-23	0:00	0.1	W
10-Mar-23	1:00	1.2	W
10-Mar-23	2:00	0.1	W
10-Mar-23	3:00	1.2	W
10-Mar-23	4:00	0.1	W
10-Mar-23	5:00	0.1	W
10-Mar-23	6:00	0.1	W
10-Mar-23	7:00	0.1	W
10-Mar-23	8:00	0.1	WSW
10-Mar-23	9:00	0.1	W
10-Mar-23	10:00	0.1	WNW
10-Mar-23	11:00	0.1	NNE
10-Mar-23	12:00	0.1	NNE
10-Mar-23	13:00	1.2	N
10-Mar-23	14:00	0.1	WNW
10-Mar-23	15:00	0.1	WNW
10-Mar-23	16:00	1.2	WNW
10-Mar-23	17:00	0.1	W
10-Mar-23	18:00	1.2	W
10-Mar-23	19:00	0.1	WNW
10-Mar-23	20:00	0.1	WNW
10-Mar-23	21:00	1.2	NW
10-Mar-23	22:00	0.1	NW
10-Mar-23	23:00	0.1	NW

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
11-Mar-23	0:00	0.1	NW
11-Mar-23	1:00	0.1	---
11-Mar-23	2:00	0.1	---
11-Mar-23	3:00	0.1	NNE
11-Mar-23	4:00	1.2	NE
11-Mar-23	5:00	0.1	NE
11-Mar-23	6:00	0.1	NE
11-Mar-23	7:00	0.1	NE
11-Mar-23	8:00	0.1	NNE
11-Mar-23	9:00	0.1	NNE
11-Mar-23	10:00	0.1	---
11-Mar-23	11:00	0.1	---
11-Mar-23	12:00	0.1	NNE
11-Mar-23	13:00	0.1	NNE
11-Mar-23	14:00	0.1	NNE
11-Mar-23	15:00	0.1	ENE
11-Mar-23	16:00	1.2	ENE
11-Mar-23	17:00	1.2	ENE
11-Mar-23	18:00	0.1	SW
11-Mar-23	19:00	0.1	NE
11-Mar-23	20:00	0.1	NE
11-Mar-23	21:00	0.1	NE
11-Mar-23	22:00	0.1	NE
11-Mar-23	23:00	0.1	NE
12-Mar-23	0:00	0.1	ENE
12-Mar-23	1:00	0.1	ENE
12-Mar-23	2:00	0.1	E
12-Mar-23	3:00	0.1	ENE
12-Mar-23	4:00	0.1	E
12-Mar-23	5:00	0.1	E
12-Mar-23	6:00	0.1	E
12-Mar-23	7:00	0.1	E
12-Mar-23	8:00	0.1	ENE
12-Mar-23	9:00	0.1	ENE
12-Mar-23	10:00	0.1	ENE
12-Mar-23	11:00	1.2	E
12-Mar-23	12:00	1.2	ENE
12-Mar-23	13:00	1.2	ENE
12-Mar-23	14:00	1.2	ENE
12-Mar-23	15:00	1.2	ENE
12-Mar-23	16:00	1.2	ENE
12-Mar-23	17:00	0.1	ENE
12-Mar-23	18:00	1.2	ENE
12-Mar-23	19:00	0.1	ENE
12-Mar-23	20:00	0.1	E
12-Mar-23	21:00	0.1	E
12-Mar-23	22:00	0.1	E
12-Mar-23	23:00	0.1	E

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
13-Mar-23	0:00	0.1	ENE
13-Mar-23	1:00	0.1	E
13-Mar-23	2:00	0.1	ENE
13-Mar-23	3:00	0.1	E
13-Mar-23	4:00	0.1	ENE
13-Mar-23	5:00	1.2	E
13-Mar-23	6:00	0.1	ENE
13-Mar-23	7:00	0.1	E
13-Mar-23	8:00	0.1	ENE
13-Mar-23	9:00	0.1	ENE
13-Mar-23	10:00	0.1	E
13-Mar-23	11:00	1.2	E
13-Mar-23	12:00	1.2	ENE
13-Mar-23	13:00	1.2	ENE
13-Mar-23	14:00	1.2	ENE
13-Mar-23	15:00	0.1	E
13-Mar-23	16:00	0.1	WNW
13-Mar-23	17:00	1.2	E
13-Mar-23	18:00	1.2	ENE
13-Mar-23	19:00	1.2	ENE
13-Mar-23	20:00	1.2	ENE
13-Mar-23	21:00	0.1	E
13-Mar-23	22:00	3.2	E
13-Mar-23	23:00	3.2	E
14-Mar-23	0:00	1.2	E
14-Mar-23	1:00	1.2	ENE
14-Mar-23	2:00	0.1	E
14-Mar-23	3:00	1.2	E
14-Mar-23	4:00	1.2	E
14-Mar-23	5:00	1.2	E
14-Mar-23	6:00	1.2	E
14-Mar-23	7:00	1.2	E
14-Mar-23	8:00	1.2	E
14-Mar-23	9:00	1.2	E
14-Mar-23	10:00	1.2	E
14-Mar-23	11:00	1.2	E
14-Mar-23	12:00	0.1	E
14-Mar-23	13:00	0.1	ENE
14-Mar-23	14:00	0.1	E
14-Mar-23	15:00	0.1	E
14-Mar-23	16:00	0.1	ENE
14-Mar-23	17:00	0.1	NE
14-Mar-23	18:00	0.1	ENE
14-Mar-23	19:00	0.1	ENE
14-Mar-23	20:00	0.1	NNE
14-Mar-23	21:00	0.1	NE
14-Mar-23	22:00	0.1	NNE
14-Mar-23	23:00	0.1	NNW

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
15-Mar-23	0:00	0.1	NNW
15-Mar-23	1:00	0.1	NNW
15-Mar-23	2:00	0.1	NNW
15-Mar-23	3:00	0.1	N
15-Mar-23	4:00	0.1	NNE
15-Mar-23	5:00	0.1	NNE
15-Mar-23	6:00	0.1	NNW
15-Mar-23	7:00	1.2	NNW
15-Mar-23	8:00	0.1	NW
15-Mar-23	9:00	0.1	NNW
15-Mar-23	10:00	0.1	---
15-Mar-23	11:00	0.1	---
15-Mar-23	12:00	0.1	---
15-Mar-23	13:00	0.1	---
15-Mar-23	14:00	0.1	SSW
15-Mar-23	15:00	0.1	---
15-Mar-23	16:00	0.1	---
15-Mar-23	17:00	0.1	NW
15-Mar-23	18:00	0.1	NNW
15-Mar-23	19:00	0.1	NW
15-Mar-23	20:00	0.1	NNW
15-Mar-23	21:00	0.1	E
15-Mar-23	22:00	0.1	ENE
15-Mar-23	23:00	0.1	ENE
16-Mar-23	0:00	0.1	WNW
16-Mar-23	1:00	0.1	ENE
16-Mar-23	2:00	0.1	ENE
16-Mar-23	3:00	0.1	ENE
16-Mar-23	4:00	0.1	---
16-Mar-23	5:00	0.1	---
16-Mar-23	6:00	0.1	WSW
16-Mar-23	7:00	1.2	E
16-Mar-23	8:00	0.1	ENE
16-Mar-23	9:00	0.1	E
16-Mar-23	10:00	1.2	E
16-Mar-23	11:00	3.2	ENE
16-Mar-23	12:00	3.2	E
16-Mar-23	13:00	3.2	ENE
16-Mar-23	14:00	3.2	E
16-Mar-23	15:00	3.2	E
16-Mar-23	16:00	3.2	W
16-Mar-23	17:00	3.8	E
16-Mar-23	18:00	3.2	WSW
16-Mar-23	19:00	3.8	E
16-Mar-23	20:00	3.2	E
16-Mar-23	21:00	3.2	ENE
16-Mar-23	22:00	1.2	ENE
16-Mar-23	23:00	3.2	E

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
17-Mar-23	0:00	3.8	E
17-Mar-23	1:00	3.2	E
17-Mar-23	2:00	3.2	E
17-Mar-23	3:00	3.2	ENE
17-Mar-23	4:00	1.2	ENE
17-Mar-23	5:00	3.2	E
17-Mar-23	6:00	1.2	E
17-Mar-23	7:00	0.1	E
17-Mar-23	8:00	1.2	ENE
17-Mar-23	9:00	3.2	E
17-Mar-23	10:00	3.8	ENE
17-Mar-23	11:00	3.2	E
17-Mar-23	12:00	3.2	ENE
17-Mar-23	13:00	3.2	E
17-Mar-23	14:00	3.2	ENE
17-Mar-23	15:00	1.2	E
17-Mar-23	16:00	1.2	ENE
17-Mar-23	17:00	0.1	ENE
17-Mar-23	18:00	1.2	ENE
17-Mar-23	19:00	0.1	ENE
17-Mar-23	20:00	0.1	ESE
17-Mar-23	21:00	0.1	---
17-Mar-23	22:00	0.1	ESE
17-Mar-23	23:00	0.1	ENE
18-Mar-23	0:00	0.1	E
18-Mar-23	1:00	1.2	E
18-Mar-23	2:00	0.1	E
18-Mar-23	3:00	0.1	E
18-Mar-23	4:00	1.2	ENE
18-Mar-23	5:00	0.1	ENE
18-Mar-23	6:00	1.2	E
18-Mar-23	7:00	1.2	E
18-Mar-23	8:00	0.1	ENE
18-Mar-23	9:00	1.2	E
18-Mar-23	10:00	0.1	ENE
18-Mar-23	11:00	1.2	ENE
18-Mar-23	12:00	1.2	NE
18-Mar-23	13:00	0.1	ENE
18-Mar-23	14:00	0.1	ENE
18-Mar-23	15:00	0.1	ENE
18-Mar-23	16:00	0.1	NE
18-Mar-23	17:00	0.1	ENE
18-Mar-23	18:00	0.1	WNW
18-Mar-23	19:00	0.1	ENE
18-Mar-23	20:00	0.1	ENE
18-Mar-23	21:00	0.1	E
18-Mar-23	22:00	0.1	E
18-Mar-23	23:00	0.1	ENE

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
19-Mar-23	0:00	0.1	E
19-Mar-23	1:00	0.1	E
19-Mar-23	2:00	0.1	WNW
19-Mar-23	3:00	0.1	ENE
19-Mar-23	4:00	0.1	ENE
19-Mar-23	5:00	0.1	E
19-Mar-23	6:00	0.1	E
19-Mar-23	7:00	0.1	ENE
19-Mar-23	8:00	0.1	E
19-Mar-23	9:00	0.1	E
19-Mar-23	10:00	0.1	ENE
19-Mar-23	11:00	0.1	E
19-Mar-23	12:00	0.1	E
19-Mar-23	13:00	0.1	E
19-Mar-23	14:00	1.2	ENE
19-Mar-23	15:00	1.2	WSW
19-Mar-23	16:00	0.1	SW
19-Mar-23	17:00	0.1	S
19-Mar-23	18:00	0.1	NE
19-Mar-23	19:00	0.1	WNW
19-Mar-23	20:00	0.1	ENE
19-Mar-23	21:00	0.1	ENE
19-Mar-23	22:00	0.1	E
19-Mar-23	23:00	0.1	E
20-Mar-23	0:00	0.1	ENE
20-Mar-23	1:00	0.1	E
20-Mar-23	2:00	0.1	E
20-Mar-23	3:00	1.2	ENE
20-Mar-23	4:00	0.1	E
20-Mar-23	5:00	0.1	E
20-Mar-23	6:00	0.1	E
20-Mar-23	7:00	0.1	ENE
20-Mar-23	8:00	0.1	ENE
20-Mar-23	9:00	0.1	ESE
20-Mar-23	10:00	0.1	ESE
20-Mar-23	11:00	0.1	SW
20-Mar-23	12:00	0.1	ENE
20-Mar-23	13:00	0.1	ESE
20-Mar-23	14:00	0.1	SSE
20-Mar-23	15:00	0.1	NE
20-Mar-23	16:00	0.1	ENE
20-Mar-23	17:00	0.1	ENE
20-Mar-23	18:00	0.1	WNW
20-Mar-23	19:00	0.1	ENE
20-Mar-23	20:00	0.1	ENE
20-Mar-23	21:00	0.1	E
20-Mar-23	22:00	0.1	E
20-Mar-23	23:00	0.1	ENE

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
21-Mar-23	0:00	0.1	E
21-Mar-23	1:00	0.1	E
21-Mar-23	2:00	0.1	ENE
21-Mar-23	3:00	0.1	E
21-Mar-23	4:00	0.1	E
21-Mar-23	5:00	0.1	E
21-Mar-23	6:00	0.1	ENE
21-Mar-23	7:00	0.1	---
21-Mar-23	8:00	0.1	---
21-Mar-23	9:00	0.1	ESE
21-Mar-23	10:00	0.1	ESE
21-Mar-23	11:00	0.1	ESE
21-Mar-23	12:00	1.2	SSE
21-Mar-23	13:00	1.2	S
21-Mar-23	14:00	3.2	WSW
21-Mar-23	15:00	3.2	WSW
21-Mar-23	16:00	3.8	WSW
21-Mar-23	17:00	1.2	SSE
21-Mar-23	18:00	1.2	SSE
21-Mar-23	19:00	0.1	SSE
21-Mar-23	20:00	0.1	S
21-Mar-23	21:00	1.2	WSW
21-Mar-23	22:00	3.2	SW
21-Mar-23	23:00	3.2	SSE
22-Mar-23	0:00	3.8	SW
22-Mar-23	1:00	3.8	SW
22-Mar-23	2:00	3.8	WSW
22-Mar-23	3:00	3.8	SW
22-Mar-23	4:00	3.2	SW
22-Mar-23	5:00	3.2	SW
22-Mar-23	6:00	0.1	S
22-Mar-23	7:00	0.1	SSE
22-Mar-23	8:00	0.1	SE
22-Mar-23	9:00	0.1	SE
22-Mar-23	10:00	0.1	---
22-Mar-23	11:00	0.1	SE
22-Mar-23	12:00	0.1	SE
22-Mar-23	13:00	0.1	SE
22-Mar-23	14:00	0.1	E
22-Mar-23	15:00	0.1	SE
22-Mar-23	16:00	1.2	ESE
22-Mar-23	17:00	0.1	ESE
22-Mar-23	18:00	0.1	SE
22-Mar-23	19:00	0.1	SE
22-Mar-23	20:00	0.1	SE
22-Mar-23	21:00	0.1	SE
22-Mar-23	22:00	0.1	ESE
22-Mar-23	23:00	0.1	ESE

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
23-Mar-23	0:00	0.1	ESE
23-Mar-23	1:00	1.2	E
23-Mar-23	2:00	1.2	E
23-Mar-23	3:00	1.2	NE
23-Mar-23	4:00	3.2	E
23-Mar-23	5:00	3.2	SE
23-Mar-23	6:00	3.2	E
23-Mar-23	7:00	3.2	E
23-Mar-23	8:00	3.2	E
23-Mar-23	9:00	3.8	E
23-Mar-23	10:00	3.8	ENE
23-Mar-23	11:00	4.4	W
23-Mar-23	12:00	4.4	ENE
23-Mar-23	13:00	1.2	ENE
23-Mar-23	14:00	3.2	ENE
23-Mar-23	15:00	3.2	W
23-Mar-23	16:00	3.2	WSW
23-Mar-23	17:00	1.2	ENE
23-Mar-23	18:00	0.1	E
23-Mar-23	19:00	0.1	NNE
23-Mar-23	20:00	0.1	ENE
23-Mar-23	21:00	0.1	ENE
23-Mar-23	22:00	0.1	E
23-Mar-23	23:00	1.2	ENE
24-Mar-23	0:00	1.2	ENE
24-Mar-23	1:00	1.2	ENE
24-Mar-23	2:00	0.1	E
24-Mar-23	3:00	0.1	ENE
24-Mar-23	4:00	1.2	ENE
24-Mar-23	5:00	0.1	E
24-Mar-23	6:00	0.1	ENE
24-Mar-23	7:00	0.1	E
24-Mar-23	8:00	0.1	E
24-Mar-23	9:00	1.2	E
24-Mar-23	10:00	3.2	SW
24-Mar-23	11:00	3.2	ENE
24-Mar-23	12:00	3.8	SW
24-Mar-23	13:00	3.8	SW
24-Mar-23	14:00	3.8	W
24-Mar-23	15:00	3.2	ENE
24-Mar-23	16:00	1.2	ENE
24-Mar-23	17:00	3.8	W
24-Mar-23	18:00	3.8	E
24-Mar-23	19:00	3.8	W
24-Mar-23	20:00	3.2	ENE
24-Mar-23	21:00	3.2	ENE
24-Mar-23	22:00	3.2	E
24-Mar-23	23:00	3.2	E

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
25-Mar-23	0:00	1.2	E
25-Mar-23	1:00	1.2	ENE
25-Mar-23	2:00	1.2	WSW
25-Mar-23	3:00	3.2	E
25-Mar-23	4:00	0.1	E
25-Mar-23	5:00	0.1	NE
25-Mar-23	6:00	0.1	ENE
25-Mar-23	7:00	0.1	ENE
25-Mar-23	8:00	0.1	NE
25-Mar-23	9:00	0.1	NE
25-Mar-23	10:00	0.1	NE
25-Mar-23	11:00	0.1	N
25-Mar-23	12:00	0.1	WNW
25-Mar-23	13:00	0.1	ENE
25-Mar-23	14:00	0.1	ENE
25-Mar-23	15:00	0.1	E
25-Mar-23	16:00	0.1	E
25-Mar-23	17:00	0.1	ENE
25-Mar-23	18:00	0.1	E
25-Mar-23	19:00	0.1	E
25-Mar-23	20:00	0.1	ENE
25-Mar-23	21:00	0.1	E
25-Mar-23	22:00	0.1	E
25-Mar-23	23:00	0.1	E
26-Mar-23	0:00	0.1	ENE
26-Mar-23	1:00	0.1	E
26-Mar-23	2:00	0.1	---
26-Mar-23	3:00	0.1	---
26-Mar-23	4:00	0.1	---
26-Mar-23	5:00	0.1	---
26-Mar-23	6:00	0.1	---
26-Mar-23	7:00	0.1	ENE
26-Mar-23	8:00	0.1	ENE
26-Mar-23	9:00	0.1	NE
26-Mar-23	10:00	0.1	NE
26-Mar-23	11:00	1.2	ENE
26-Mar-23	12:00	1.2	ENE
26-Mar-23	13:00	1.2	WSW
26-Mar-23	14:00	1.2	E
26-Mar-23	15:00	1.2	ENE
26-Mar-23	16:00	1.2	W
26-Mar-23	17:00	1.2	E
26-Mar-23	18:00	1.2	ENE
26-Mar-23	19:00	0.1	ENE
26-Mar-23	20:00	0.1	WNW
26-Mar-23	21:00	0.1	E
26-Mar-23	22:00	0.1	ENE
26-Mar-23	23:00	0.1	E

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
27-Mar-23	0:00	0.1	ENE
27-Mar-23	1:00	0.1	E
27-Mar-23	2:00	0.1	ENE
27-Mar-23	3:00	1.2	ENE
27-Mar-23	4:00	1.2	ENE
27-Mar-23	5:00	0.1	ENE
27-Mar-23	6:00	0.1	ENE
27-Mar-23	7:00	0.1	E
27-Mar-23	8:00	0.1	ENE
27-Mar-23	9:00	0.1	E
27-Mar-23	10:00	1.2	ENE
27-Mar-23	11:00	0.1	E
27-Mar-23	12:00	0.1	ENE
27-Mar-23	13:00	0.1	E
27-Mar-23	14:00	0.1	E
27-Mar-23	15:00	0.1	ENE
27-Mar-23	16:00	0.1	ENE
27-Mar-23	17:00	0.1	ENE
27-Mar-23	18:00	0.1	ENE
27-Mar-23	19:00	0.1	NNE
27-Mar-23	20:00	0.1	NE
27-Mar-23	21:00	0.1	ENE
27-Mar-23	22:00	0.1	E
27-Mar-23	23:00	0.1	E
28-Mar-23	0:00	0.1	ENE
28-Mar-23	1:00	0.1	ENE
28-Mar-23	2:00	0.1	ENE
28-Mar-23	3:00	0.1	---
28-Mar-23	4:00	0.1	---
28-Mar-23	5:00	0.1	---
28-Mar-23	6:00	0.1	E
28-Mar-23	7:00	0.1	E
28-Mar-23	8:00	0.1	---
28-Mar-23	9:00	0.1	E
28-Mar-23	10:00	0.1	ENE
28-Mar-23	11:00	0.1	NE
28-Mar-23	12:00	0.1	SSE
28-Mar-23	13:00	0.1	SE
28-Mar-23	14:00	0.1	SW
28-Mar-23	15:00	0.1	SSW
28-Mar-23	16:00	0.1	ESE
28-Mar-23	17:00	0.1	S
28-Mar-23	18:00	0.1	S
28-Mar-23	19:00	0.1	---
28-Mar-23	20:00	0.1	---
28-Mar-23	21:00	0.1	SW
28-Mar-23	22:00	0.1	SW
28-Mar-23	23:00	0.1	SW

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
29-Mar-23	0:00	0.1	WSW
29-Mar-23	1:00	0.1	WSW
29-Mar-23	2:00	0.1	WSW
29-Mar-23	3:00	0.1	WSW
29-Mar-23	4:00	0.1	WSW
29-Mar-23	5:00	0.1	WSW
29-Mar-23	6:00	0.1	WSW
29-Mar-23	7:00	0.1	WSW
29-Mar-23	8:00	0.1	WSW
29-Mar-23	9:00	0.1	WSW
29-Mar-23	10:00	0.1	WSW
29-Mar-23	11:00	0.1	SW
29-Mar-23	12:00	1.2	SW
29-Mar-23	13:00	1.2	SW
29-Mar-23	14:00	1.2	WSW
29-Mar-23	15:00	3.2	WSW
29-Mar-23	16:00	0.1	SSW
29-Mar-23	17:00	3.2	WSW
29-Mar-23	18:00	3.2	SW
29-Mar-23	19:00	1.2	S
29-Mar-23	20:00	3.8	SW
29-Mar-23	21:00	3.2	WSW
29-Mar-23	22:00	0.1	WSW
29-Mar-23	23:00	1.2	W
30-Mar-23	0:00	0.1	WNW
30-Mar-23	1:00	0.1	WNW
30-Mar-23	2:00	0.1	WNW
30-Mar-23	3:00	0.1	---
30-Mar-23	4:00	0.1	WNW
30-Mar-23	5:00	0.1	WNW
30-Mar-23	6:00	0.1	WNW
30-Mar-23	7:00	0.1	WNW
30-Mar-23	8:00	0.1	WNW
30-Mar-23	9:00	1.2	ENE
30-Mar-23	10:00	3.2	ENE
30-Mar-23	11:00	3.2	E
30-Mar-23	12:00	3.8	E
30-Mar-23	13:00	3.8	ENE
30-Mar-23	14:00	3.2	E
30-Mar-23	15:00	1.2	E
30-Mar-23	16:00	3.2	ENE
30-Mar-23	17:00	1.2	E
30-Mar-23	18:00	1.2	E
30-Mar-23	19:00	1.2	E
30-Mar-23	20:00	1.2	ENE
30-Mar-23	21:00	1.2	E
30-Mar-23	22:00	1.2	ENE
30-Mar-23	23:00	3.2	ENE

March 2023			
Table II: Wind Speed and Directions			
Date	**Time**	**Wind Speed m/s**	**Direction**
31-Mar-23	0:00	1.2	ENE
31-Mar-23	1:00	1.2	ENE
31-Mar-23	2:00	1.2	E
31-Mar-23	3:00	1.2	ENE
31-Mar-23	4:00	3.2	ENE
31-Mar-23	5:00	3.8	SW
31-Mar-23	6:00	3.8	E
31-Mar-23	7:00	3.8	WSW
31-Mar-23	8:00	3.8	E
31-Mar-23	9:00	3.8	ENE
31-Mar-23	10:00	3.8	ENE
31-Mar-23	11:00	5.1	E
31-Mar-23	12:00	4.4	E
31-Mar-23	13:00	3.8	ENE
31-Mar-23	14:00	3.2	ENE
31-Mar-23	15:00	4.4	ESE
31-Mar-23	16:00	3.2	E
31-Mar-23	17:00	3.2	E
31-Mar-23	18:00	3.8	E
31-Mar-23	19:00	3.2	ENE
31-Mar-23	20:00	1.2	ESE
31-Mar-23	21:00	1.2	ENE
31-Mar-23	22:00	1.2	E
31-Mar-23	23:00	3.2	E

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 March 2023

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

Tentative Impact Air and Noise Monitoring Schedule for April 2023

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

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

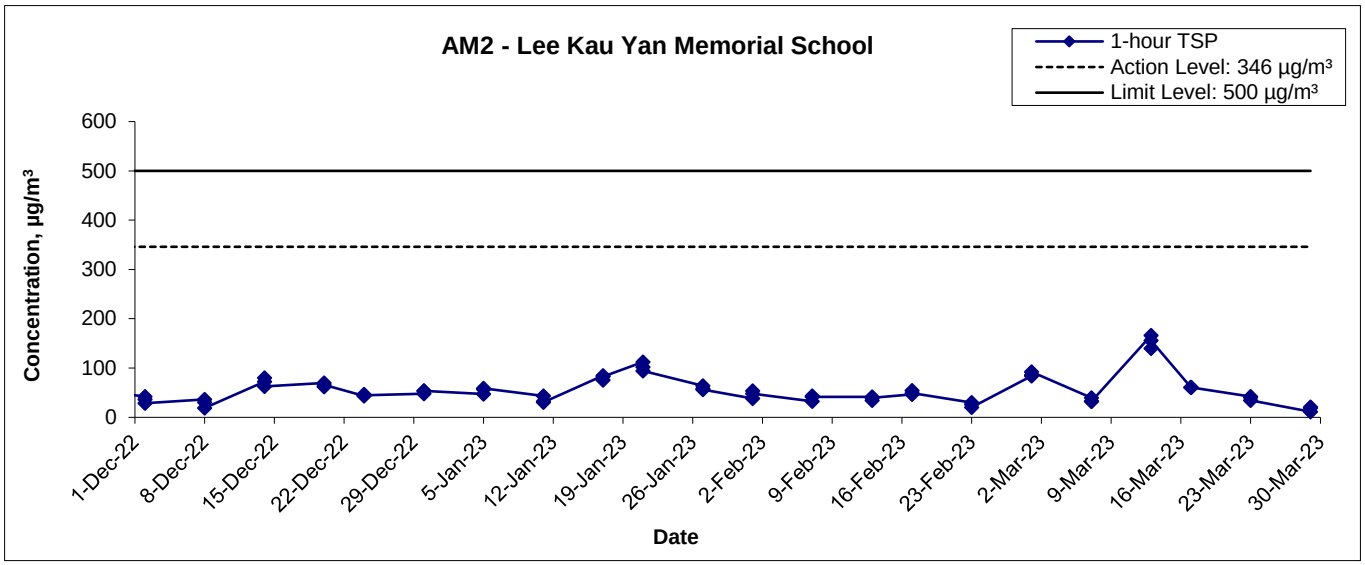
M3(A) - The Bridge connecting The Latitude
M4 - Lee Kau Yan Memorial School
M5(C) - Mercy Grace's Home

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 (μg/m^3)
1-Mar-23	13:00	Sunny	84.0
1-Mar-23	14:00	Sunny	86.0
1-Mar-23	15:00	Sunny	92.0
7-Mar-23	12:19	Sunny	39.6
7-Mar-23	13:19	Sunny	32.4
7-Mar-23	14:19	Sunny	32.4
13-Mar-23	15:00	Sunny	166.0
13-Mar-23	16:00	Sunny	140.0
13-Mar-23	17:00	Sunny	156.0
17-Mar-23	15:40	Sunny	60.8
17-Mar-23	16:40	Sunny	60.8
17-Mar-23	17:40	Sunny	60.8
23-Mar-23	9:00	Fine	41.8
23-Mar-23	10:00	Fine	39.9
23-Mar-23	11:00	Fine	34.2
29-Mar-23	9:00	Cloudy	11.4
29-Mar-23	10:00	Cloudy	19.0
29-Mar-23	11:00	Cloudy	20.9
		Average	65.4
		Maximum	166.0
		Minimum	11.4

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 Date: Mar 23	Project No.: MA16043 Appendix: E	CINOTECH

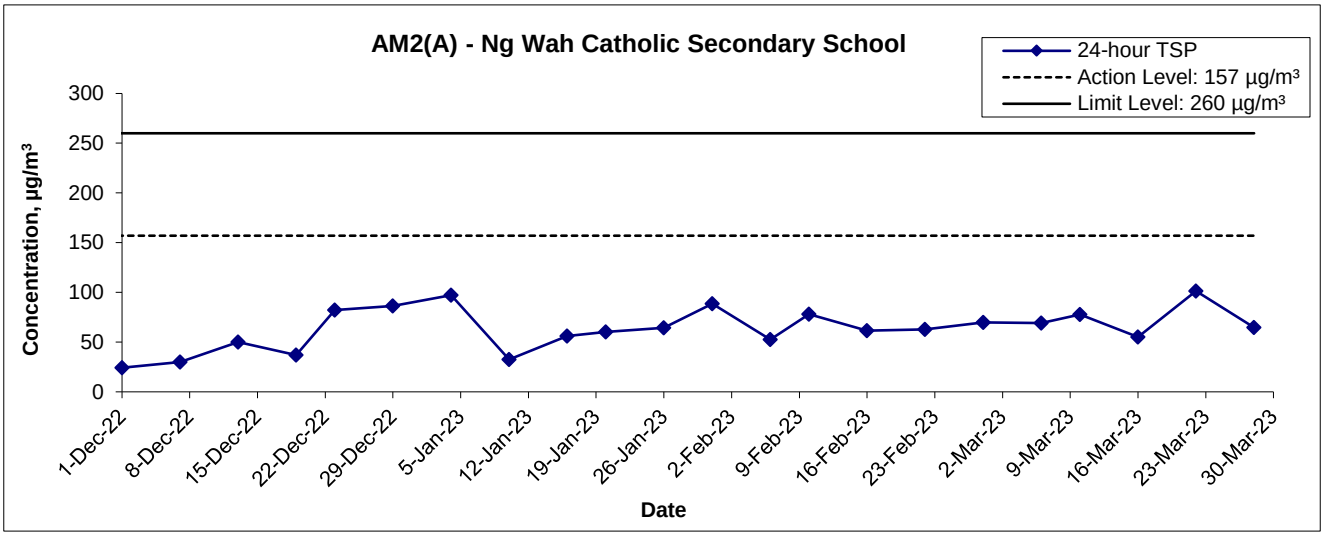
APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

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-Mar-23	Sunny	293.1	767.2	3.3786	3.4990	0.1204	10449.8	10473.9	24.0	1.21	1.21	1.21	1744.7	69.0
10-Mar-23	Sunny	295.3	764.5	3.4143	3.5502	0.1359	10473.9	10497.9	24.0	1.21	1.21	1.21	1743.6	77.9
16-Mar-23	Sunny	294.9	764.2	3.3296	3.4256	0.0961	10497.9	10521.9	24.0	1.21	1.21	1.21	1744.3	55.1
22-Mar-23	Fine	297.9	757.2	3.3705	3.5459	0.1754	10521.9	10545.9	24.0	1.20	1.20	1.20	1730.7	101.3
28-Mar-23	Cloudy	292.3	763.4	3.3166	3.4300	0.1134	10545.9	10569.9	24.0	1.22	1.21	1.22	1749.6	64.8
													Min	55.1
													Max	101.3
													Average	73.6

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 Date: Mar 23	Project No.: MA16043 Appendix: F	CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

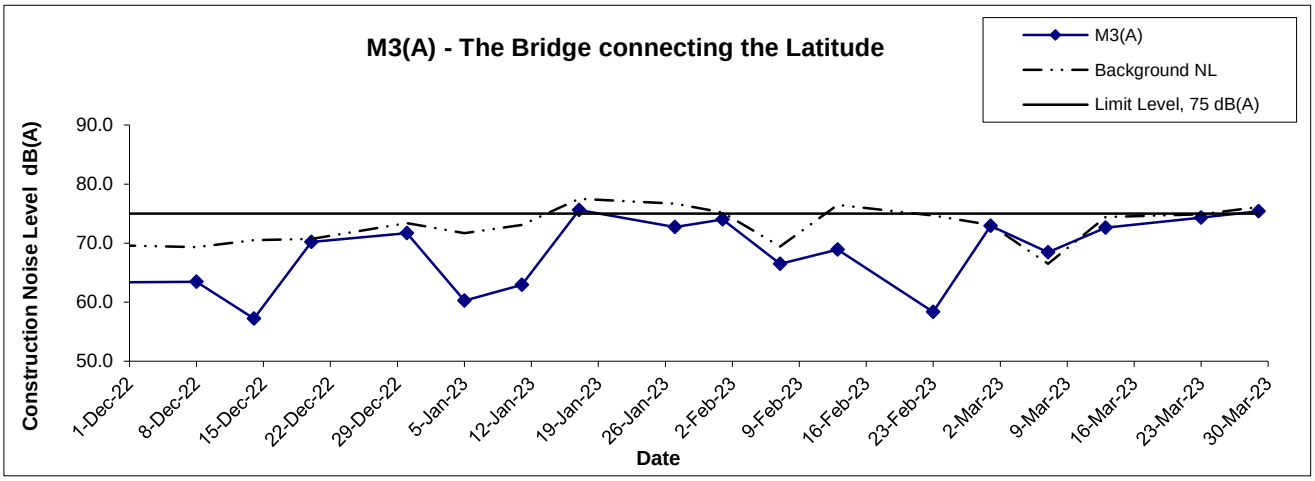
Appendix G - Noise Monitoring Results

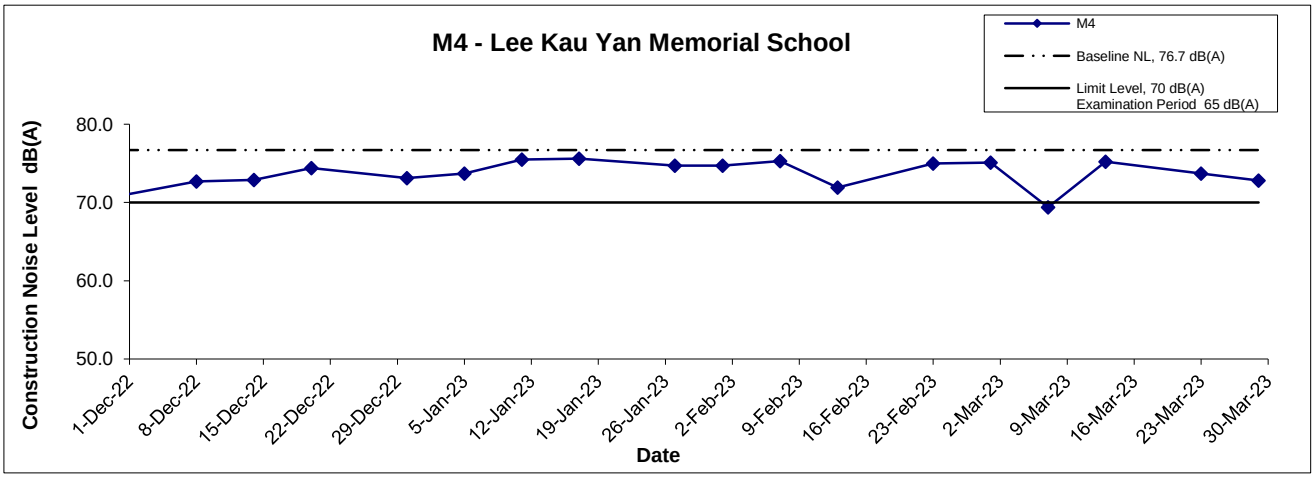
Location M3(A) - The Bridge connecting The Latitude								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Background Noise	Construction Noise Level	
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	
1-Mar-23	11:30	Fine	72.9	74.6	70.8	73.1	72.9	Measured ≦ Background
7-Mar-23	15:44	Sunny	70.6	74.1	60.2	66.5	68.5	
13-Mar-23	15:12	Sunny	72.6	74.8	68.6	74.4	72.6	Measured ≦ Background
23-Mar-23	11:30	Fine	74.3	75.8	72.3	74.9	74.3	Measured ≦ Background
29-Mar-23	11:30	Cloudy	75.4	76.8	73.6	76.1	75.4	Measured ≦ Background

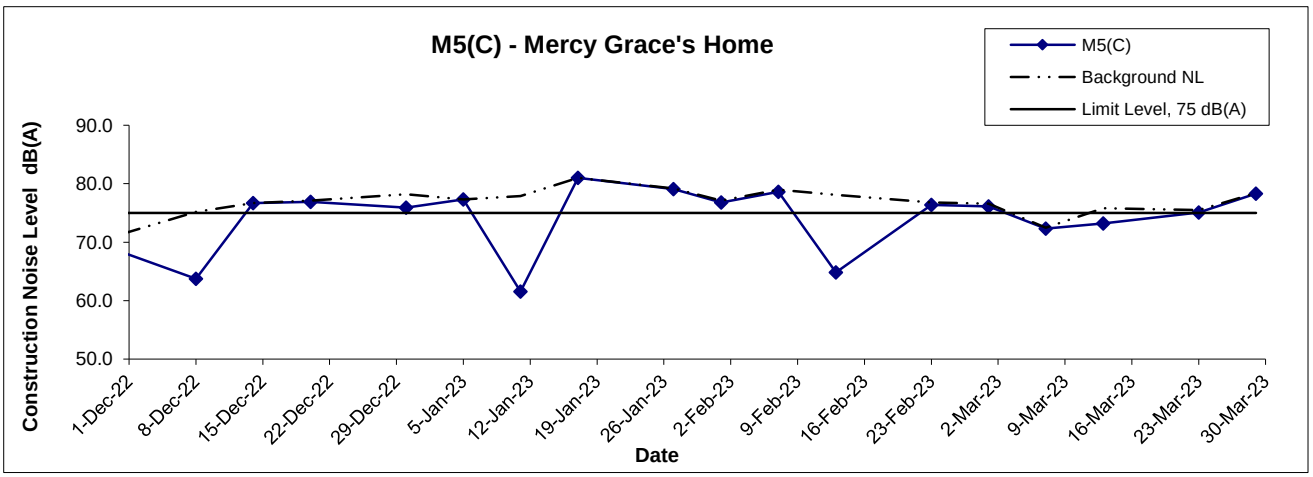
Location M4 - Lee Kau Yan Memorial School								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Baseline Level	Construction Noise Level	
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	
1-Mar-23	13:50	Sunny	75.1	76.4	73.1	76.7	75.1	Measured ≦ Baseline
7-Mar-23	14:31	Sunny	69.4	71.5	62.2		69.4	Measured ≦ Baseline
13-Mar-23	16:10	Sunny	75.2	77.8	70.8		75.2	Measured ≦ Baseline
23-Mar-23	9:30	Fine	73.7	75.6	71.9		73.7	Measured ≦ Baseline
29-Mar-23	10:30	Cloudy	72.8	74.0	71.2		72.8	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-Mar-23	14:54	Fine	76.1	78.4	72.3	76.6	76.1	Measured ≦ Background
7-Mar-23	11:24	Sunny	72.3	76.0	59.1	72.5	72.3	Measured ≦ Background
13-Mar-23	17:17	Sunny	77.7	82.7	75.2	75.8	73.2	
23-Mar-23	13:30	Fine	75.1	77.3	72.8	75.5	75.1	Measured ≦ Background
29-Mar-23	13:05	Cloudy	78.3	80.7	73.6	78.4	78.3	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: Mar 2023	Appendix: G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Appendix H – Summary of Exceedance

Exceedance Record for Contract No. KL/2015/02
Reporting Month: March 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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230308
Date	08 March 2023 (Wednesday)
Time	11:00 – 12:00

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230228).	

	Name	Signature	Date
Recorded by	Charles Fung		08 March 2023
Checked by	Colman Wong		13 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230315
Date	15 March 2023 (Wednesday)
Time	9:30 – 10:45

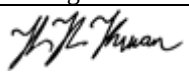
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230308).	

	Name	Signature	Date
Recorded by	Charles Fung		15 March 2023
Checked by	Colman Wong		20 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230321
Date	21 March 2023 (Tuesday)
Time	14:00 – 15:00

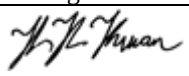
Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230315).	

	Name	Signature	Date
Recorded by	KK Kwan		21 March 2023
Checked by	Colman Wong		27 March 2023

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	230328
Date	28 March 2023 (Tuesday)
Time	14:00 – 15:00

Ref. No.	**Non-Compliance**	**Related Item No.**
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	No follow-up items are required from the previous site inspection (ref no.: 230321).	

	Name	Signature	Date
Recorded by	KK Kwan		28 March 2023
Checked by	Colman Wong		3 April 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	1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	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.	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.	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.	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	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	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures;	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	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

	EPD, IEC and ER informed of the results.	4. Advise the ER on the effectiveness of the proposed remedial measures.	implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	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.	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.	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.	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.

Appendix J - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
Limit Level being exceeded	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;	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.	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	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;

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

Appendix J - 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

	ER 2. Increase monitoring frequency 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed 5. If non-conformity stops, cease additional monitoring	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. Supervise implementation of remedial measures.	implemented	undertake any necessary replacement

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
Construction Air Quality		
S6.5	8 times daily watering of the work site with active dust emitting activities.	^
S6.8	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. Onsite unpaved roads should be compacted and kept free of lose materials.	^
	• Vehicle washing facilities should be provided at every vehicle exit point.	N/A(1)
	• 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.	^

S6.8	• DWFI compound for JVBC: 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 desiliting 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. • Desilting compound for KTN: 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 desiliting 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. • Decking or reconstruction of KTN within apron area: 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. • Localised maintenance dredging: 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	N/A N/A N/A N/A

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

	dredging operation. • Improvement of water circulation in KTAC and KTTS: 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. • In-situ sediment treatment by bioremediation: Bioremediation would be applied to the entire KTAC and KTTS.	N/A 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	Good Site Practice: • 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 (ii) Provision of structural fins	N/A N/A
S7.8	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and (ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A N/A

S7.8	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 1I1; and	N/A
	(ii) Setback of building about 5m from site boundary.	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	N/A
	(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
S7.8	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or	N/A
	(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
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	N/A
	(ii) ESS	N/A
	(iii) Tunnel Ventilation Shaft	N/A
	(iv) EFTS depot	N/A
S7.8	Installation of retractable roof or other equivalent measures	N/A
Construction Water Quality		
S8.8	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including:	
	• Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply;	N/A
	• Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps;	N/A
	• An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and	N/A
	• 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

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

S8.8	**Construction Phase** Marine-based Construction *Capital and Maintenance Dredging for Cruise Terminal* Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.	N/A
S8.8	*Fireboat Berth, Runway Opening and Road T2* 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.	N/A
S8.8	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 1,000m^3 per day using one grab dredger.	N/A
S8.8	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 2,000m^3 per day using one grab dredger.	N/A
8.8	Dredging for Road T2 should be conducted at a maximum rate of 8,000m^3 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).	N/A
8.8	Silt screens shall be applied to seawater intakes at WSD seawater intake.	N/A

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

S8.8	Land-based Construction *Construction Runoff* 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 • adequate maintenance of drainage systems to prevent flooding and overflow	 ^ ^
S8.8	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.	^
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.	^
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.	^
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.	^
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.	^
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 are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty	^

	surface runoff during storm events.	
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	*Drainage* 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	*Sewage Effluent* 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.	^

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

S8.8	*Stormwater Discharges* Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	^
S8.8	*Debris and Litter* 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	*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.	^
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

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
Construction Waste Management		
S9.5	Good Site Practices 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: • 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).	^ ^ ^ ^
S9.5	Waste Reduction Measures 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: • 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	^ ^ ^ ^ ^

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

S9.5	Dredged Marine Sediment 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)	N/A
S9.5	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	N/A
S9.5	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: • 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	N/A N/A N/A
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: • 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

	transient stockpiles should be located away from waterfront or storm drains as far as possible • 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 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.	^ ^ ^ ^ ^ ^ ^
S9.5/-	Chemical Waste (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 *Waste Disposal (Chemical Waste) (General) Regulation* (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.	^ ^

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		^
Construction Landscape and Visual			
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.	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. 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. The following recommendations were made to further enhance the mitigation measures: ● 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 31 Mar 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 '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)
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											
May											
June											
Sub-total	69.229	0	0	0.406	68.823	0	0	0	0	0	2.891
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	69.229	0	0	0.406	68.823	0	0	0	0	0	2.891

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 '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)
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 forcast of the total amount of C&D materials exected to be generated from the Works, together with a braskdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or excreeding 50,00 m³. (PS Cleuse 25.02A(7) refers).

APPENDIX N
CONSTRUCTION PROGRAMME

Kai Tak Development

- Stage 5A Infrastructure At Former North Apron Area

Bar Chart Programme

	Anticipated Completion	2023 1	2	3	4	5	6	7	8	9	10	11	12
- Removal of Traffic Deckings at Prince Edward Road East Outer Eastbound in front of Shek Ku Lung Road	30-Apr-23												
- Reinstatement UU, carriageway and layby at PERE	31-Aug-23												
- Reinstatement of Footpath of Prince Edward Road East in front of Shek Ku Lung Road Playground	31-Dec-23												
- Reinstatement of Stage 1	30-Jun-23												
- Reinstatement of Central Divider between PERE Lane 3 & 4	31-Aug-23												
- Reinstatement of Central Divider between PERE Lane 5 & 6	31-Oct-23												
- Reinstatement of Central Divider between PERE Lane 7 & 8	31-Dec-23												

FUGRO TECHNICAL SERVICES LIMITED

19/F, Fugro House – KCC2,
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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

March 2023

(Version 1.0)

Certified By: 

(Environmental Team Leader)

Member of the Aurecon Group

Date: 13 April 2023
Your ref:
Our ref: PL-202304008

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 (March 2023)

Reference is made to the Monthly EM&A Report (March 2023) (Version 1.0) issued by the Environmental Team on 12 April 2023.

Please be informed that we have no adverse comment on the captioned submission. We hereby verify the Monthly EM&A Report (March 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

Acuity Sustainability Consulting Limited
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EXECUTIVE SUMMARY

1. This is the 26th Monthly Environmental Monitoring & Audit (EM&A) report which summarises the findings of the EM&A Programme during the reporting period from 1 to 31 March 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 compliant	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:
   - Erection of falseworks and working platform for decking of Elevated Walkway LW-02
   - RC construction for decking of LW-02
   - RC construction works for lift and staircase of LW-02
   - ELS and excavation works for retrieving shaft at Sa Po Road
   - Steel back thrust construction at launching shaft for SB-01
   - Erect gantry crane at launching shaft for SB-01
   - Assembly of RTBM at launching shaft for SB-01

- Construction works for Road L16
- Construction works for DCS
- Construction works for Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14

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
Erection of falsework and working platform for decking of Elevated Walkway LW-02	Noise and Air Quality
RC construction of decking of LW-02	Noise and Air Quality
RC construction of LW02 lift and staircase	Noise and Air Quality
Excavation and ELS works for retrieving shaft at Sa Po Road	Noise and Air Quality
RC construction at Launching Shaft for SB-01	Noise and Air Quality
Construction of Road L16	Noise and Air Quality
Construction of DCS	Noise and Air Quality
Construction of Olympic Avenue	Noise and Air Quality
RC construction for Subway KS10 Lift and Staircase	Noise and Air Quality
Renovation works for existing Subways KS9, KS32 and KS10	Noise and Air Quality
Pre-bored socket H-pile construction works for Slip Road S14	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. Lam Shing Tim	Permit Holder	3842 7090	st_lam@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-STEC)	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

Erection of falseworks for decking of Elevated Walkway LW-02	Assembly of RTBM at launching shaft for SB-01
RC construction for decking of LW-02	Construction works for Road L16
RC construction works for lift and staircase of LW-02	Construction works for DCS
ELS and excavation works for retrieving shaft at Sa Po Road	Construction works for Olympic Avenue
Steel back thrust construction at launching shaft for SB-01	RC construction for Subway KS10 Lift and Staircase
Erect gantry crane at launching shaft for SB-01	Renovation works for existing subways KS9, KS32 and KS10
Pre-bored socket H-pile construction works for Slip Road S14	

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 (February 2023)	14 Mar 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
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 m^3/min. and 1.7 m^3/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 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 with at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

1-hour TSP Monitoring

Measurement Procedures

2.19 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, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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 Monitoring Station	Average TSP Concentration, $\mu g/m^3$	Range, $\mu g/m^3$	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AM2(A)	89	39 – 126	175	260
AM3	83	39 – 113	172	260

Table 2.7 Summary of 1-hour average TSP Monitoring Data during the reporting month

Air Monitoring Station	Average TSP Concentration, $\mu g/m^3$	Range, $\mu g/m^3$	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AM2(A)	76	35 – 108	302	500
AM3	70	33 – 99	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 (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 3.3 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.

3.18 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

3.19 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 ^
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

3.20 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)	70.1	69.2 – 71.2	When one documented complaint is received	75 dB(A)
M5(A)	72.6	72.3 – 72.8		

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.

3.21 There was no Action and Limit Level exceedance of $L_{Aeq, 30\text{-}min}$ recorded during the reporting month.

3.22 Graphical presentation and detailed monitoring results are shown in Appendix K.

3.23 The Event and Action Plan is provided in Appendix L.

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

3.25 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 Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 24-hour average TSP concentration		Measured 24-hr average TSP in Reporting Month (March 2023) $\mu g/m^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu g/m^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu g/m^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	39 – 126
AM3 - Sky Tower	A40^	106^	138^	39 – 113

Note:
^ Prediction results are given in the Table 3.13 of the EIA report EIA Register No. AEIAR-130/2009 for Kai Tak Development.

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 (March 2023) $\mu g/m^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu g/m^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu g/m^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	35 – 108
AM3 - Sky Tower	A40^	217^	247^	33 – 99

Note:
^ Prediction results are given in the Table 3.13 of the EIA report EIA 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 (March 2023) $L_{Aeq, 30min}$, dB(A)
M4(A) – Le Billionnaire	NA	NA	69.2 – 71.2
M5(A) – Prince Ritz	NA	NA	72.3 – 72.8

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 higher than the prediction for Scenario 1 (Mid 2009 to Mid 2013) 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, 9, 16, 23 and 30 March 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 March 2023	No	NA	NA
9 March 2023	No	NA	NA
16 March 2023	No	NA	NA
23 March 2023	No	NA	NA
30 March 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 M shall be performed.

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT

Site Inspection

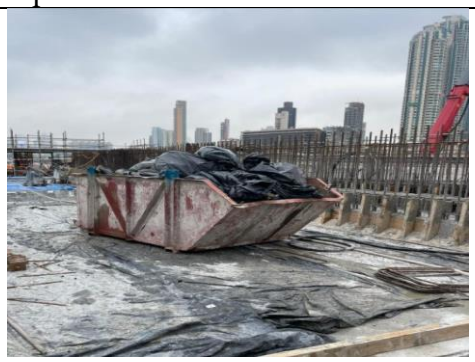
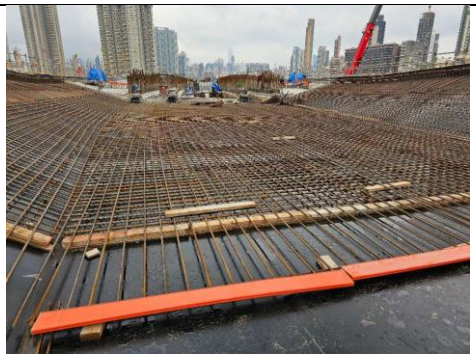
6.1 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

6.2 Site inspections were conducted 2, 9, 16, 23 and 30 March 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 March 2023	 Observation: Secondary container shall be provided for the plastic diesel engine oil to prevent soil contamination in LW02.	 Action Taken: The plastic diesel engine oil has been removed.	Closed out on 9 March 2023
9 March 2023	 Observation: The NNRM label for the excavator was missing. Please ensure the label is properly demonstrated.	 Action Taken: The NNRM label has been display for the excavator.	Closed out on 16 March 2023

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
16 March 2023	 Observation: Secondary container shall be provided for the plastic diesel engine oil to prevent soil contamination.	 Action Taken: The plastic diesel engine oil has been removed.	Closed out on 23 March 2023
23 March 2023	 Observation: 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.	 Action taken: Stockpiles have been removed.	Closed out on 28 March 2023
30 March 2023	 Observation: Construction waste on footbridge at LW02 shall be removed timely.	 Action taken: Construction waste on footbridge at LW02 has been removed.	Closed out on 6 April 2023

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
30 March 2023	 Observation: Vehicle battery (chemical) shall be stored at proper area to avoid soil contamination.	 Action taken: Vehicle battery (Chemical) has been removed.	Closed out on 6 April 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

Environmental Licenses, Notifications and Permits	Ref. No.	Valid Form	Valid Till
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-RE1383-22	30 Dec 2022	19 Jun 2023
	GW-RE1385-22	23 Dec 2022	19 Jun 2023
	GW-RE1401-22	23 Dec 2022	19 Jun 2023

Implementation Status of Environmental Mitigation Measures

6.7 The Contractor has implemented environmental mitigation measures and requires 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 compliant	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
Erection of falsework and working platform for decking of Elevated Walkway LW-02	Noise and Air Quality
RC construction of decking of LW-02	Noise and Air Quality
RC construction of LW02 lift and staircase	Noise and Air Quality
Excavation and ELS works for retrieving shaft at Sa Po Road	Noise and Air Quality
RC construction at Launching Shaft for SB-01	Noise and Air Quality
Construction of Road L16	Noise and Air Quality
Construction of DCS	Noise and Air Quality
Construction of Olympic Avenue	Noise and Air Quality
RC construction for Subway KS10 Lift and Staircase	Noise and Air Quality
Renovation works for existing Subways KS9, KS32 and KS10	Noise and Air Quality
Pre-bored socket H-pile construction works for Slip Road S14	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

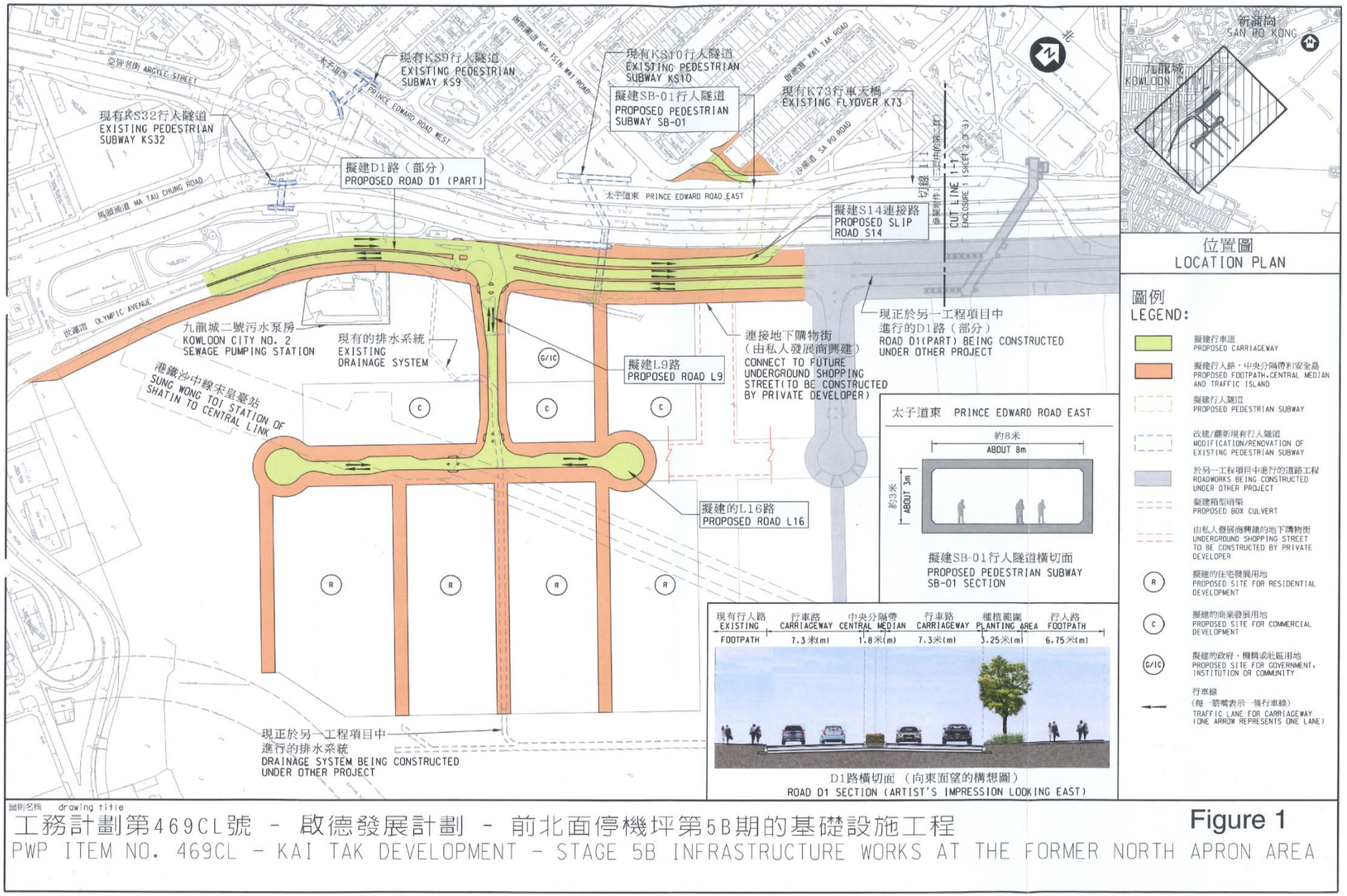


Figure 1 – Proposed works of Contract No. ED/2018/05

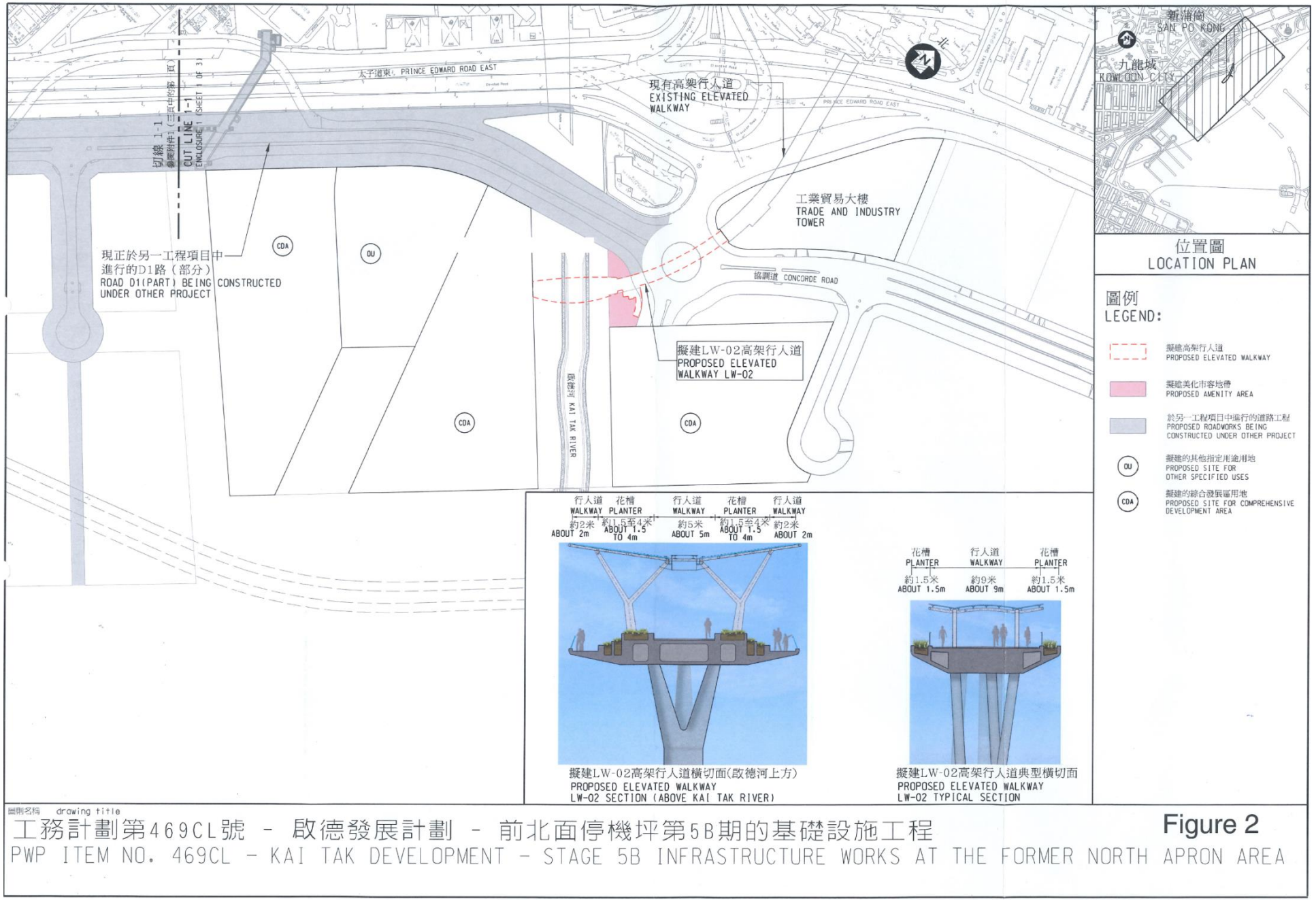


Figure 2 – Proposed works of Contract No. ED/2018/05

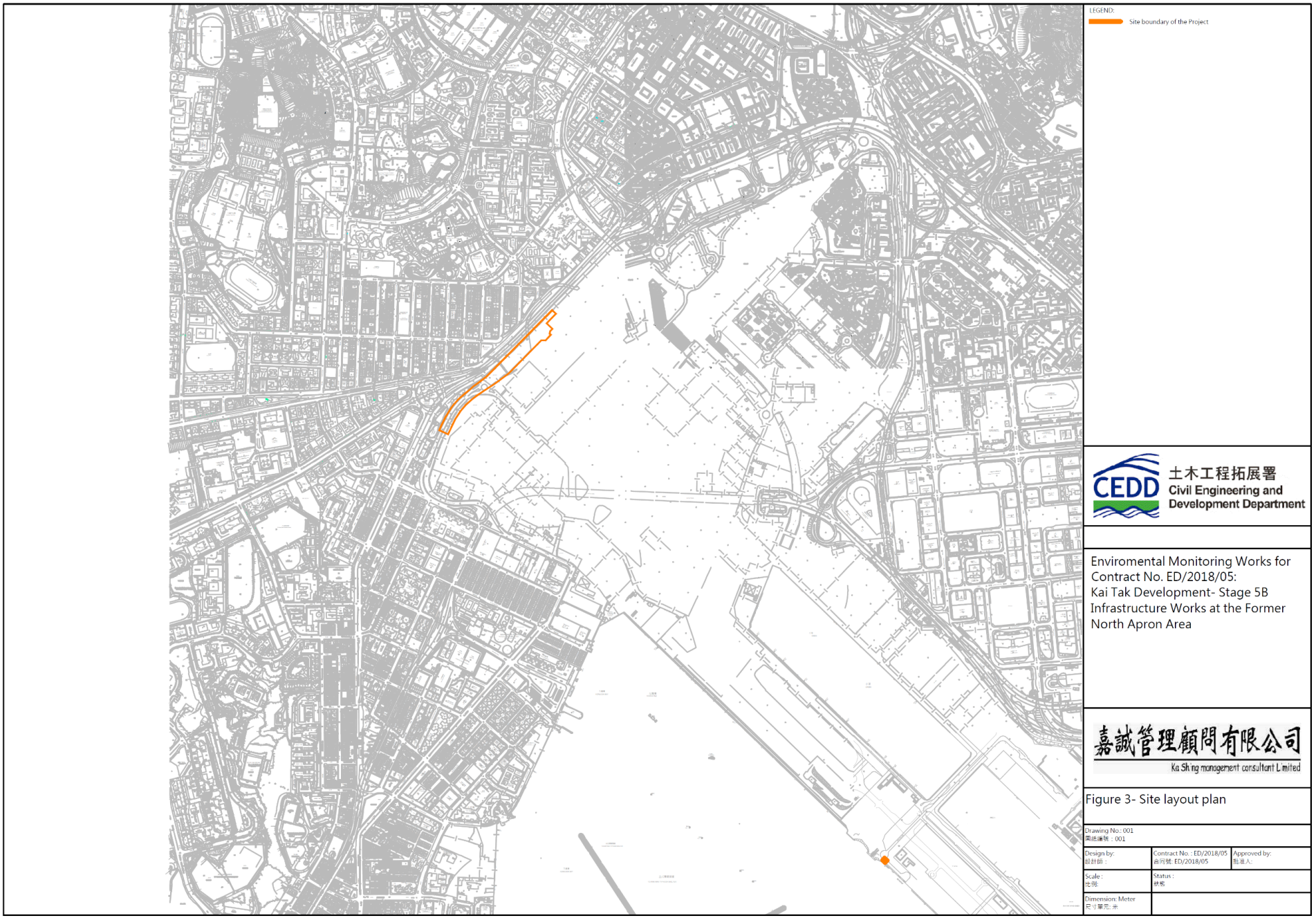


Figure 3 – D1 Road Site Layout Plan

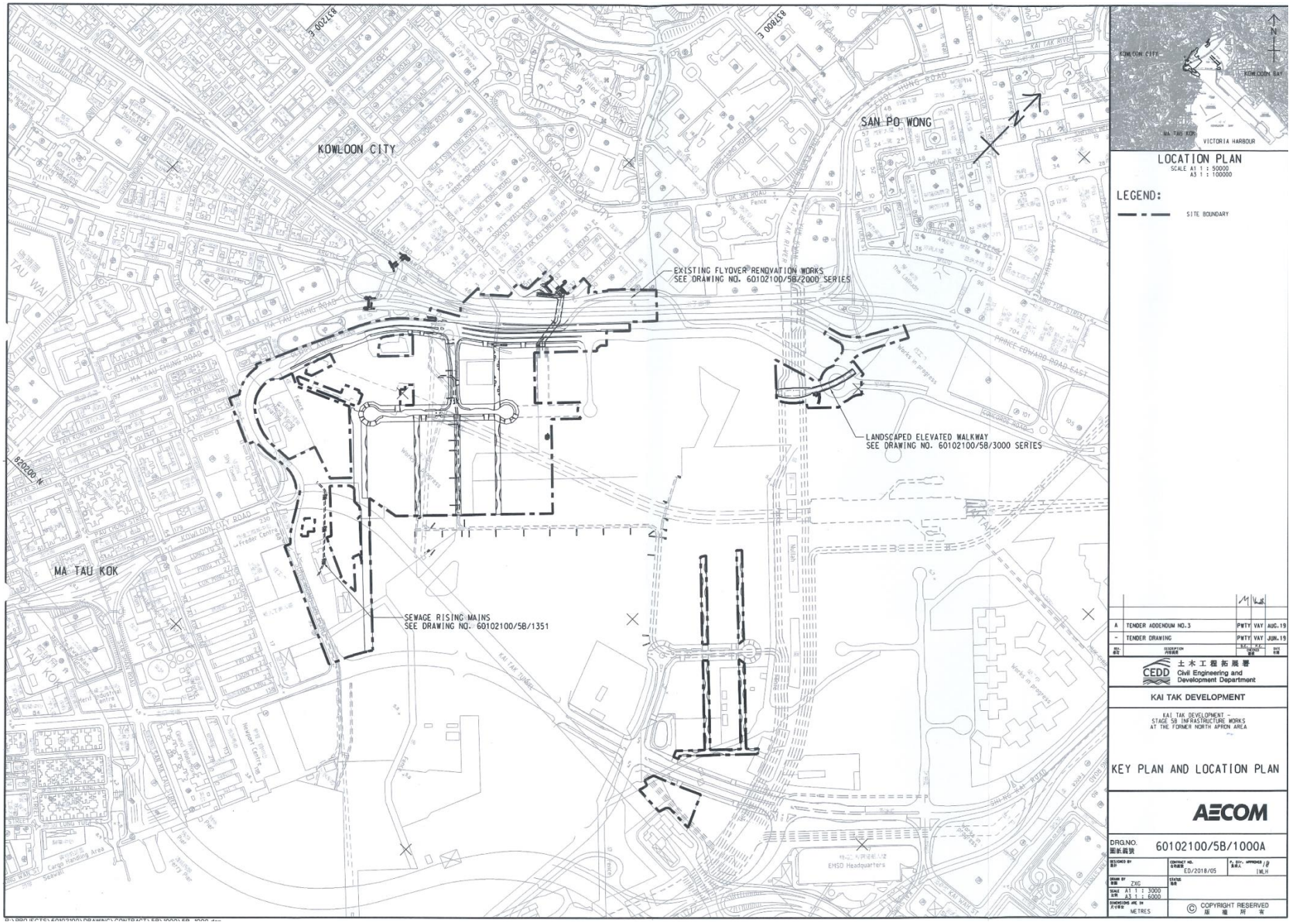


Figure 4 – Site Layout Plan

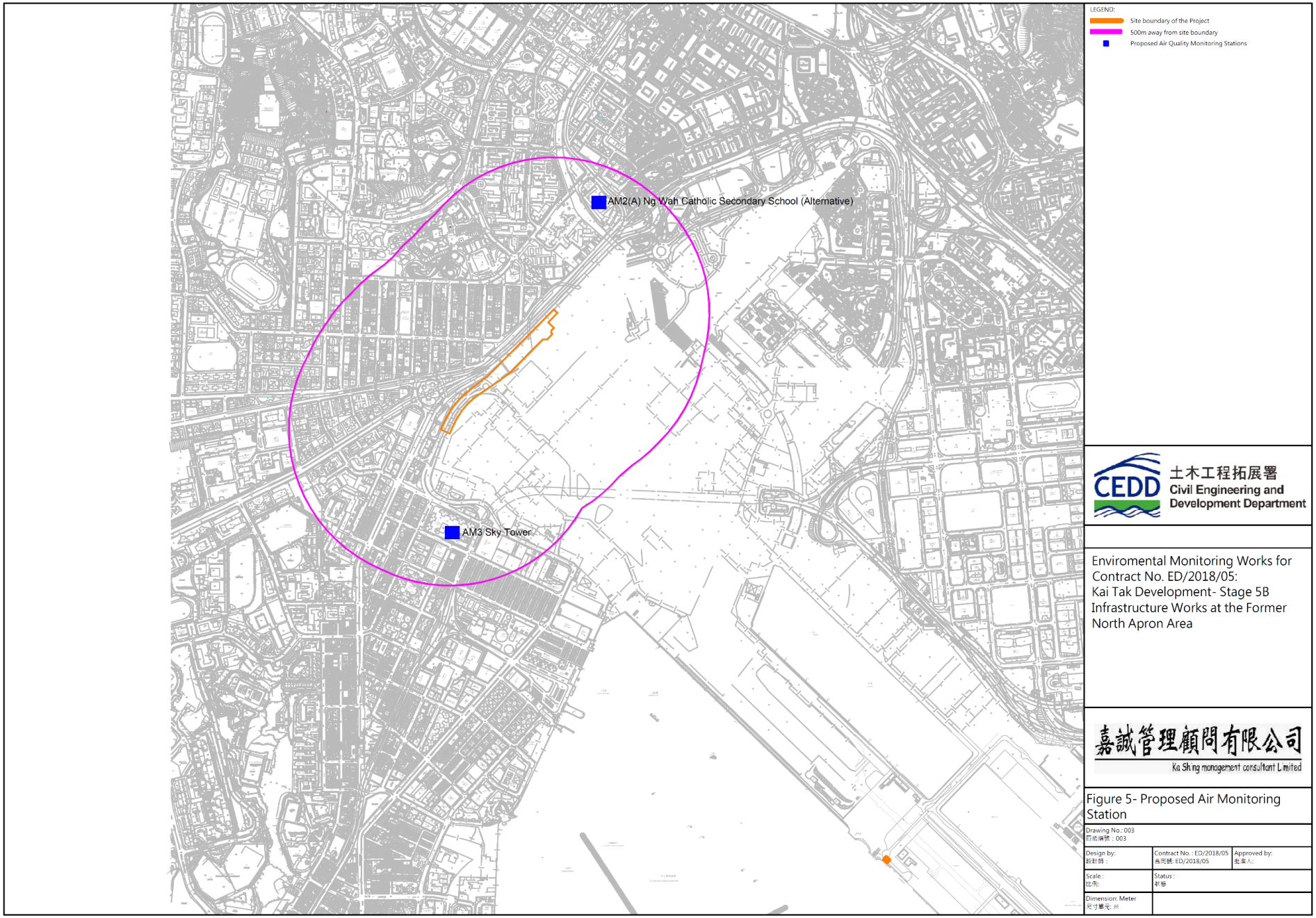


Figure 5 – Air Quality Monitoring Stations

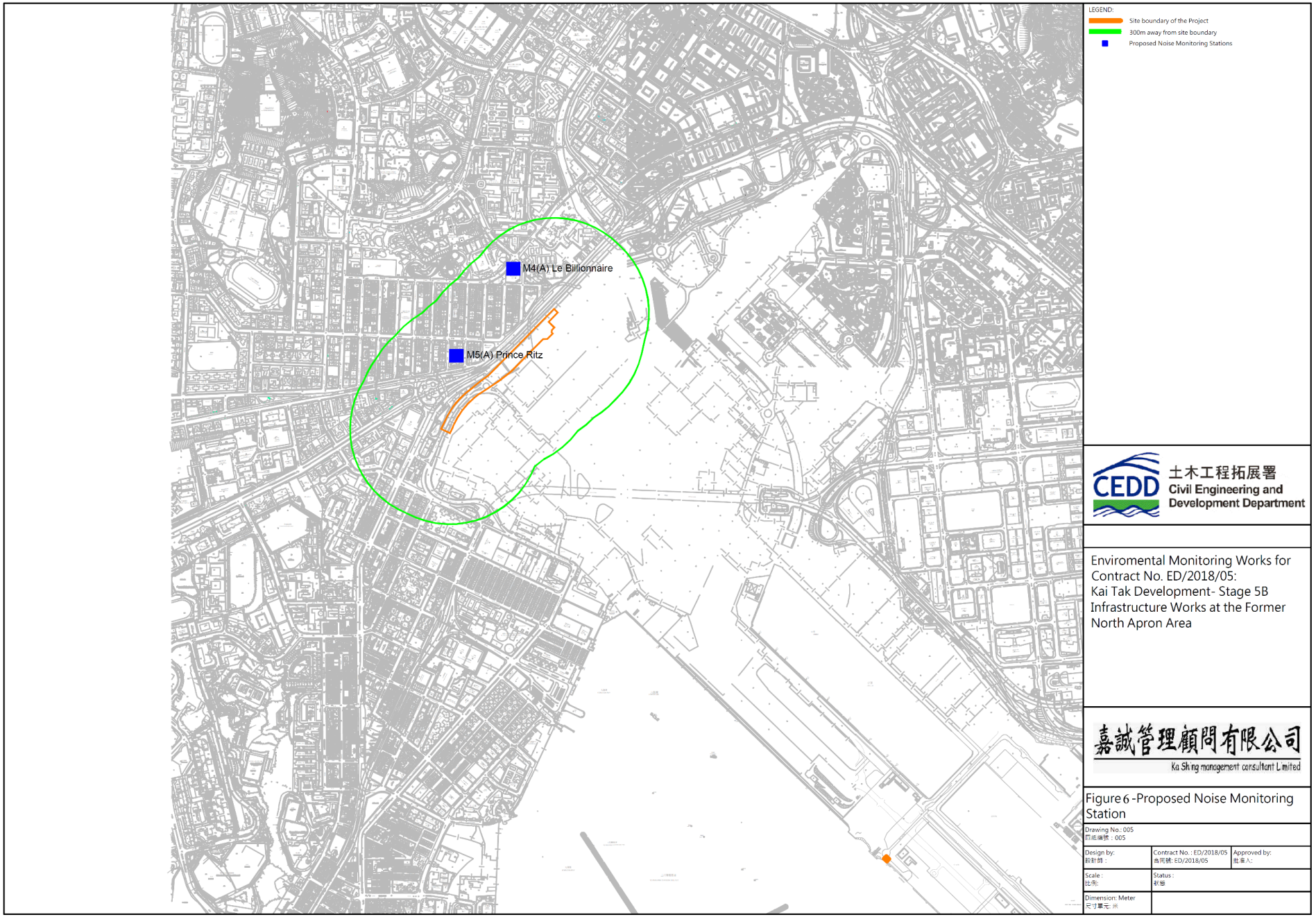
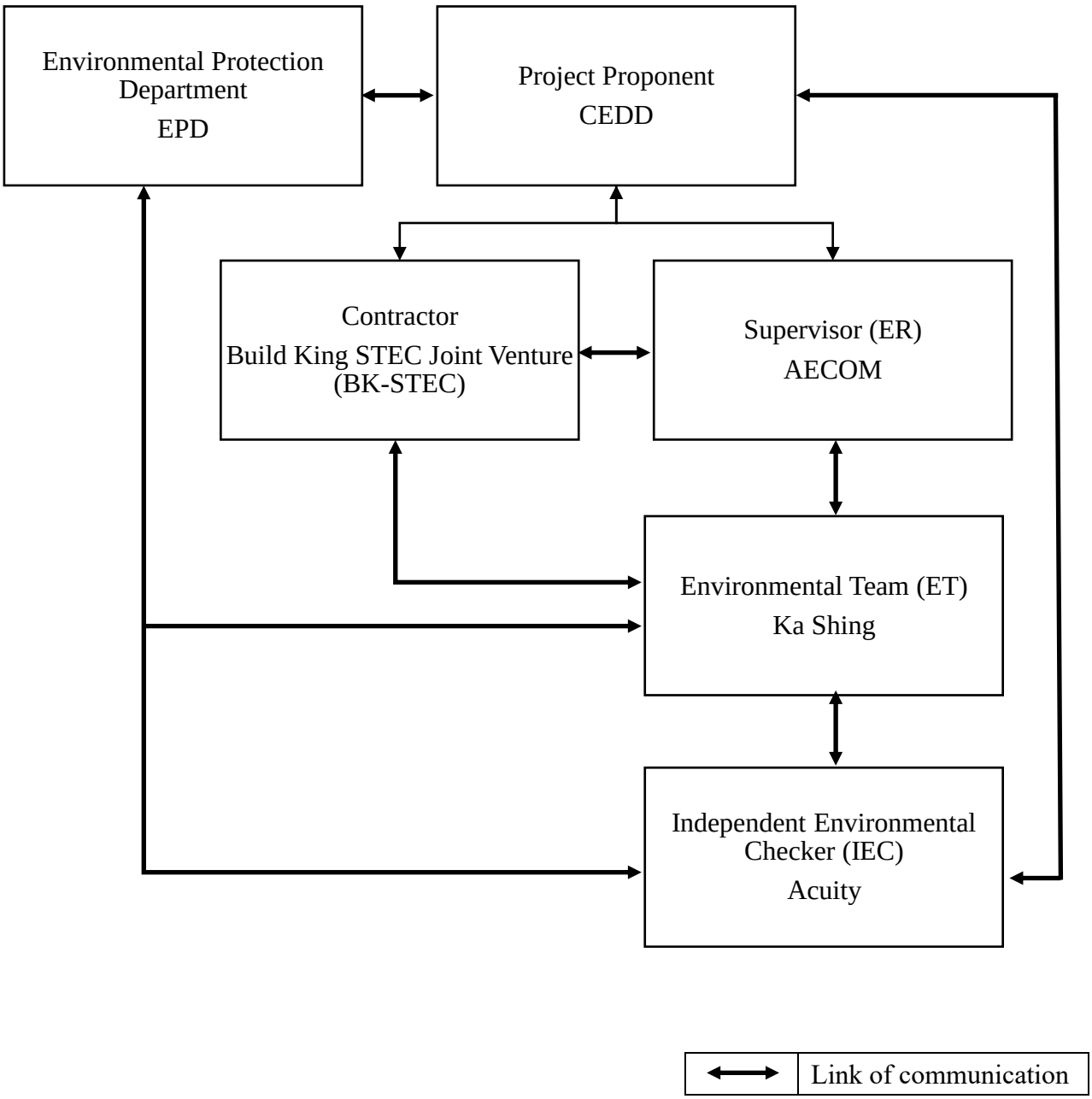


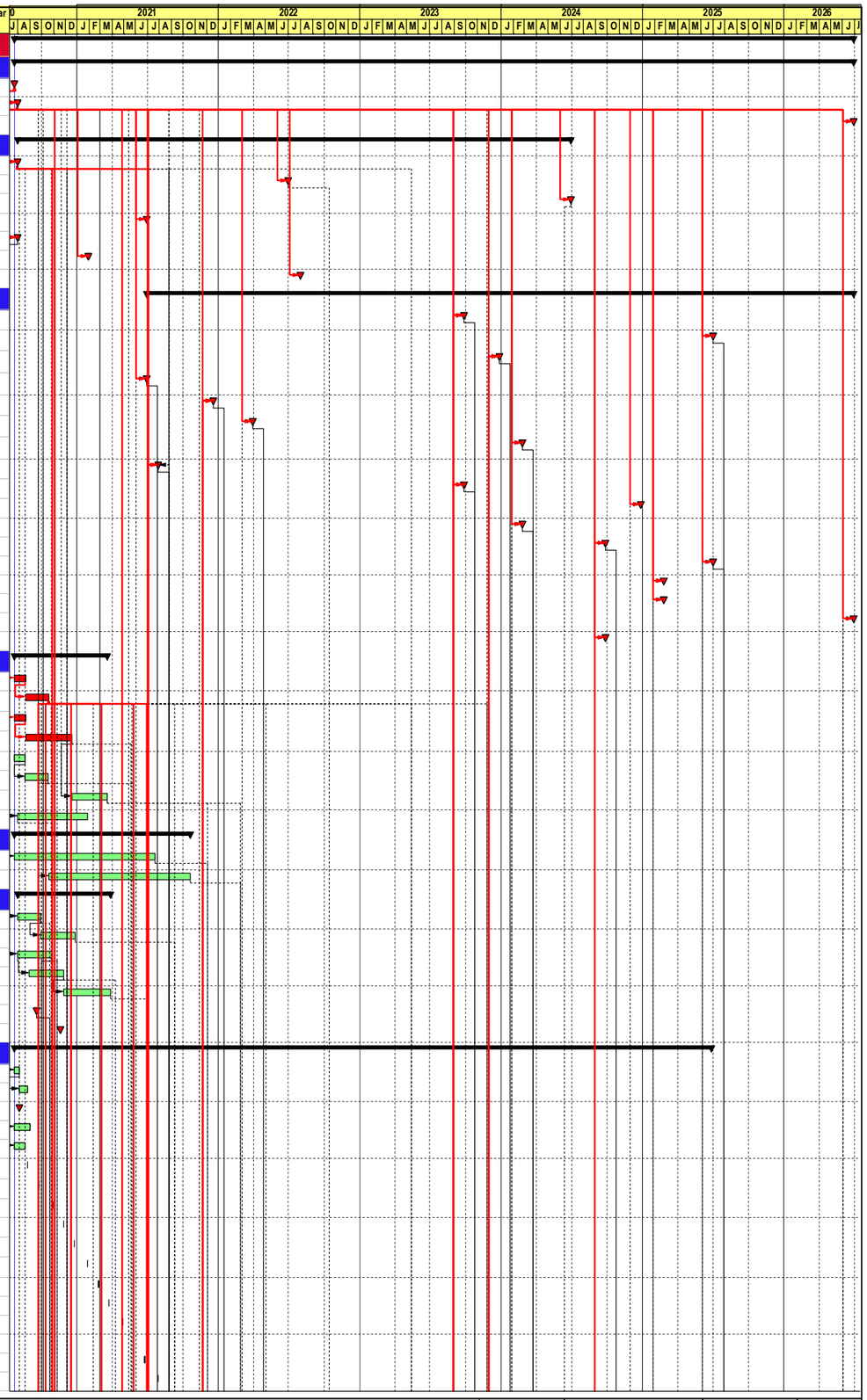
Figure 6 – Noise Monitoring Stations

Appendix A – Organization Chart of EM&A Team


Environmental Protection Department
EPD
Project Proponent
CEDD
Contractor
Build King STEC Joint Venture (BK-STEC)
Supervisor (ER)
AECOM
Environmental Team (ET)
Ka Shing
Independent Environmental Checker (IEC)
Acuity
Link of communication

Appendix B – Construction Programme

Activity ID	Activity Name	Dur (d)	Ori. Dur (d)	TRA (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KAI TAK DEVELOPMENT - STAGE 5B INFRASTRUCTURE WORKS AT THE FORMER NORTH APRON AREA		2170			22-Jul-20	30-Jun-26	22-Jul-20	30-Jun-26	0	
KEY DATES		2170			22-Jul-20	30-Jun-26	22-Jul-20	30-Jun-26	0	2
KTD.KD.1000	Contract date	0	0d	0d	22-Jul-20		22-Jul-20		0	2
KTD.KD.1010	Contract starting date	0	0d	0d	31-Jul-20		31-Jul-20		0	2
KTD.KD.1020	Contract completion date	0	0d	0d		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	0d	0d	31-Jul-20		31-Jul-20		0	2
KTD.KD.1040	Part 5	0	0d	0d	30-Jun-22		30-Jun-22		0	2
KTD.KD.1050	Part 6	0	0d	0d	29-Jun-24		29-Jun-24		0	2
KTD.KD.1060	Part 6A	0	0d	0d	30-Jun-21		30-Jun-21		0	2
KTD.KD.1070	Works Areas WA1, WA2, WA3, WA4, WA5, WA6 and WA7	0	0d	0d	31-Jul-20		31-Jul-20		0	2
KTD.KD.1080	Part 10 and Works Area WA4A	0	0d	0d	29-Jan-21		29-Jan-21		0	2
KTD.KD.1090	Works Area WA8	0	0d	0d	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	0d	0d		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	0d	0d		30-Jun-25		30-Jun-25	0	2
KTD.KD.1120	Section 3:Compl of all works within Parts 1A and 5 and drainage and sewage works within Part 6	0	0d	0d		27-Dec-23		27-Dec-23	0	2
KTD.KD.1130	Section 4:Compl of all UU and services within Part 4	0	0d	0d		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	0d	0d		17-Dec-21		17-Dec-21	0	2
KTD.KD.1150	Section 6:Compl of all works within Part 2 and Part 10	0	0d	0d		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	0d	0d		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	0d	0d		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 239days from starting date)	0	0d	0d		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	0d	0d		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	0d	0d		25-Feb-24		25-Feb-24	0	2
KTD.KD.1210	Section 12:Compl of all SB-01 within Part 1A	0	0d	0d		25-Sep-24		25-Sep-24	0	2
KTD.KD.1220	Section 13:Compl of all works within Part 6	0	0d	0d		30-Jun-25		30-Jun-25	0	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	0d	0d		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	0d	0d		24-Feb-25		24-Feb-25	0	2
KTD.KD.1250	Section 16:Compl of establ work for landscape works within Part 6	0	0d	0d		30-Jun-26		30-Jun-26	0	2
KTD.KD.1260	Section 17:Compl of establ work for landscape works under Section 1	0	0d	0d		25-Sep-24		25-Sep-24	0	2
DESIGN, SUBMISSIONS, PERMIT APPLICATION & APPROVAL		240			22-Jul-20	18-Mar-21	22-Jul-20	24-Feb-22	343	2
KTD.KD.1270	Prepare/submission of temporary works design	30	30d	0d	22-Jul-20	20-Aug-20	22-Jul-20	20-Aug-20	0	2
KTD.KD.1280	Consultation/approval of temporary works design	60	60d	0d	21-Aug-20	19-Oct-20	21-Aug-20	19-Oct-20	0	2
KTD.KD.1290	Prepare/submit Temp Geotechnical&Structural Works to HyD/TD/CEDD/GEO and others (incl SB-01 by RTBM, etc.)	30	30d	0d	22-Jul-20	20-Aug-20	22-Jul-20	20-Aug-20	0	2
KTD.KD.1300	Consult/approve Temp Geotechnical&Structural Works by HyD/TD/CEDD/GEO and others (incl SB-01 by RTBM, etc.)	120	120d	0d	21-Aug-20	18-Dec-20	21-Aug-20	18-Dec-20	0	2
KTD.KD.1310	Prepare/submission of Temporary Drainage and Sewerage Management Plan to DSD/CEDD and others	29	29d	0d	22-Jul-20	19-Aug-20	23-Jul-20	20-Aug-20	1	2
KTD.KD.1320	Consultation/approval of Temporary Drainage and Sewerage Management Plan by DSD/CEDD and others	60	60d	0d	20-Aug-20	18-Oct-20	21-Aug-20	19-Oct-20	1	2
KTD.KD.1330	Application/approval of CNP for night works by relevant authorities and liaison with projects nearby	90	90d	0d	19-Dec-20	18-Mar-21	27-Nov-21	24-Feb-22	343	2
KTD.KD.1340	Application/approval of permits or other statutory submissions by relevant authorities (i.e. CEDD,HyD,WSD,XPMS & EPD)	180	180d	0d	31-Jul-20	26-Jan-21	03-Sep-20	01-Mar-21	34	2
PROCUREMENT, FABRICATION AND DELIVERY		455			22-Jul-20	19-Oct-21	31-Dec-20	26-Mar-22	158	2
KTD.KD.1350	Design, procurement, fabrication and delivery of RTBM	365	365d	0d	22-Jul-20	21-Jul-21	31-Dec-20	30-Dec-21	162	2
KTD.KD.1360	Procurement, fabrication, delivery of temporary steel lining casting and pre-assembly	365	365d	0d	20-Oct-20	19-Oct-21	27-Mar-21	26-Mar-22	158	2
TEMPORARY TRAFFIC MANGEMENT		240			31-Jul-20	27-Mar-21	12-Sep-20	29-Mar-22	367	2
KTD.KD.1370	Prepare/Submit/Consult/Approval of TTA for loading/unloading at Sa Po Road and Concorde Road roundabout	60	46d	14d	31-Jul-20	28-Sep-20	21-Mar-21	19-May-21	233	2
KTD.KD.1380	Prepare/Submit/Consult/Approval of TTA for working platform erection crossing Concorde Road roundabout	90	76d	14d	29-Sep-20	27-Dec-20	30-Dec-21	29-Mar-22	457	2
KTD.KD.1390	Prepare/Submit/Consult/Approval of TTA for GI/diversion/preliminary works at PERE and Sa Po Road	90	76d	14d	31-Jul-20	28-Oct-20	12-Sep-20	10-Dec-20	43	2
KTD.KD.1400	Prepare/Submit/Consult/Approval of TTA for 2-staged Sa Po Road and PERE W/B diversion	90	76d	14d	30-Aug-20	27-Nov-20	07-Feb-21	07-May-21	161	2
KTD.KD.1410	Prepare/Submit/Consult/Approval of TTA for road and drainage works along Olympic Avenue	120	106d	14d	28-Nov-20	27-Mar-21	02-Nov-21	01-Mar-22	339	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
CONSTRUCTION HEALTH AND SAFETY MANAGEMENT		1801			22-Jul-20	26-Jun-25	23-Jul-20	26-Jun-25	0	2
KTD.KD.1420	Prepare/submit of Draft Safety Plan	13	13d	0d	22-Jul-20	03-Aug-20	23-Jul-20	04-Aug-20	1	2
KTD.KD.1430	Prepare/submit Safety Plan	21	21d	0d	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	0d	0d		03-Aug-20		03-Aug-20	0	2
KTD.KD.1450	Prepare/submit Site Traffic Safety Management Plan	41	41d	0d	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	29d	0d	22-Jul-20	19-Aug-20	23-Jul-20	20-Aug-20	1	2
KTD.KD.1470	1st SSMC Meeting	1	1d	0d	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	0	2
KTD.KD.1480	2nd SSMC Meeting	1	1d	0d	23-Sep-20	23-Sep-20	23-Sep-20	23-Sep-20	0	2
KTD.KD.1490	3rd SSMC Meeting	1	1d	0d	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	0	2
KTD.KD.1500	4th SSMC Meeting	1	1d	0d	26-Nov-20	26-Nov-20	26-Nov-20	26-Nov-20	0	2
KTD.KD.1510	5th SSMC Meeting	1	1d	0d	24-Dec-20	24-Dec-20	24-Dec-20	24-Dec-20	0	2
KTD.KD.1520	6th SSMC Meeting	1	1d	0d	28-Jan-21	28-Jan-21	28-Jan-21	28-Jan-21	0	2
KTD.KD.1530	7th SSMC Meeting	1	1d	0d	25-Feb-21	25-Feb-21	25-Feb-21	25-Feb-21	0	2
KTD.KD.1540	8th SSMC Meeting	1	1d	0d	24-Mar-21	24-Mar-21	24-Mar-21	24-Mar-21	0	2
KTD.KD.1550	9th SSMC Meeting	1	1d	0d	29-Apr-21	29-Apr-21	29-Apr-21	29-Apr-21	0	2
KTD.KD.1560	10th SSMC Meeting	1	1d	0d	27-May-21	27-May-21	27-May-21	27-May-21	0	2
KTD.KD.1570	11th SSMC Meeting	1	1d	0d	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	0	2
KTD.KD.1580	12th SSMC Meeting	1	1d	0d	29-Jul-21	29-Jul-21	29-Jul-21	29-Jul-21	0	2



Milestone
Critical Milestone
Critical Work
Planned W...
Summary

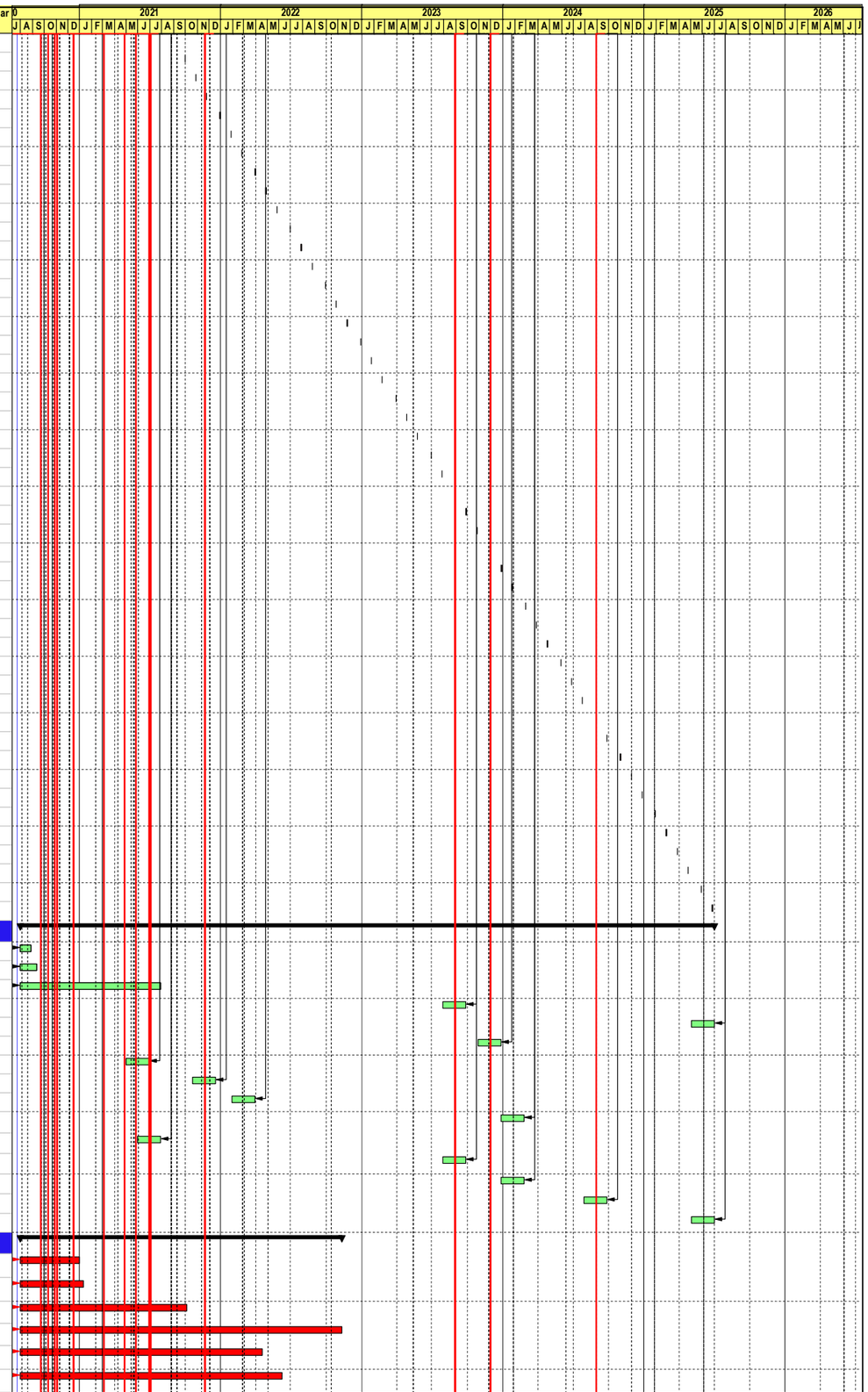
Build King – STEC Joint Venture

ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area

WORKS PROGRAMME

Date	Revision	Checked	Approv...
21-Aug-20	Revision 1	LC	GC
10-Oct-20	Revision 2	LC	GC
18-Nov-20	Revision 3	LC	GC

Activity ID	Activity Name	Dur (d)	Ori. Dur (d)	TRA (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.KD.1590	13th SSMC Meeting	1	1d	0d	26-Aug-21	26-Aug-21	26-Aug-21	26-Aug-21	0	2
KTD.KD.1600	14th SSMC Meeting	1	1d	0d	30-Sep-21	30-Sep-21	30-Sep-21	30-Sep-21	0	2
KTD.KD.1610	15th SSMC Meeting	1	1d	0d	28-Oct-21	28-Oct-21	28-Oct-21	28-Oct-21	0	2
KTD.KD.1620	16th SSMC Meeting	1	1d	0d	25-Nov-21	25-Nov-21	25-Nov-21	25-Nov-21	0	2
KTD.KD.1630	17th SSMC Meeting	1	1d	0d	30-Dec-21	30-Dec-21	30-Dec-21	30-Dec-21	0	2
KTD.KD.1640	18th SSMC Meeting	1	1d	0d	27-Jan-22	27-Jan-22	27-Jan-22	27-Jan-22	0	2
KTD.KD.1650	19th SSMC Meeting	1	1d	0d	24-Feb-22	24-Feb-22	24-Feb-22	24-Feb-22	0	2
KTD.KD.1660	20th SSMC Meeting	1	1d	0d	31-Mar-22	31-Mar-22	31-Mar-22	31-Mar-22	0	2
KTD.KD.1670	21st SSMC Meeting	1	1d	0d	28-Apr-22	28-Apr-22	28-Apr-22	28-Apr-22	0	2
KTD.KD.1680	22nd SSMC Meeting	1	1d	0d	26-May-22	26-May-22	26-May-22	26-May-22	0	2
KTD.KD.1690	23rd SSMC Meeting	1	1d	0d	30-Jun-22	30-Jun-22	30-Jun-22	30-Jun-22	0	2
KTD.KD.1700	24th SSMC Meeting	1	1d	0d	28-Jul-22	28-Jul-22	28-Jul-22	28-Jul-22	0	2
KTD.KD.1710	25th SSMC Meeting	1	1d	0d	25-Aug-22	25-Aug-22	25-Aug-22	25-Aug-22	0	2
KTD.KD.1720	26th SSMC Meeting	1	1d	0d	29-Sep-22	29-Sep-22	29-Sep-22	29-Sep-22	0	2
KTD.KD.1730	27th SSMC Meeting	1	1d	0d	27-Oct-22	27-Oct-22	27-Oct-22	27-Oct-22	0	2
KTD.KD.1740	28th SSMC Meeting	1	1d	0d	24-Nov-22	24-Nov-22	24-Nov-22	24-Nov-22	0	2
KTD.KD.1750	29th SSMC Meeting	1	1d	0d	29-Dec-22	29-Dec-22	29-Dec-22	29-Dec-22	0	2
KTD.KD.1760	30th SSMC Meeting	1	1d	0d	26-Jan-23	26-Jan-23	26-Jan-23	26-Jan-23	0	2
KTD.KD.1770	31st SSMC Meeting	1	1d	0d	23-Feb-23	23-Feb-23	23-Feb-23	23-Feb-23	0	2
KTD.KD.1780	32nd SSMC Meeting	1	1d	0d	30-Mar-23	30-Mar-23	30-Mar-23	30-Mar-23	0	2
KTD.KD.1790	33rd SSMC Meeting	1	1d	0d	27-Apr-23	27-Apr-23	27-Apr-23	27-Apr-23	0	2
KTD.KD.1800	34th SSMC Meeting	1	1d	0d	25-May-23	25-May-23	25-May-23	25-May-23	0	2
KTD.KD.1810	35th SSMC Meeting	1	1d	0d	29-Jun-23	29-Jun-23	29-Jun-23	29-Jun-23	0	2
KTD.KD.1820	36th SSMC Meeting	1	1d	0d	27-Jul-23	27-Jul-23	27-Jul-23	27-Jul-23	0	2
KTD.KD.1830	37th SSMC Meeting	1	1d	0d	31-Aug-23	31-Aug-23	31-Aug-23	31-Aug-23	0	2
KTD.KD.1840	38th SSMC Meeting	1	1d	0d	28-Sep-23	28-Sep-23	28-Sep-23	28-Sep-23	0	2
KTD.KD.1850	39th SSMC Meeting	1	1d	0d	26-Oct-23	26-Oct-23	26-Oct-23	26-Oct-23	0	2
KTD.KD.1860	40th SSMC Meeting	1	1d	0d	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	0	2
KTD.KD.1870	41st SSMC Meeting	1	1d	0d	28-Dec-23	28-Dec-23	28-Dec-23	28-Dec-23	0	2
KTD.KD.1880	42nd SSMC Meeting	1	1d	0d	25-Jan-24	25-Jan-24	25-Jan-24	25-Jan-24	0	2
KTD.KD.1890	43rd SSMC Meeting	1	1d	0d	29-Feb-24	29-Feb-24	29-Feb-24	29-Feb-24	0	2
KTD.KD.1900	44th SSMC Meeting	1	1d	0d	28-Mar-24	28-Mar-24	28-Mar-24	28-Mar-24	0	2
KTD.KD.1910	45th SSMC Meeting	1	1d	0d	25-Apr-24	25-Apr-24	25-Apr-24	25-Apr-24	0	2
KTD.KD.1920	46th SSMC Meeting	1	1d	0d	30-May-24	30-May-24	30-May-24	30-May-24	0	2
KTD.KD.1930	47th SSMC Meeting	1	1d	0d	27-Jun-24	27-Jun-24	27-Jun-24	27-Jun-24	0	2
KTD.KD.1940	48th SSMC Meeting	1	1d	0d	25-Jul-24	25-Jul-24	25-Jul-24	25-Jul-24	0	2
KTD.KD.1950	49th SSMC Meeting	1	1d	0d	29-Aug-24	29-Aug-24	29-Aug-24	29-Aug-24	0	2
KTD.KD.1960	50th SSMC Meeting	1	1d	0d	26-Sep-24	26-Sep-24	26-Sep-24	26-Sep-24	0	2
KTD.KD.1970	51st SSMC Meeting	1	1d	0d	31-Oct-24	31-Oct-24	31-Oct-24	31-Oct-24	0	2
KTD.KD.1980	52nd SSMC Meeting	1	1d	0d	28-Nov-24	28-Nov-24	28-Nov-24	28-Nov-24	0	2
KTD.KD.1990	53rd SSMC Meeting	1	1d	0d	26-Dec-24	26-Dec-24	26-Dec-24	26-Dec-24	0	2
KTD.KD.2000	54th SSMC Meeting	1	1d	0d	30-Jan-25	30-Jan-25	30-Jan-25	30-Jan-25	0	2
KTD.KD.2010	55th SSMC Meeting	1	1d	0d	27-Feb-25	27-Feb-25	27-Feb-25	27-Feb-25	0	2
KTD.KD.2020	56th SSMC Meeting	1	1d	0d	27-Mar-25	27-Mar-25	27-Mar-25	27-Mar-25	0	2
KTD.KD.2030	57th SSMC Meeting	1	1d	0d	24-Apr-25	24-Apr-25	24-Apr-25	24-Apr-25	0	2
KTD.KD.2040	58th SSMC Meeting	1	1d	0d	29-May-25	29-May-25	29-May-25	29-May-25	0	2
KTD.KD.2050	59th SSMC Meeting	1	1d	0d	26-Jun-25	26-Jun-25	26-Jun-25	26-Jun-25	0	2
BIM RELATED DELIVERABLES		**1796**			**31-Jul-20**	**30-Jun-25**	**01-Aug-20**	**30-Jun-26**	**365**	**2**
KTD.KD.2060	Prepare/submit BIM Execution Plan	29	29d	0d	31-Jul-20	28-Aug-20	01-Aug-20	29-Aug-20	1	2
KTD.KD.2070	Prepare/submit Combined Services Drawings and CBWD generated from BIM	44	44d	0d	31-Jul-20	12-Sep-20	01-Aug-20	13-Sep-20	1	2
KTD.KD.2080	Prepare/submit proposal of asset information requirement	364	364d	0d	31-Jul-20	29-Jul-21	01-Aug-20	30-Jul-21	1	2
KTD.KD.2090	Prepare/submit Asset Data Deliverables for Section 1	60	60d	0d	29-Jul-23	26-Sep-23	02-May-26	30-Jun-26	1008	2
KTD.KD.2100	Prepare/submit Asset Date Deliverables for Section 2	60	60d	0d	02-May-25	30-Jun-25	02-May-26	30-Jun-26	365	2
KTD.KD.2110	Prepare/submit Asset Date Deliverables for Section 3	60	60d	0d	29-Oct-23	27-Dec-23	02-May-26	30-Jun-26	916	2
KTD.KD.2120	Prepare/submit Asset Date Deliverables for Section 4	60	60d	0d	02-May-21	30-Jun-21	02-May-26	30-Jun-26	1826	2
KTD.KD.2130	Prepare/submit Asset Date Deliverables for Section 5	60	60d	0d	19-Oct-21	17-Dec-21	02-May-26	30-Jun-26	1656	2
KTD.KD.2140	Prepare/submit Asset Date Deliverables for Section 6	60	60d	0d	29-Jan-22	29-Mar-22	02-May-26	30-Jun-26	1554	2
KTD.KD.2150	Prepare/submit Asset Date Deliverables for Section 7	60	60d	0d	28-Dec-23	25-Feb-24	02-May-26	30-Jun-26	856	2
KTD.KD.2160	Prepare/submit Asset Date Deliverables for Section 8	60	60d	0d	31-May-21	29-Jul-21	02-May-26	30-Jun-26	1797	2
KTD.KD.2170	Prepare/submit Asset Date Deliverables for Section 9	60	60d	0d	29-Jul-23	26-Sep-23	02-May-26	30-Jun-26	1008	2
KTD.KD.2190	Prepare/submit Asset Date Deliverables for Section 11	60	60d	0d	28-Dec-23	25-Feb-24	02-May-26	30-Jun-26	856	2
KTD.KD.2200	Prepare/submit Asset Date Deliverables for Section 12	60	60d	0d	28-Jul-24	25-Sep-24	02-May-26	30-Jun-26	643	2
KTD.KD.2210	Prepare/submit Asset Date Deliverables for Section 13	60	60d	0d	02-May-25	30-Jun-25	02-May-26	30-Jun-26	365	2
VALUE-ENGINEERING SHCEME DROP-OFF SCHEDULE		**833**			**31-Jul-20**	**10-Nov-22**	**31-Jul-20**	**10-Nov-22**	**0**	**2**
KTD.VE.1000	Review/prepare/submit VE scheme for permanent concrete segment for Pedestrian Subway SB-01	153	96d	0d	31-Jul-20	30-Dec-20	31-Jul-20	30-Dec-20	0	2
KTD.VE.1010	Review/prepare/submit VE scheme for alternative alignment for Pedestrian Subway SB-01	165	133d	0d	31-Jul-20	11-Jan-21	31-Jul-20	11-Jan-21	0	2
KTD.VE.1020	Review/prepare/submit VE scheme for piling arrangement for new pier of existing Bridge K73	431	426d	0d	01-Aug-20	05-Oct-21	01-Aug-20	05-Oct-21	0	2
KTD.VE.1030	Review/prepare/submit VE scheme for piling arrangement for abutment of Slip Road S14	832	752d	0d	01-Aug-20	10-Nov-22	01-Aug-20	10-Nov-22	0	2
KTD.VE.1040	Review/prepare/submit VE scheme for piling arrangement for lift shaft of KS10	627	766d	0d	01-Aug-20	19-Apr-22	01-Aug-20	19-Apr-22	0	2
KTD.VE.1050	Review/prepare/submit VE scheme for piling arrangement for lift shaft and staircase of LW-02	677	288d	0d	31-Jul-20	07-Jun-22	31-Jul-20	07-Jun-22	0	2



Milestone
Critical Milestone
Critical Work
Planned W...
Summary

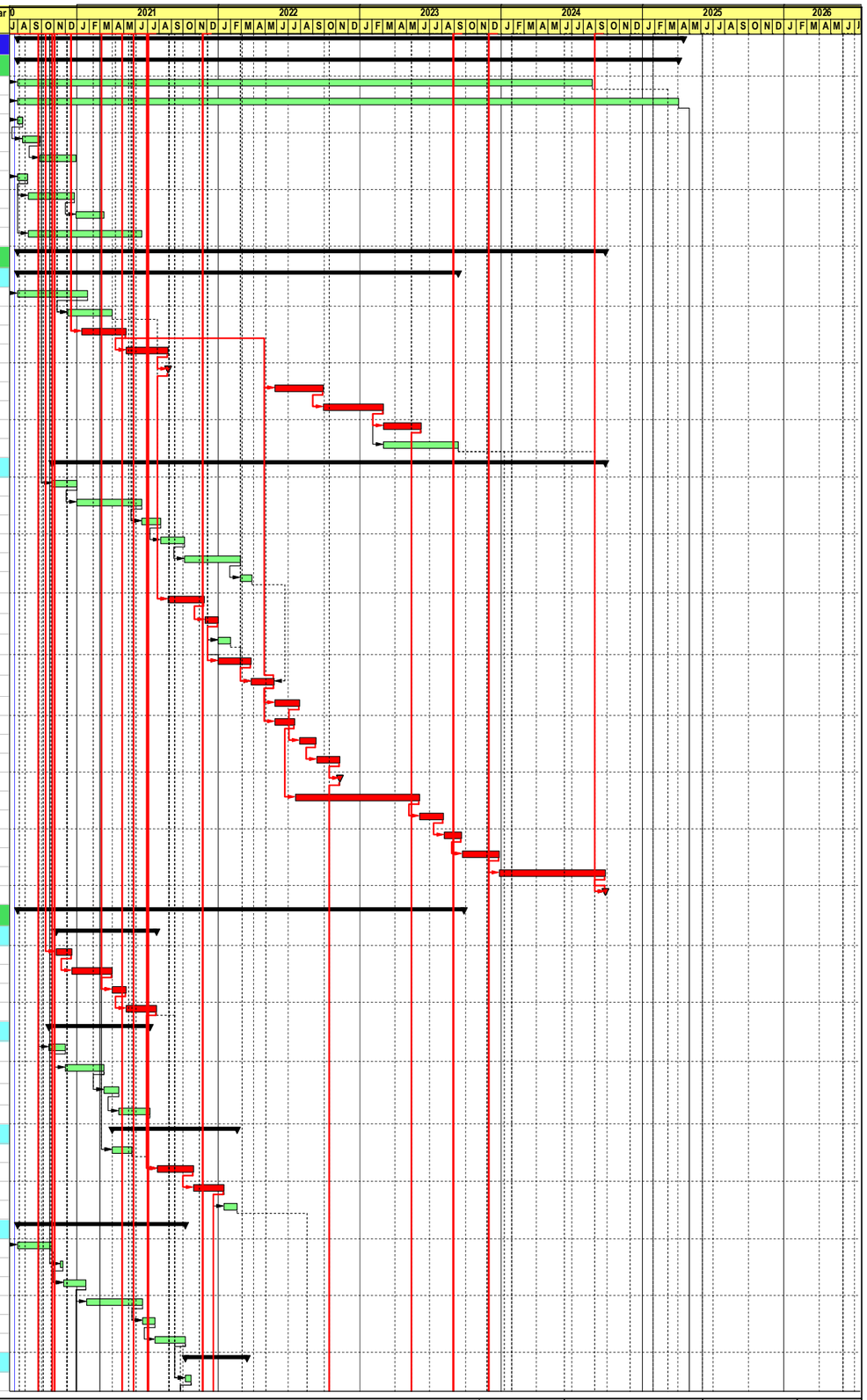
Build King – STEC Joint Venture

ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area

WORKS PROGRAMME

Date	Revision	Checked	Approv...
21-Aug-20	Revision 1	LC	GC
10-Oct-20	Revision 2	LC	GC
18-Nov-20	Revision 3	LC	GC

Activity ID	Activity Name	Dur (d)	Ori. Dur (d)	TRA (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
CIVIL AND STRUCTURAL WORKS		1720			31-Jul-20	15-Apr-25	31-Jul-20	30-Jun-26	441	
GENERAL AND PRELIMINARY WORKS		1708			31-Jul-20	03-Apr-25	01-Aug-20	30-Jun-26	453	
KTD.GW.1000	General and preliminary works (inclu site formation, site set-up, access, temp drain. sys, ground investigation and etc)	1200	1200d	0d	31-Jul-20	22-Aug-24	07-Jun-21	30-Jun-25	248	1
KTD.GW.1010	Construction, maintenance and removal of ICA, EVA, Crowd Dispersal Route and other temporary access	1383	1383d	0d	31-Jul-20	03-Apr-25	17-Oct-20	30-Jun-25	65	1
KTD.GW.1020	Prepare/submit site arrangement plan (inclu hoarding, project sign board and security arrangement)	13	13d	0d	31-Jul-20	12-Aug-20	01-Aug-20	13-Aug-20	1	2
KTD.GW.1030	Design/submit/approval site layout plan and Contractor's site accommodation using MiC method	44	30d	14d	13-Aug-20	25-Sep-20	14-Aug-20	26-Sep-20	1	2
KTD.GW.1040	Construct foundation and erect Contractor's site accommodation	76	62d	14d	26-Sep-20	29-Dec-20	03-Apr-26	30-Jun-26	1630	1
KTD.GW.1050	Tree Survey	27	27d	0d	31-Jul-20	26-Aug-20	01-Aug-20	27-Aug-20	1	2
KTD.GW.1055	Initial tree survey report and tree felling application	120	120d	0d	27-Aug-20	24-Dec-20	23-Dec-25	21-Apr-26	1944	2
KTD.GW.1060	Tree felling works	60	53d	7d	28-Dec-20	11-Mar-21	22-Apr-26	30-Jun-26	1572	1
KTD.GW.1070	Protection to retained trees and tree transplating works	234	208d	26d	27-Aug-20	17-Jun-21	25-Sep-25	30-Jun-26	1498	1
CONSTRUCTION OF PEDESTRIAN SUBWAY SB-01		1518			31-Jul-20	25-Sep-24	11-Dec-20	25-Sep-24	0	
PEDESTRIAN SUBWAY SB-01 UNDER PERE AND PROPOSED ROAD D1 USING CUT AND COVER METHOD		1138			31-Jul-20	11-Sep-23	29-Dec-20	27-Dec-23	107	
KTD.SB.1000	Liaison/coordinate with utility and service undertakings on diversion works (including CLP, DCS work and etc.)	180	180d	0d	31-Jul-20	26-Jan-21	29-Dec-20	26-Jun-21	151	2
KTD.SB.1010	Expose and install protect/support system for existing underground utilities and services (incl 132kV and 400kV cables)	91	84d	7d	07-Dec-20	01-Apr-21	06-May-21	23-Aug-21	115	1
KTD.SB.1020	Installation of sheet piles for South Shaft and construction of traffic deck at Proposed Road D1	89	75d	14d	12-Jan-21	07-May-21	12-Jan-21	07-May-21	0	1
KTD.SB.1030	Construction of road diversion for PERE westbound diversion (TTA Scheme B1)	89	75d	14d	08-May-21	23-Aug-21	08-May-21	23-Aug-21	0	1
KTD.SB.1040	Implementation of traffic diversion for PERE westbound	0	0d	0d		23-Aug-21		23-Aug-21	0	1
KTD.SB.1050	Installation of ELS and excavation for South Shaft at Proposed Road D1	104	132d	12d	26-May-22	28-Sep-22	26-May-22	28-Sep-22	0	1
KTD.SB.1060	Construction of RC structure from CH114.648 to CH67	126	114d	12d	29-Sep-22	03-Mar-23	29-Sep-22	03-Mar-23	0	1
KTD.SB.1070	Backfilling for South Shaft at Proposed Road D1	78	64d	14d	04-Mar-23	09-Jun-23	04-Mar-23	09-Jun-23	0	1
KTD.SB.1080	Installation of steelworks, ABWF, other facilities, lift and other E&M installation	156	130d	26d	04-Mar-23	11-Sep-23	21-Jun-23	27-Dec-23	87	1
PEDESTRIAN SUBWAY SB-01 UNDER PERE AND SA PO ROAD USING TRENCHLESS METHOD		1428			29-Oct-20	25-Sep-24	11-Dec-20	25-Sep-24	0	
KTD.SB.1090	Construction of road diversion of Sa Po Road (TTA Scheme A1, incl. carriageway and footpath)	52	46d	6d	29-Oct-20	30-Dec-20	11-Dec-20	16-Feb-21	37	1
KTD.SB.1100	Diversion of existing underground utilities and services (incl. DN1800 drain pipe, 11kV cables and etc.)	130	118d	12d	31-Dec-20	16-Jun-21	17-Feb-21	30-Jul-21	37	1
KTD.SB.1110	Installation of partial pipe pile and sheet pile of North Shaft and traffic deck at Sa Po Road	40	37d	3d	17-Jun-21	03-Aug-21	31-Jul-21	15-Sep-21	37	1
KTD.SB.1120	Construction of road diversion of Sa Po Road (TTA Scheme A2, inclu. carriageway and footpath)	52	46d	6d	04-Aug-21	05-Oct-21	16-Sep-21	18-Nov-21	37	1
KTD.SB.1130	Installation of Remaining ELS and excavation of North Shaft at Sa Po Road	116	104d	12d	06-Oct-21	25-Feb-22	19-Nov-21	11-Apr-22	37	1
KTD.SB.1140	Ground improvement works at North Shaft at Sa Po Road for RTBM drive-in	26	24d	2d	26-Feb-22	28-Mar-22	12-Apr-22	17-May-22	37	1
KTD.SB.1150	Installation of ELS and excavation for Intermediate Shaft at PERE westbound and tunneling setup	78	72d	6d	24-Aug-21	25-Nov-21	24-Aug-21	25-Nov-21	0	1
KTD.SB.1160	Ground improvement works at Intermediate Shaft at PERE westbound for break-in	27	24d	3d	27-Nov-21	30-Dec-21	27-Nov-21	30-Dec-21	0	1
KTD.SB.1170	Conduct seismic geophysical survey for PERE and other site investigation works	26	24d	2d	31-Dec-21	31-Jan-22	25-Feb-22	26-Mar-22	44	1
KTD.SB.1180	Mobilization, assembly and SAT of RTBM at Intermediate Shaft at PERE westbound	70	64d	6d	31-Dec-21	26-Mar-22	31-Dec-21	26-Mar-22	0	1
KTD.SB.1190	Launching of RTBM towards North Shaft at Sa Po Road from CH57 to CH17 (38m, 1.5m/day)	60	48d	12d	27-Mar-22	25-May-22	27-Mar-22	25-May-22	0	2
KTD.SB.1200	Dismantling of RTBM and removal from Intermediate Shaft at PERE westbound	54	52d	2d	26-May-22	29-Jul-22	26-May-22	29-Jul-22	0	1
KTD.SB.1210	Installation of horizontal pipe pile and excavation from CH14 to CH17 (74nos HPP, 270m3 exca)	43	37d	6d	26-May-22	16-Jul-22	26-May-22	16-Jul-22	0	1
KTD.SB.1220	Construction of RC structure at Intermediate Shaft at PERE westbound from CH57 to CH67	36	30d	6d	30-Jul-22	09-Sep-22	30-Jul-22	09-Sep-22	0	1
KTD.SB.1230	Backfilling for Intermediate Shaft at PERE westbound and reinstatement of existing road at PERE westbound	48	42d	6d	13-Sep-22	09-Nov-22	13-Sep-22	09-Nov-22	0	1
KTD.SB.1240	Remove TTA and resume traffic at PERE westbound	0	0d	0d		09-Nov-22		09-Nov-22	0	1
KTD.SB.1250	Construction of RC structure at North Shaft at Sa Po Road and from CH15 to CH57	260	236d	24d	18-Jul-22	03-Jun-23	18-Jul-22	03-Jun-23	0	1
KTD.SB.1260	Backfilling for North Shaft at Sa Po Road	52	46d	6d	05-Jun-23	05-Aug-23	05-Jun-23	05-Aug-23	0	1
KTD.SB.1270	Installation of ELS and excavation for remaining staircase and escalator trough structure	40	33d	6d	07-Aug-23	21-Sep-23	07-Aug-23	21-Sep-23	0	1
KTD.SB.1280	Construction of remaining staircase and escalator trough structure and backfilling	78	64d	14d	22-Sep-23	27-Dec-23	22-Sep-23	27-Dec-23	0	1
KTD.SB.1290	Installation of steelworks, ABWF, other facilities, lift, escalator and other E&M installation	221	200d	21d	28-Dec-23	25-Sep-24	28-Dec-23	25-Sep-24	0	1
KTD.SB.1300	Planned Completion of Pedestrian Subway SB-01 (Related to Section 12)	0	0d	0d		25-Sep-24		25-Sep-24	0	1
CONSTRUCTION OF ELEVATED WALKWAY LW-02		1153			31-Jul-20	26-Sep-23	07-Nov-20	26-Sep-23	0	
PIER 10		206			07-Nov-20	24-Jul-21	07-Nov-20	24-Jul-21	0	1
KTD.LW.1080	Pre-drilling works (2 nos, 1 rig)	35	33d	2d	07-Nov-20	17-Dec-20	07-Nov-20	17-Dec-20	0	1
KTD.LW.1090	Piling works for bored piles (2nos, 2200dia x 67m, 1 rig)	80	75d	5d	18-Dec-20	31-Mar-21	18-Dec-20	31-Mar-21	0	1
KTD.LW.1100	Installation of ELS and excavation for pile cap construction (273.5m3 exca, 1 team)	26	22d	4d	01-Apr-21	06-May-21	01-Apr-21	06-May-21	0	1
KTD.LW.1110	Construction of RC structure (pile cap & pier column) (149m3, 1 team)	65	53d	12d	07-May-21	24-Jul-21	07-May-21	24-Jul-21	0	1
PIER 9		206			20-Oct-20	07-Jul-21	07-Nov-20	24-Jul-21	15	1
KTD.LW.1000	Pre-drilling works (2 nos, 1 rig)	35	33d	2d	20-Oct-20	30-Nov-20	07-Nov-20	17-Dec-20	15	1
KTD.LW.1010	Piling works for bored piles (2nos, 2200dia x 67m, 1 rig)	80	75d	5d	01-Dec-20	10-Mar-21	18-Dec-20	31-Mar-21	15	1
KTD.LW.1020	Installation of ELS and excavation for pile cap construction (520.5m3 exca, 1 team)	26	22d	4d	11-Mar-21	17-Apr-21	01-Apr-21	06-May-21	15	1
KTD.LW.1030	Construction of RC structure (pile cap & pier column) (184m3, 1 team)	65	53d	12d	19-Apr-21	07-Jul-21	07-May-21	24-Jul-21	15	1
FOOTBRIDGE (PIER 9 TO PIER 10)		323			01-Apr-21	17-Feb-22	04-Jun-21	13-Sep-22	208	
KTD.LW.1040	Piling works for temp. pre-bored H-piles (12 nos, 610dia x 69m, 2 rigs)	52	42d	10d	01-Apr-21	22-May-21	04-Jun-21	25-Jul-21	64	2
KTD.LW.1050	Installation and erecting temp. working platform	78	52d	26d	26-Jul-21	27-Oct-21	26-Jul-21	27-Oct-21	0	1
KTD.LW.1060	Construction of RC bridge structure (1079m3, 4 teams)	65	50d	15d	28-Oct-21	14-Jan-22	28-Oct-21	14-Jan-22	0	1
KTD.LW.1070	Prestressing works	26	26d	0d	15-Jan-22	17-Feb-22	12-Aug-22	13-Sep-22	168	1
PIER 11		433			31-Jul-20	06-Oct-21	27-Feb-21	29-Mar-22	174	
KTD.LW.1120	Liaison/coordinate with adjacent project for TTA arrangement	90	90d	0d	31-Jul-20	28-Oct-20	27-Feb-21	27-May-21	211	2
KTD.LW.1130	Implementation of TTA	7	7d	0d	18-Nov-20	25-Nov-20	20-May-21	27-May-21	142	1
KTD.LW.1140	Pre-drilling works (4 nos, 1 rig)	48	46d	2d	26-Nov-20	23-Jan-21	28-May-21	24-Jul-21	142	1
KTD.LW.1150	Piling works for bored piles (4nos, 1800dia x 78m, 1 rig)	112	100d	12d	25-Jan-21	18-Jun-21	26-Jul-21	06-Dec-21	142	1
KTD.LW.1160	Installation of ELS and excavation for pile cap construction (319.9m3 exca, 1 team)	26	22d	4d	19-Jun-21	20-Jul-21	07-Dec-21	08-Jan-22	142	1
KTD.LW.1170	Construction of RC structure (pile cap & pier column) (138m3, 1 team)	65	53d	12d	21-Jul-21	06-Oct-21	10-Jan-22	29-Mar-22	142	1
FOOTBRIDGE (PIER 10 TO PIER 11)		129			07-Oct-21	14-Mar-22	30-Mar-22	13-Sep-22	147	1
KTD.LW.1180	Implementation of TTA for Concorde Road roundabout and erecting temp. working platform across carriageway	12	12d	0d	07-Oct-21	21-Oct-21	30-Mar-22	13-Apr-22	142	1



▽ Milestone
▼ Critical Milestone
Critical Work
Planned W...
Summary

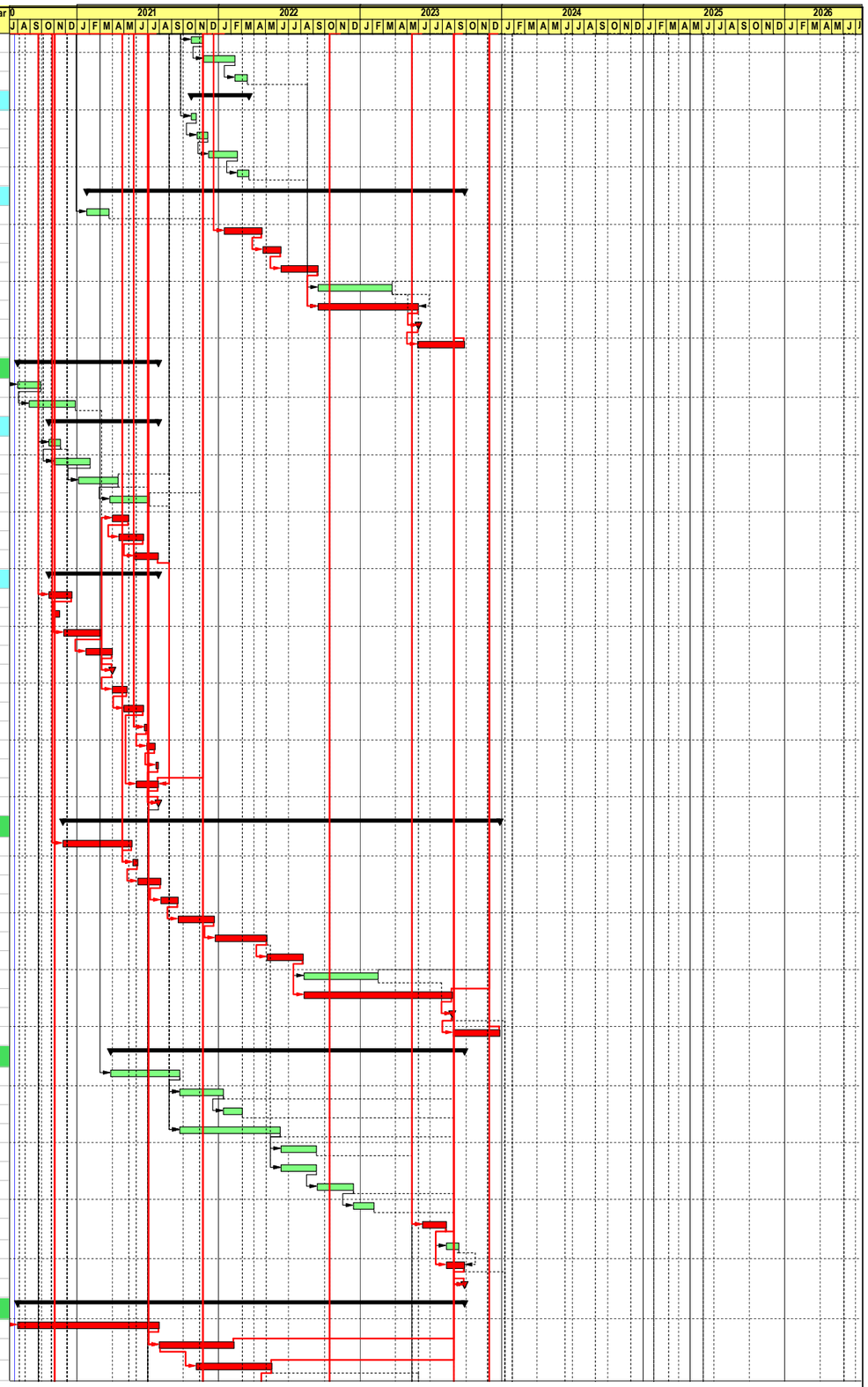
Build King – STEC Joint Venture

ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area

WORKS PROGRAMME

Date	Revision	Checked	Approv...
21-Aug-20	Revision 1	LC	GC
10-Oct-20	Revision 2	LC	GC
18-Nov-20	Revision 3	LC	GC

Activity ID	Activity Name	Dur (d)	Ori. Dur (d)	TRA (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.LW.1190	Erecting temp. working platform at roadside	26	24d	2d	22-Oct-21	20-Nov-21	23-Apr-22	25-May-22	147	1
KTD.LW.1200	Construction of RC bridge structure (434m3, 2 teams)	65	65d	0d	22-Nov-21	11-Feb-22	26-May-22	11-Aug-22	147	1
KTD.LW.1210	Prestressing works	26	26d	0d	12-Feb-22	14-Mar-22	12-Aug-22	13-Sep-22	147	1
FOOTBRIDGE (PIER 11 TO PIER 12)		122			22-Oct-21	19-Mar-22	14-Apr-22	13-Sep-22	142	1
KTD.LW.1220	Implementation of TTA for Concorde Road roundabout and erecting temp. working platform across carriageway	12	12d	0d	22-Oct-21	04-Nov-21	14-Apr-22	30-Apr-22	142	1
KTD.LW.1230	Erecting temp. working platform at roadside	26	24d	2d	05-Nov-21	04-Dec-21	03-May-22	02-Jun-22	142	1
KTD.LW.1240	Construction of RC bridge structure (311m3, 2 teams)	58	58d	0d	06-Dec-21	17-Feb-22	04-Jun-22	11-Aug-22	142	1
KTD.LW.1250	Prestressing works and bearing installation works	26	26d	0d	18-Feb-22	19-Mar-22	12-Aug-22	13-Sep-22	142	1
LIFT TOWER, STAIRCASE, SOFT LANDSCAPING & OTHER WORKS		787			25-Jan-21	26-Sep-23	17-Nov-21	26-Sep-23	0	1
KTD.LW.1260	Pre-drilling works (6 nos, 2 rig)	48	46d	2d	25-Jan-21	24-Mar-21	17-Nov-21	14-Jan-22	237	1
KTD.LW.1270	Piling works for pre-bored H-piles for PC1, PC2, PC3 and PC4 (19 nos, 610dia x 70m, 2 rigs)	78	72d	6d	15-Jan-22	23-Apr-22	15-Jan-22	23-Apr-22	0	1
KTD.LW.1280	Installation of ELS and excavation for pile caps construction (PC1, PC2, PC3 and PC4, 379.1m3 exca, 1 team)	38	34d	4d	25-Apr-22	10-Jun-22	25-Apr-22	10-Jun-22	0	1
KTD.LW.1290	Construction of RC structures (inclu. pile caps, pier column, lift shaft, staircase, etc.)	78	64d	14d	11-Jun-22	13-Sep-22	11-Jun-22	13-Sep-22	0	1
KTD.LW.1300	Lift and other E&M installation, testing and commissioning	156	144d	12d	14-Sep-22	23-Mar-23	16-Nov-22	30-May-23	52	1
KTD.LW.1310	Construction of roof, planter, landscape softworks, other facilities and ABWF works for whole walkway	208	182d	26d	14-Sep-22	30-May-23	14-Sep-22	30-May-23	0	1
KTD.LW.1320	Planned Completion of Landscaped Elevated Walkway LW-02 (Related to Section 1)	0	0d	0d		30-May-23		30-May-23	0	1
KTD.LW.1330	Advance Completion of Landscaped Elevated Walkway LW-02 to Specific Contract Completion Date (Section 1)	101	101d	0d	30-May-23	26-Sep-23	30-May-23	26-Sep-23	0	1
CONSTRUCTION OF BOX CULVERT B1		364			31-Jul-20	29-Jul-21	20-Oct-20	29-Jul-21	0	
KTD.BC.1000	Prepare/submission of temporary EVA diversion scheme with SCL	60	60d	0d	31-Jul-20	28-Sep-20	02-Nov-20	31-Dec-20	94	2
KTD.BC.1010	Consult/liaison/vetting/approval of temporary EVA diversion scheme with SCL	120	120d	0d	30-Aug-20	27-Dec-20	02-Dec-20	31-Mar-21	94	2
BOX CULVERT B1 (CHB1 364.584 TO CHB1 168.00)		225			20-Oct-20	29-Jul-21	13-Nov-20	29-Jul-21	0	
KTD.BC.1020	Installation of ELS and excavation for CHB1 364.584 to CHB1 348.00 (24m ELS, 523.8m3 exca, 2 team)	26	24d	2d	20-Oct-20	19-Nov-20	13-Nov-20	12-Dec-20	20	1
KTD.BC.1030	Installation of ELS and excavation for CHB1 348.00 to CHB1 216.00 (12718m3, 2 teams)	78	72d	6d	02-Nov-20	03-Feb-21	25-Nov-20	02-Mar-21	20	1
KTD.BC.1040	Construction of RC box culvert structure (1435m3, 4 teams)	78	74d	2d	05-Jan-21	16-Apr-21	28-Jan-21	11-May-21	20	1
KTD.BC.1050	Backfilling from CHB1 364.584 to CHB1 216.00 (10043m3, 4 teams)	78	74d	2d	25-Mar-21	06-Jul-21	26-Apr-21	29-Jul-21	20	1
KTD.BC.1060	Excavation for CHB1 216.00 to CHB1 168.00 by ELS/open-cut/other accepted method (4600m3, 2 teams)	32	32d	7d	01-Apr-21	13-May-21	01-Apr-21	13-May-21	0	1
KTD.BC.1070	Construction of RC box culvert structure from CHB1 216.00 to CHB1 168.00 (370m3, 3 teams)	52	48d	4d	19-Apr-21	21-Jun-21	19-Apr-21	21-Jun-21	0	1
KTD.BC.1080	Backfilling from CHB1 216.00 to CHB1 168.00 (3800m3, 4 teams)	52	48d	4d	28-May-21	29-Jul-21	28-May-21	29-Jul-21	0	1
BOX CULVERT B1 (CHB1 168.00 TO CH. 89.123)		225			20-Oct-20	29-Jul-21	20-Oct-20	29-Jul-21	0	1
KTD.BC.1090	Installation of ELS and excavation for CHB1 115.392 to CHB1 168.00 (114m ELS, 3400m3 exca, 2 teams)	51	33d	6d	20-Oct-20	18-Dec-20	20-Oct-20	18-Dec-20	0	1
KTD.BC.1095	Encounter CLP cables at CHB1 143.3 to CHB1 131.125 and removal by CLP	12	12d	0d	03-Nov-20	16-Nov-20	03-Nov-20	16-Nov-20	0	1
KTD.BC.1100	Construction of RC box culvert structure for CHB1 115.392 to CHB1 168.00 (434m3, 2 teams)	78	78d	0d	28-Nov-20	05-Mar-21	28-Nov-20	05-Mar-21	0	1
KTD.BC.1110	Backfilling from CHB1 168.00 to CHB1 115.392 and construct temporary diversion EVA with facilities (2374m3, 2 teams)	52	46d	6d	23-Jan-21	31-Mar-21	23-Jan-21	31-Mar-21	0	1
KTD.BC.1120	Traffic diversion for MTRC EVA of SCL Station and SUA	0	0d	0d		31-Mar-21		31-Mar-21	0	1
KTD.BC.1130	Installation of ELS and excavation for CHB1 115.392 to CHB1 89.123 (90m ELS, 1860m3 exca, 2 teams)	29	26d	3d	01-Apr-21	10-May-21	01-Apr-21	10-May-21	0	1
KTD.BC.1140	Construction of RC box culbert structure for CBB1 115.392 to CHB1 89.123 (236m3, 2 teams)	42	39d	3d	30-Apr-21	21-Jun-21	30-Apr-21	21-Jun-21	0	1
KTD.BC.1150	Temporary drain. diversion (inclu temporary connection works and breakthrough at upstream)	7	6d	1d	22-Jun-21	29-Jun-21	22-Jun-21	29-Jun-21	0	1
KTD.BC.1160	Construct the remaining RC structure within existing box culvert and abandon the existing box culvert	18	18d	0d	30-Jun-21	21-Jul-21	30-Jun-21	21-Jul-21	0	1
KTD.BC.1170	Permanent drain. diversion (inclu connection works at upstream)	7	6d	1d	22-Jul-21	29-Jul-21	22-Jul-21	29-Jul-21	0	1
KTD.BC.1180	Backfilling from CHB1 115.392 to CHB1 89.123 (1050m3, 2 teams)	49	48d	4d	01-Jun-21	29-Jul-21	01-Jun-21	29-Jul-21	0	1
KTD.BC.1190	Planned Completion of Box Culvert B1 (Related to Section 8)	0	0d	0d		29-Jul-21		29-Jul-21	0	1
MODIFICATION OF EXISTING SUBWAY KS10		1129			24-Nov-20	27-Dec-23	24-Nov-20	27-Dec-23	0	
KTD.MS.0000	Liaison/coordinate with HyD structure/HyD lighting/EMSD and other utility and service undertakings	180	180d	0d	24-Nov-20	22-May-21	24-Nov-20	22-May-21	0	2
KTD.MS.1010	Pre-drilling works (1 no, 1 rig)	12	10d	2d	24-May-21	05-Jun-21	24-May-21	05-Jun-21	0	1
KTD.MS.1020	Piling works for pre-bored H-piles (4 nos, 610dia x 75m, 1 rig)	48	42d	6d	07-Jun-21	03-Aug-21	07-Jun-21	03-Aug-21	0	1
KTD.MS.1030	Installation of ELS for demolition of existing str. & construction of entrance at Road D1 (77m ELS, 900m3 exca, 1 teams)	39	33d	6d	04-Aug-21	17-Sep-21	04-Aug-21	17-Sep-21	0	1
KTD.MS.1035	Demolition of existing subway structures (inclu. ramp and staircase)	78	64d	14d	18-Sep-21	21-Dec-21	18-Sep-21	21-Dec-21	0	1
KTD.MS.1040	Construction of RC structures (inclu. lift shaft, staircase, pump house and etc.) (365m3, 1 team)	104	92d	12d	22-Dec-21	04-May-22	22-Dec-21	04-May-22	0	1
KTD.MS.1045	Backfilling of ELS to ground level	78	64	14d	05-May-22	06-Aug-22	05-May-22	06-Aug-22	0	1
KTD.MS.1050	Lift and other E&M installation, testing and commissioning	156	156d	0d	08-Aug-22	16-Feb-23	17-Feb-23	26-Aug-23	156	1
KTD.MS.1060	Construction of roof, steelworks, other facilities and ABWF works	312	300d	12d	08-Aug-22	26-Aug-23	08-Aug-22	26-Aug-23	0	1
KTD.MS.1070	Planned Completion of modification of existing Subway KS10 (Related to Section 3)	0	0d	0d		26-Aug-23		26-Aug-23	0	1
KTD.MS.1080	Advance Completion of modification of existing Subway KS10 to Specific Contract Completion Date (Section 3)	100	178d	0d	28-Aug-23	27-Dec-23	28-Aug-23	27-Dec-23	0	1
CONSTRUCTION OF DISTRICT COOLING SYSTEM WORKS (SUBJECTED TO EXCISION)		914			27-Mar-21	26-Sep-23	22-Nov-21	26-Sep-23	0	
KTD.DCS.1000	Liaison/coordinate with utility and service undertakings on connection works of DCS works	180	180d	0d	27-Mar-21	22-Sep-21	22-Nov-21	20-May-22	240	2
KTD.DCS.1010	Installation of ELS and excavation and construction of DCS pipes from CH80 to CH145 (2 teams)	91	79d	12d	23-Sep-21	12-Jan-22	24-Apr-23	11-Aug-23	465	1
KTD.DCS.1020	Backfilling for CH80 to CH145 (780m3, 2 teams)	39	33d	6d	13-Jan-22	02-Mar-22	12-Aug-23	26-Sep-23	465	1
KTD.DCS.1030	Installation of ELS and excavation and construction of DCS pipes from CH170 to CH334 (2 teams)	208	194d	14d	23-Sep-21	09-Jun-22	21-May-22	01-Feb-23	192	1
KTD.DCS.1040	Backfilling for CH170 to CH334 (1900m3, 2 teams)	78	72d	6d	10-Jun-22	09-Sep-22	04-Mar-23	09-Jun-23	218	1
KTD.DCS.1050	Installation of ELS and excavation of temporary pits for construction of DCS works from CH145 to CH170 (1 team)	78	66d	12d	10-Jun-22	09-Sep-22	02-Feb-23	09-May-23	192	1
KTD.DCS.1060	Construction of chilled water pipes from CH145 to CH170 by trenchless method (inclu DAV and washout pit, 1 team)	78	64d	14d	13-Sep-22	14-Dec-22	10-May-23	11-Aug-23	192	1
KTD.DCS.1070	Backfilling for temporary pits (900m3, 2 teams)	39	33d	6d	15-Dec-22	04-Feb-23	12-Aug-23	26-Sep-23	192	1
KTD.DCS.1080	Installation of ELS and excavation and construction of DCS works from CH0 to CH80 (2 teams)	52	40d	12d	10-Jun-23	11-Aug-23	10-Jun-23	11-Aug-23	0	1
KTD.DCS.1090	T&C of the installed DCS pipes before connection to existing DCS system	26	26d	0d	12-Aug-23	11-Sep-23	28-Aug-23	26-Sep-23	13	1
KTD.DCS.1100	Backfilling for CH0 to CH80 (960m3, 2 teams)	39	33d	6d	12-Aug-23	26-Sep-23	12-Aug-23	26-Sep-23	0	1
KTD.DCS.1110	Planned Completion of DCS works within Parts 1 and 1A (Related to Section 9)	0	0d	0d		26-Sep-23		26-Sep-23	0	1
RENOVATION OF EXISTING SUBWAYS KS9 AND KS32		1153			31-Jul-20	26-Sep-23	31-Jul-20	26-Sep-23	0	
KTD.RS.1000	Liasion with UAP project and relevant departments for possession approval/consent	365	365d	0d	31-Jul-20	30-Jul-21	31-Jul-20	30-Jul-21	0	2
KTD.RS.1010	Construction of shelter for subways KS9 and KS32	156	130d	26d	31-Jul-21	08-Feb-22	31-Jul-21	08-Feb-22	0	1
KTD.RS.1020	Construction of steelworks, other facilities, E&M installation and ABWF works for KS9 and KS32	156	142d	124d	03-Nov-21	17-May-22	03-Nov-21	17-May-22	0	1



Milestone
Critical Milestone
Critical Work
Planned W...
Summary

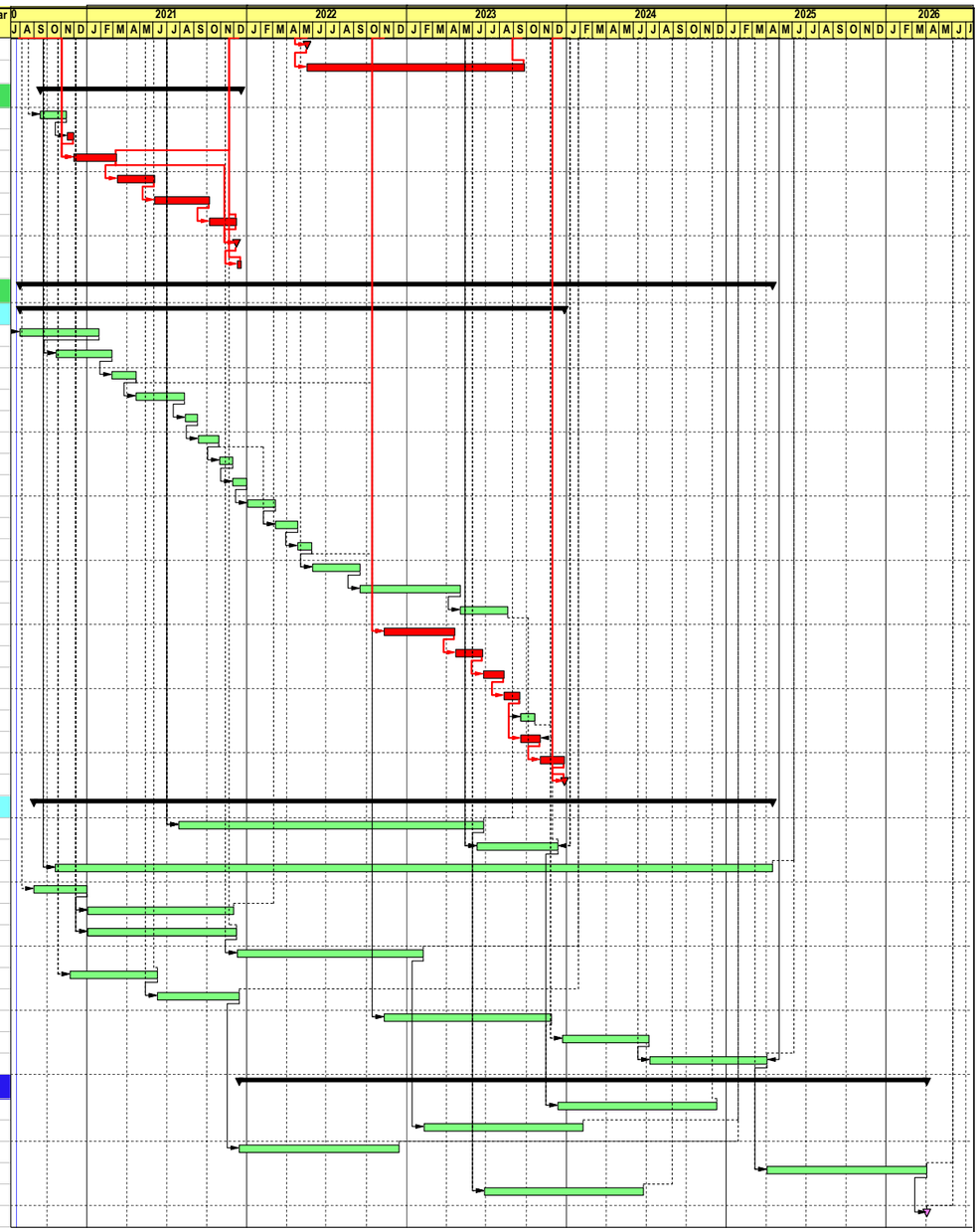
Build King – STEC Joint Venture

ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area

WORKS PROGRAMME

Date	Revision	Checked	Approv...
21-Aug-20	Revision 1	LC	GC
10-Oct-20	Revision 2	LC	GC
18-Nov-20	Revision 3	LC	GC

Activity ID	Activity Name	Dur (d)	Ori. Dur (d)	TRA (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.RS.1030	Planned Completion of renovation of existing Subways KS9 and KS32 (Related to Section 1)	0	0d	0d		17-May-22		17-May-22	0	1
KTD.RS.1040	Advance Completion of renovation of existing Subways KS9 and KS32 to Specific Contract Completion Date (Section 1)	406	406d	0d	18-May-22	26-Sep-23	18-May-22	26-Sep-23	0	1
DIVERSION OF EXISTING RISING MAIN AND DEMOLITION OF EXISTING STRUCTURES AT SITE 2C2 & 2C3		458			16-Sep-20	17-Dec-21	17-Sep-20	17-Dec-21	0	
KTD.RM.1000	Liasion with relevant departments for removal of abandoned motorcycles under existing structures at Site 2C2 and 2C3	60	60d	0d	16-Sep-20	14-Nov-20	17-Sep-20	15-Nov-20	1	2
KTD.RM.1001	Removal of abandoned motorcycles and clearance for demolition works	14	14d	2d	16-Nov-20	01-Dec-20	16-Nov-20	01-Dec-20	0	1
KTD.RM.1005	Demolition of existing structures at Site 2C2 and 2C3	78	66d	12d	02-Dec-20	09-Mar-21	02-Dec-20	09-Mar-21	0	1
KTD.RM.1010	Installation of ELS and excavate for construction of twin rising main from CH0 to CH184 (400m ELS, 4059m3 exca, 2 teams)	65	53d	12d	10-Mar-21	03-Jun-21	10-Mar-21	03-Jun-21	0	1
KTD.RM.1020	Construction of twin rising main from CH0 to CH184 and connect to existing sewage rising main	104	98d	6d	04-Jun-21	07-Oct-21	04-Jun-21	07-Oct-21	0	1
KTD.RM.1030	Backfilling works and abandon the existing sewage rising main	52	46d	6d	08-Oct-21	08-Dec-21	08-Oct-21	08-Dec-21	0	1
KTD.RM.1040	Planned Completion of diversion and demolition of existing structures at Site 2C2 and 2C3 (Related to Section 5)	0	0d	0d		08-Dec-21		08-Dec-21	0	1
KTD.RM.1050	Advance Completion of diversion and demolition works to Specific Contract Completion Date (Section 5)	8	8d	0d	09-Dec-21	17-Dec-21	09-Dec-21	17-Dec-21	0	1
CONSTRUCTION OF ROAD WORKS		1720			31-Jul-20	15-Apr-25	12-Sep-20	30-Jun-25	76	
CONSTRUCTION OF SLIP ROAD S14		1245			31-Jul-20	27-Dec-23	14-Oct-20	27-Dec-23	0	
KTD.RW.0000	Liaison/coordinate with utility and service undertakings on diversion works (including CLP, DCS work and etc.)	180	180d	0d	31-Jul-20	26-Jan-21	14-Oct-20	11-Apr-21	75	2
KTD.RW.1000	Expose and install protect/support system for existing underground utilities and services (incl 132kV and 400kV cables)	104	98d	6d	21-Oct-20	26-Feb-21	04-Jan-21	17-May-21	60	1
KTD.RW.1010	Pre-drilling works for all pile caps PC1 to PC7 (9 nos, 1 rig)	40	30d	10d	27-Feb-21	22-Apr-21	18-May-21	06-Jul-21	60	1
KTD.RW.1020	Piling works of pre-bored H-piles (14 nos, 610dia x 70m, 1 rig)	91	85d	6d	23-Apr-21	11-Aug-21	07-Jul-21	23-Oct-21	60	1
KTD.RW.1030	Installation of ELS and excavation and construction for pile cap PC1 (60m3 exca, 30m3 conc, 1 team)	26	24d	2d	12-Aug-21	10-Sep-21	25-Oct-21	23-Nov-21	60	1
KTD.RW.1040	Construction of temporary supporting system for existing bridge K73	39	34d	5d	11-Sep-21	29-Oct-21	24-Nov-21	11-Jan-22	60	1
KTD.RW.1050	Demolition of existing bearing wall	26	24d	2d	30-Oct-21	29-Nov-21	12-Jan-22	14-Feb-22	60	1
KTD.RW.1060	Installation of ELS and excavation and construction for pile cap PC2 (60m3 exca, 30m3 conc, 1 team)	26	24d	2d	30-Nov-21	31-Dec-21	15-Feb-22	16-Mar-22	60	1
KTD.RW.1070	Construction of remaining foundation and pier structures (incl. columns, portal beams and etc.) (169m3, 1 team)	52	48d	4d	03-Jan-22	07-Mar-22	17-Mar-22	23-May-22	60	1
KTD.RW.1080	Construction of cantilever slab extended from ext. bridge K73 (150m3, 1 team)	39	34d	5d	08-Mar-22	26-Apr-22	24-May-22	09-Jul-22	60	1
KTD.RW.1090	Backfilling for pile caps (PC1 and PC2)	26	24d	2d	27-Apr-22	28-May-22	11-Jul-22	09-Aug-22	60	1
KTD.RW.1100	Installation of ELS and excavation for Retaining Wall S14 (Bay5-12, 3600m3 exca, 2 team)	90	78d	12d	30-May-22	15-Sep-22	10-Aug-22	26-Nov-22	60	1
KTD.RW.1110	Construction of Retaining Wall S14 (Bay5-12, 800m3, 2 teams)	184	172d	12d	16-Sep-22	03-May-23	28-Nov-22	15-Jul-23	60	1
KTD.RW.1120	Backfilling for Retaining Wall S14 (Bay8-12, 1100m3, 2 teams)	90	78d	12d	04-May-23	19-Aug-23	17-Jul-23	01-Nov-23	60	1
KTD.RW.1130	Piling works for bored piles (20 nos, 1200dia x 70m, 2 rigs)	130	116d	14d	10-Nov-22	21-Apr-23	10-Nov-22	21-Apr-23	0	1
KTD.RW.1140	Installation of ELS and excavation and construction for pile caps (P3-P7,1110m3 exca, 800m3 conc, 2 teams)	52	48d	4d	22-Apr-23	24-Jun-23	22-Apr-23	24-Jun-23	0	1
KTD.RW.1150	Construction of Retaining Wall S14 (Bay1-4, 460m3, 2 teams)	39	21d	2d	26-Jun-23	10-Aug-23	26-Jun-23	10-Aug-23	0	1
KTD.RW.1160	Construction of bridge S14 decking structures (320m3, 1 teams)	32	26d	6d	11-Aug-23	16-Sep-23	11-Aug-23	16-Sep-23	0	1
KTD.RW.1170	Prestressing works and bearing installation works	26	24d	2d	18-Sep-23	19-Oct-23	29-Sep-23	01-Nov-23	10	1
KTD.RW.1180	Backfilling for Retaining Wall S14 (Bay 1-7, 1800m3, 2 teams)	36	32d	4d	18-Sep-23	01-Nov-23	18-Sep-23	01-Nov-23	0	1
KTD.RW.1190	Construction of road pavement, road marking, street and other facilities	46	39d	7d	02-Nov-23	27-Dec-23	02-Nov-23	27-Dec-23	0	1
KTD.RW.1200	Planned Completion of Slip Road S14 (Related to Section 3)	0	0d	0d		27-Dec-23		27-Dec-23	0	1
CONSTRUCTION OF ROADS D1, L9, L16, PEDESTRIAN STREETS AND OPEN SPACES		1688			01-Sep-20	15-Apr-25	12-Sep-20	30-Jun-25	76	
KTD.RW.1220	Construct roadwork, UUs/services & landscape softworks within Part 1 (incl Road L9 and part of Road L16)	563	542d	21d	30-Jul-21	26-Jun-23	02-Nov-21	26-Sep-23	78	1
KTD.RW.1230	Construct roadwork, UUs/services & landscape softworks within Part 1A (incl Sa Po Road, pedestrian street and Road D1)	153	132d	21d	10-Jun-23	11-Dec-23	26-Jun-23	27-Dec-23	12	1
KTD.RW.1240	Construct underground utilities/services within Parts 1B, 6A and 7 and remaining works of all Parts	1321	1300d	21d	20-Oct-20	15-Apr-25	02-Jan-21	30-Jun-25	60	1
KTD.RW.1245	Liasion/coordinate with CLP for new 132kV and 11kV cable laying at Road L16, Part 3 and Crowd Dispersal Route	122	122d	0d	01-Sep-20	31-Dec-20	12-Sep-20	11-Jan-21	11	2
KTD.RW.1250	Construct roadwork and UUs/services within Parts 2 and 10 (incl Crowd Dispersal Route)	270	249d	21d	02-Jan-21	02-Dec-21	05-May-21	29-Mar-22	94	1
KTD.RW.1260	Construct underground utilities/services within Part 3	275	254d	21d	02-Jan-21	08-Dec-21	12-Jan-21	17-Dec-21	8	1
KTD.RW.1270	Construct roadwork and landscape softworks within Part 3 (incl pedestrian streets)	342	321d	21d	09-Dec-21	08-Feb-23	29-Dec-22	24-Feb-24	310	1
KTD.RW.1280	Construct underground utilities/services within Part 4	156	135d	21d	23-Nov-20	09-Jun-21	12-Dec-20	30-Jun-21	17	1
KTD.RW.1290	Construct roadwork and landscape softworks within Part 4 (incl pedestrian street)	156	135d	21d	10-Jun-21	14-Dec-21	17-Aug-23	24-Feb-24	647	1
KTD.RW.1300	Construct roadwork, underground utilities/services within Part 5	312	291d	21d	10-Nov-22	28-Nov-23	07-Dec-22	27-Dec-23	23	1
KTD.RW.1310	Liasion with developer of the sites 2A4, 2A5(B) and 2A10 and construction of drainage and sewage works within Part 6	156	135d	21d	23-Dec-23	08-Jul-24	15-Mar-24	23-Sep-24	65	1
KTD.RW.1320	Construct roadwork, remaining UUs/services and landscape softworks within Part 6 (incl remaining Road L16)	222	201d	21d	09-Jul-24	03-Apr-25	24-Sep-24	30-Jun-25	65	1
PROJECT ESTABLISHMENT WORKS		1571			15-Dec-21	03-Apr-26	27-Sep-23	30-Jun-26	88	2
KTD.EW.1000	Establishment works for all landscape softworks (except Parts 3, 4 and 6)	365	365d	0d	12-Dec-23	10-Dec-24	28-Dec-23	26-Dec-24	16	2
KTD.EW.1010	Establishment works for landscape softworks within Part 3 (Subj to excision within 416 days)	365	365d	0d	09-Feb-23	08-Feb-24	26-Feb-24	24-Feb-25	382	2
KTD.EW.1020	Establishment works for landscape softworks within Part 4 (Subj to excision within 244 days)	365	365d	0d	15-Dec-21	14-Dec-22	26-Feb-24	24-Feb-25	803	2
KTD.EW.1030	Establishment works for landscape softworks within Part 6	365	365d	0d	04-Apr-25	03-Apr-26	01-Jul-25	30-Jun-26	88	2
KTD.EW.1040	Establishment works for landscape softworks under Section 1	365	365d	0d	27-Jun-23	25-Jun-24	27-Sep-23	25-Sep-24	92	2
KTD.EW.1050	Planned Contract Completion Date	0	0d	0d		03-Apr-26		30-Jun-26	88	2



Milestone | Planned W...
Critical Milestone | Summary
Critical Work

Build King – STEC Joint Venture

ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area

WORKS PROGRAMME

Date	Revision	Checked	Approv...
21-Aug-20	Revision 1	LC	GC
10-Oct-20	Revision 2	LC	GC
18-Nov-20	Revision 3	LC	GC

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 March 2023

March 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 Weekly Site Inspection	3 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	4
5	6	7	8	9 Weekly Site Inspection 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	10	11
12	13	14	15 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	16 Weekly Site Inspection	17	18
19	20	21 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	22	23 Weekly Site Inspection	24	25
26	27 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	28	29	30 Weekly Site Inspection + SSMC meeting	31	

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 April 2023

April 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3
2	3	4	5	6 Weekly Site Inspection 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	7	8
9	10	11	12 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	13 Weekly Site Inspection	14	15
16	17	18 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	19	20 Weekly Site Inspection	21	22
23	24 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	25	26	27 Weekly Site Inspection + SSMC meeting	28	29 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3
30						

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

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

TISCH Environmental

TSP MFC

Total Suspended Particulate, Mass Flow Controlled

MFC **TSP**

Ambient Air Sampler

- **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**

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.

TISCH Environmental

www.tisch-env.com

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

TISCH Environmental

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, 1.09M^3M-1.68M^3M
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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TISCH Environmental

Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023022101 Date of calibration : 21/02/2023

Model no : Sky Tower Sampler : TE-5170X
Serial Number : 4687

Calibration Data

Ambient barometric pressure, Pa = 766.6 (mmHg) Ambient temperature, Ta = 292.75 (deg K)

Calibration Orifice

Model = TE-5025A Qstd Slope, m = 2.06418

Serial No. = 0006 Qstd Intercept, b = -0.03593

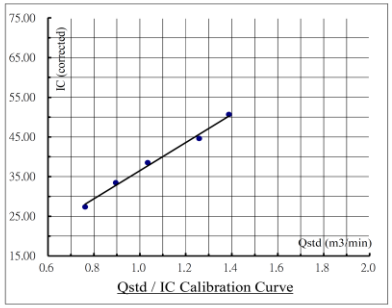
Calibration Due Date: 16/05/2023 Qstd Corr. coeff., r = 0.99993

Calibration Curve

Plate No.	H_2O (in)	Qstd (m^3 / min)	I (chart)	IC (corrected)
18	7.80	1.388	50.0	50.67
13	6.40	1.259	44.0	44.59
10	4.30	1.035	38.0	38.51
7	3.20	0.896	33.0	33.44
5	2.30	0.762	27.0	27.36

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(I) (Sqrt ((Pav / 760) (298 / Tav))) - b1]	35.474	1.0277	0.9957



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 : 21/02/2023 Checked by : 21/02/2023

Name : (Ben Poon) Name : (Tommy Wong)

Form No. INS-HVS-CAL dd 16 01 2020

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023022104 Date of calibration : 21/02/2023

Model no : Ng Wah Catholic Secondary School Sampler : TE-5170X
Serial Number : 4360

Calibration Data

Ambient barometric pressure, Pa = 766.6 (mmHg) Ambient temperature, Ta = 292.75 (deg K)

Calibration Orifice

Model = TE-5025A Qstd Slope, m = 2.06418

Serial No. = 0006 Qstd Intercept, b = -0.03593

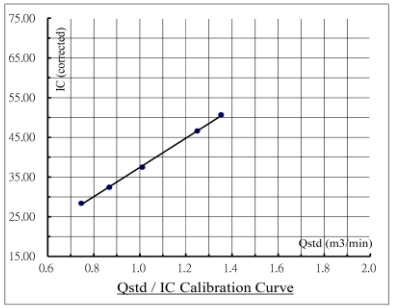
Calibration Due Date: 16/05/2023 Qstd Corr. coeff., r = 0.99993

Calibration Curve

Plate No.	H_2O (in)	Qstd (m^3 / min)	I (chart)	IC (corrected)
18	7.40	1.353	50.0	50.67
13	6.30	1.250	46.0	46.61
10	4.10	1.011	37.0	37.49
7	3.00	0.868	32.0	32.43
5	2.20	0.746	28.0	28.37

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(I) (Sqrt ((Pav / 760) (298 / Tav))) - b1]	36.892	0.5397	0.9996



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 : 21/02/2023 Checked by : 21/02/2023

Name : (Ben Poon) Name : (Tommy Wong)

Form No. INS-HVS-CAL dd 16 01 2020

Calibration Certificate of HVS used for performance check of Dust Meter	Orifice Transfer Standard Certification Worksheet TE-5025A

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2022061301 Date of calibration : 20/06/2022

Model no : GS2310 Serial number : 10346

Calibration Data

Ambient barometric pressure, Pa = 753.1 (mmHg) Ambient temperature, Ta = 303.35 (deg K)

Calibration Orifice

Model = TE-5025A Qstd Slope, m = 2.06418

Serial No. = 0006 Qstd Intercept, b = -0.03593

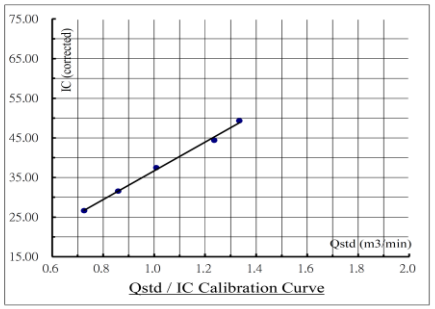
Calibration Due Date: 16/05/2023 Qstd Corr. coeff., r = 0.99993

Calibration Curve

Plate No.	H_2O (in)	Qstd (m^3 / min)	I (chart)	IC (corrected)
18	7.60	1.335	50.0	49.33
13	6.50	1.236	45.0	44.40
10	4.30	1.009	38.0	37.49
7	3.10	0.859	32.0	31.57
5	2.20	0.726	27.0	26.64

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(I) (Sqrt ((Pav / 760) (298 / Tav))) - b1]	36.268	0.4215	0.9982



Qstd / IC Calibration Curve

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 : 20/06/2022 Checked by : 20/06/2022

Name : (Ben Poon) Name : (Tommy Wong)

Form No. INS-HVS-CAL dd 16 01 2020

TISCH Environmental

RECALIBRATION DUE DATE:
May 16, 2023

Certificate of Calibration

Calibration Certification Information

Cal. Date: May 16, 2022 Rootsmeter S/N: 438320 Ta: 296 °K

Operator: Jim Tisch Pa: 746.8 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	1.4050	3.2	2.00
2	3	4	1	1.0020	6.4	4.00
3	5	6	1	0.8930	7.9	5.00
4	7	8	1	0.8550	8.7	5.50
5	9	10	1	0.7030	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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9850	0.7011	1.4066	0.9957	0.7087	0.8904
0.9807	0.9788	1.9892	0.9914	0.9895	1.2592
0.9788	1.0960	2.2240	0.9894	1.1080	1.4078
0.9777	1.1435	2.3325	0.9883	1.1560	1.4765
0.9723	1.3830	2.8131	0.9829	1.3981	1.7807
QSTD	m=	2.06418	QA	m=	1.29255
	b=	-0.03593		b=	-0.02274
	r=	0.99993		r=	0.99993

Calculations

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

For subsequent flow rate calculations:

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

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

Key

ΔH: calibrator manometer reading (in H2O)

ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (°K)

Pa: actual barometric pressure (mm Hg)

b: intercept

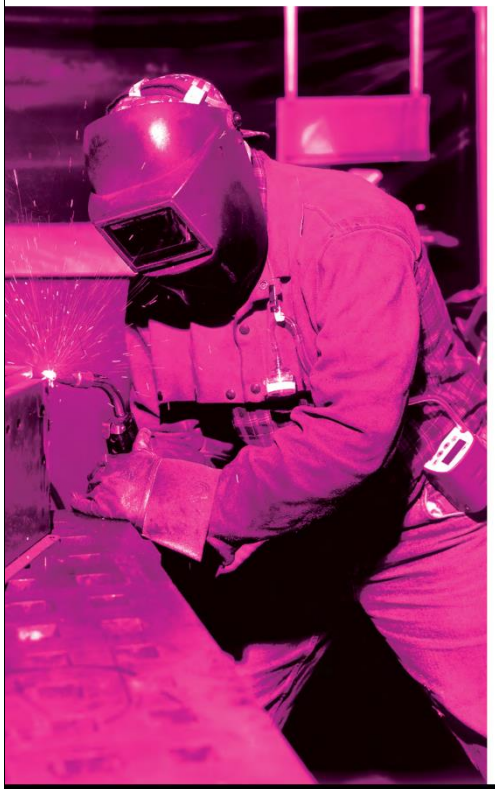
m: slope

RECALIBRATION

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

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

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 AM510 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 AM510
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)

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

ACCREDITED Certificate #3815.01

Calibration Certificate No.: CC0482208

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.
Aerosol Monitor	TSI	SidePak AM510	11208032	AAST-RSP-01

Certificate Information

Date of Receipt:	30 August 2022	Calibration Condition:	24.1°C, 54%RH, 1001hPa
Date of Calibration:	2 September 2022	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	ISO 21501-4:2018	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Aerosol Monitor	8534	8534182605	6 September 2022

Result of Calibration

Indication

Gas	Reference Setting (mg/m³)	Measured reading (mg/m³)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
Dust - TSP	0.000	0.000	N/A	14.0	N/A	Mfr's Spec.
Dust - TSP	0.101	0.103	1.9	14.0	N/A	Mfr's Spec.
Dust - TSP	0.205	0.210	2.4	14.0	N/A	Mfr's Spec.
Dust - TSP	0.307	0.313	2.0	14.0	N/A	Mfr's Spec.

CT-GAS-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: 5 September 2022

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

CC0482208
Page 1 of 1

Personal Aerosol Monitor Performance check with High Volume Sampler

Preformance Check ref. No: AS0220624-7 Report Issue Date: 24/06/2022
Date of performance check: 22/06/2022

Objective:

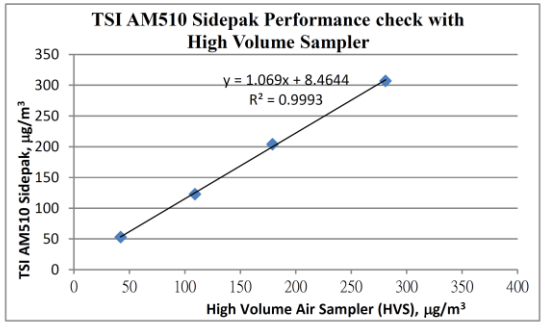
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

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

Resuslt:

Equipment	Measurement Result, μg/m³			
TSI AM510 Sidepak	53	123	204	307
High Volume Air Sampler (HVS)	42	109	179	281



Tested by : 24/06/2022
Name : (Ben Poon)

Checked by : 24/06/2022
Name : (Tommy Wong)

Form No. ENV CAL SAMPLER CC1 dd12/12/2003

Calibration Certificate of Dust Meter (TSI Sidepak AM510)

TSI P/N 2300157

CERTIFICATE OF CALIBRATION AND TESTING

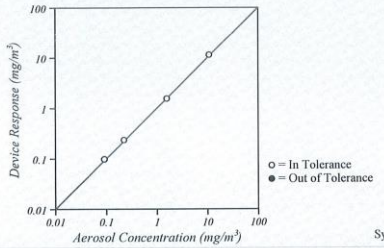
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

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

Model	AM510
Serial Number	11306015

☒ As Left ☐ As Found
☒ In Tolerance ☐ Out of Tolerance

Concentration Linearity Plot



System ID: DTII01-02

CONCENTRATION *Unit: mg/m3*

#	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, A1 test dust (Arizona dust). Our calibration ratio is greater than 4:1

Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E003314	01-11-22	01-31-23
Microbalance	M001324	01-29-21	01-31-23
Flowmeter	E004025	06-24-22	06-30-23

Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003319	08-30-22	02-28-23
Pressure	E003511	10-26-21	10-31-22
DC Voltage	E003315	01-11-22	01-31-23

Tom Wong
Calibrated

September 27, 2022
Date

Personal Aerosol Monitor Performance check with High Volume Sampler

Preformance Check ref. No: AS0220624-3 Report Issue Date: 24/06/2022
Date of performance check: 23/06/2022

Objective:

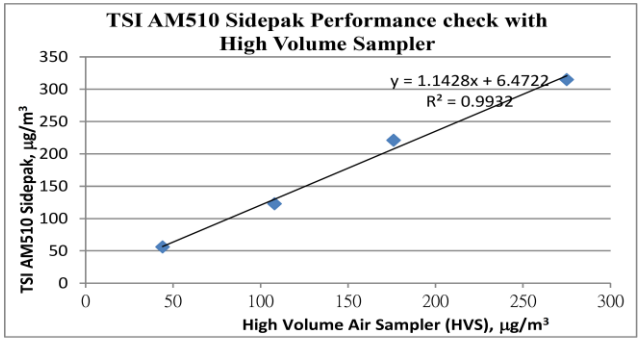
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

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

Resuslt:

Equipment	Measurement Result, μg/m³			
TSI AM510 Sidepak	56	123	221	315
High Volume Air Sampler (HVS)	44	108	176	275



Tested by : 24/06/2022
Name : (Ben Poon)

24/06/2022
Name : (Tommy Wong)

Form No. ENV CAL SAMPLER CC1 dd12/12/2003

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-Asprated 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

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.: CC0402302

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.:
Weather Station	Davis Vantage PRO 2	6152CEU	AZ170710012	AAST-WS-02

Certificate Information

Date of Receipt:	8 February 2023	Calibration Condition:	24.5°C, 54%RH, 1010hPa
Date of Calibration:	20 February 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	JJF 1183-2007, JJF 1076-2001, 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: 20 February 2023

CT-BEG-03

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

Result of Calibration

Temperature

Reference reading (°C)	Reading (°C)	Error (°C)	Uncertainty (°C)
15.0	15	0	2
20.0	21	1	2
25.0	26	1	2
30.0	30	0	2

Relative Humidity

Reference reading (%RH)	Reading (%RH)	Error (%RH)	Uncertainty (%RH)
40.0	44	4	2
50.0	54	4	2
70.0	69	-1	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	4.8	-4.0	3.6
8.0	7.6	-5.0	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 ***

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

Appendix F – Weather information

General Information

Date	Absolute Daily Min Temperature (˚C)	Absolute Daily Max Temperature (˚C)	Total Rainfall (mm)	Mean Relative Humidity (%)
01/03/2023	16.4	24.4	0.0	71
02/03/2023	17.8	23.2	0.0	70
03/03/2023	16.5	22.4	0.0	56
04/03/2023	17.3	23.8	0.0	65
05/03/2023	17.3	23.5	0.0	57
06/03/2023	17.4	24.1	0.0	50
07/03/2023	17.7	24.1	0.0	56
08/03/2023	19.1	25.7	0.0	77
09/03/2023	19.5	27.0	0.0	75
10/03/2023	20.3	26.6	0.0	68
11/03/2023	19.9	26.0	0.0	67
12/03/2023	20.2	25.6	0.1	71
13/03/2023	19,1	22.4	Trace	64
14/03/2023	18.7	22.9	0.0	73
15/03/2023	18.7	24.5	0.0	77
16/03/2023	19.4	25.8	Trace	72
17/03/2023	20.0	26.1	0.5	83
18/03/2023	19.8	26.8	0.0	80
19/03/2023	20.0	21.9	0.6	86
20/03/2023	20.1	24.4	0.3	88
21/03/2023	22.1	25.4	Trace	85
22/03/2023	24.1	25.6	Trace	83
23/03/2023	24.1	26.3	0.0	81
24/03/2023	23.3	29.0	0.0	80
25/03/2023	20.9	26.4	53.5	89
26/03/2023	20.0	21.6	5.9	91
27/03/2023	17.5	20.0	6.3	86
28/03/2023	17.2	20.1	Trace	84
29/03/2023	18.4	21.8	0.9	86
30/03/2023	19.8	21.4	0.3	89
31/03/2023	19.6	21.1	1.9	92

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=03

Kai Tak Runway Park Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)
01/03/2023	16.1	23.5
02/03/2023	17.4	21.9
03/03/2023	16.5	21.1
04/03/2023	17.0	21.6
05/03/2023	16.6	22.8
06/03/2023	16.9	23.4
07/03/2023	17.4	23.2
08/03/2023	18.2	23.3
09/03/2023	18.5	26.0
10/03/2023	19.8	24.9
11/03/2023	19.4	24.0
12/03/2023	19.6	25.9
13/03/2023	18.0	21.2
14/03/2023	18.4	21.1
15/03/2023	18.2	22.8
16/03/2023	18.8	25.8
17/03/2023	19.8	23.6
18/03/2023	19.4	25.4
19/03/2023	19.9	21.6
20/03/2023	19.9	23.1
21/03/2023	21.3	25.2
22/03/2023	23.7	25.9
23/03/2023	23.6	26.8
24/03/2023	22.8	27.0
25/03/2023	21.1	24.5
26/03/2023	19.7	21.8
27/03/2023	17.2	19.7
28/03/2023	17.0	20.3
29/03/2023	18.4	21.2
30/03/2023	19.7	21.4
31/03/2023	19.6	21.1

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=2023-03-01&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
01/03/2023	0:00	0.4	90	02/03/2023	0:00	1.3	112.5	03/03/2023	0:00	0.4	112.5	04/03/2023	0:00	0.4	67.5
01/03/2023	1:00	0.9	90	02/03/2023	1:00	0.9	90	03/03/2023	1:00	0.4	112.5	04/03/2023	1:00	0.4	67.5
01/03/2023	2:00	0.9	90	02/03/2023	2:00	0.9	112.5	03/03/2023	2:00	1.3	90	04/03/2023	2:00	1.3	0
01/03/2023	3:00	0	67.5	02/03/2023	3:00	0.4	135	03/03/2023	3:00	0.4	112.5	04/03/2023	3:00	0	67.5
01/03/2023	4:00	0.4	67.5	02/03/2023	4:00	0.4	90	03/03/2023	4:00	1.3	112.5	04/03/2023	4:00	0.4	90
01/03/2023	5:00	0.4	67.5	02/03/2023	5:00	0.9	135	03/03/2023	5:00	0.9	135	04/03/2023	5:00	0.4	90
01/03/2023	6:00	1.3	0	02/03/2023	6:00	0.4	112.5	03/03/2023	6:00	0.9	135	04/03/2023	6:00	0.4	67.5
01/03/2023	7:00	0	67.5	02/03/2023	7:00	1.8	45	03/03/2023	7:00	1.8	112.5	04/03/2023	7:00	0.9	90
01/03/2023	8:00	0.4	90	02/03/2023	8:00	1.3	112.5	03/03/2023	8:00	1.3	90	04/03/2023	8:00	1.3	135
01/03/2023	9:00	0.4	90	02/03/2023	9:00	1.8	67.5	03/03/2023	9:00	0.9	112.5	04/03/2023	9:00	0.9	67.5
01/03/2023	12:00	0.4	67.5	02/03/2023	12:00	0.9	112.5	03/03/2023	12:00	0.9	112.5	04/03/2023	12:00	1.3	90
01/03/2023	12:00	0.9	90	02/03/2023	12:00	1.3	90	03/03/2023	12:00	1.3	90	04/03/2023	12:00	1.3	90
01/03/2023	12:00	1.3	135	02/03/2023	12:00	1.3	90	03/03/2023	12:00	0.9	112.5	04/03/2023	12:00	1.3	112.5
01/03/2023	13:00	0.4	67.5	02/03/2023	13:00	0.4	270	03/03/2023	13:00	0.9	45	04/03/2023	13:00	0.9	90
01/03/2023	14:00	0.9	45	02/03/2023	14:00	0.9	0	03/03/2023	14:00	0.9	337.5	04/03/2023	14:00	0.4	112.5
01/03/2023	15:00	0.4	135	02/03/2023	15:00	0.4	225	03/03/2023	15:00	0.4	112.5	04/03/2023	15:00	0.9	45
01/03/2023	16:00	0.4	135	02/03/2023	16:00	0.4	90	03/03/2023	16:00	0.9	292.5	04/03/2023	16:00	0.9	112.5
01/03/2023	17:00	0.4	112.5	02/03/2023	17:00	0.4	157.5	03/03/2023	17:00	0.9	157.5	04/03/2023	17:00	0.4	315
01/03/2023	18:00	0.9	22.5	02/03/2023	18:00	0.9	112.5	03/03/2023	18:00	0.9	67.5	04/03/2023	18:00	1.8	67.5
01/03/2023	19:00	0.9	90	02/03/2023	19:00	1.3	112.5	03/03/2023	19:00	1.8	22.5	04/03/2023	19:00	1.3	22.5
01/03/2023	20:00	0.4	135	02/03/2023	20:00	0.9	135	03/03/2023	20:00	0.4	90	04/03/2023	20:00	1.8	112.5
01/03/2023	21:00	0.4	225	02/03/2023	21:00	0.9	135	03/03/2023	21:00	0.4	112.5	04/03/2023	21:00	1.3	45
01/03/2023	22:00	0.4	157.5	02/03/2023	22:00	0.9	112.5	03/03/2023	22:00	1.3	112.5	04/03/2023	22:00	1.8	90
01/03/2023	23:00	1.3	90	02/03/2023	23:00	0.4	112.5	03/03/2023	23:00	1.8	112.5	04/03/2023	23:00	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
05/03/2023	0:00	0.4	270	06/03/2023	0:00	0.4	315	07/03/2023	0:00	0.9	45	08/03/2023	0:00	0.9	67.5
05/03/2023	1:00	0	270	06/03/2023	1:00	0.9	45	07/03/2023	1:00	1.3	247.5	08/03/2023	1:00	1.8	67.5
05/03/2023	2:00	0	337.5	06/03/2023	2:00	1.3	270	07/03/2023	2:00	1.3	247.5	08/03/2023	2:00	1.8	90
05/03/2023	3:00	0.4	270	06/03/2023	3:00	0.9	22.5	07/03/2023	3:00	0.4	135	08/03/2023	3:00	0.9	67.5
05/03/2023	4:00	0.4	225	06/03/2023	4:00	1.3	67.5	07/03/2023	4:00	0.4	292.5	08/03/2023	4:00	0.9	67.5
05/03/2023	5:00	0.4	0	06/03/2023	5:00	0.9	135	07/03/2023	5:00	0.4	90	08/03/2023	5:00	1.3	45
05/03/2023	6:00	0.9	135	06/03/2023	6:00	0.4	45	07/03/2023	6:00	1.3	225	08/03/2023	6:00	1.3	67.5
05/03/2023	7:00	0.4	90	06/03/2023	7:00	0.9	90	07/03/2023	7:00	1.3	90	08/03/2023	7:00	0.4	180
05/03/2023	8:00	0.4	135	06/03/2023	8:00	1.3	90	07/03/2023	8:00	0.9	45	08/03/2023	8:00	0.9	135
05/03/2023	9:00	0.9	22.5	06/03/2023	9:00	1.3	67.5	07/03/2023	9:00	0.9	45	08/03/2023	9:00	0.4	90
05/03/2023	12:00	0.9	90	06/03/2023	12:00	0.9	45	07/03/2023	12:00	1.3	180	08/03/2023	12:00	0.4	135
05/03/2023	12:00	0.4	135	06/03/2023	12:00	1.3	112.5	07/03/2023	12:00	0.9	45	08/03/2023	12:00	0.9	67.5
05/03/2023	12:00	0.9	112.5	06/03/2023	12:00	0.9	180	07/03/2023	12:00	0.9	67.5	08/03/2023	12:00	0.9	180
05/03/2023	13:00	1.3	90	06/03/2023	13:00	0.4	225	07/03/2023	13:00	1.3	90	08/03/2023	13:00	0.9	180
05/03/2023	14:00	0.9	0	06/03/2023	14:00	0.9	225	07/03/2023	14:00	0	247.5	08/03/2023	14:00	0.9	135
05/03/2023	15:00	1.3	0	06/03/2023	15:00	0.9	135	07/03/2023	15:00	0.9	202.5	08/03/2023	15:00	1.3	67.5
05/03/2023	16:00	0.9	67.5	06/03/2023	16:00	0.9	247.5	07/03/2023	16:00	0.4	270	08/03/2023	16:00	0.9	112.5
05/03/2023	17:00	0.9	67.5	06/03/2023	17:00	0.4	180	07/03/2023	17:00	0.4	292.5	08/03/2023	17:00	1.3	112.5
05/03/2023	18:00	1.3	67.5	06/03/2023	18:00	0.4	270	07/03/2023	18:00	0.4	135	08/03/2023	18:00	1.3	67.5
05/03/2023	19:00	0.9	67.5	06/03/2023	19:00	0.9	180	07/03/2023	19:00	0.4	112.5	08/03/2023	19:00	1.3	45
05/03/2023	20:00	0.9	135	06/03/2023	20:00	0.4	157.5	07/03/2023	20:00	0.4	135	08/03/2023	20:00	0.9	180
05/03/2023	21:00	0.4	22.5	06/03/2023	21:00	0.4	112.5	07/03/2023	21:00	0.9	225	08/03/2023	21:00	0.9	112.5
05/03/2023	22:00	0.4	157.5	06/03/2023	22:00	0.9	90	07/03/2023	22:00	0.4	225	08/03/2023	22:00	1.3	45
05/03/2023	23:00	0.9	45	06/03/2023	23:00	0.4	270	07/03/2023	23:00	0.9	67.5	08/03/2023	23:00	0.9	180

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
09/03/2023	0:00	0.4	112.5	10/03/2023	0:00	0.4	135	11/03/2023	0:00	0.4	112.5	12/03/2023	0:00	0.4	247.5
09/03/2023	1:00	0.4	135	10/03/2023	1:00	0.9	112.5	11/03/2023	1:00	0.9	112.5	12/03/2023	1:00	0.4	247.5
09/03/2023	2:00	0	112.5	10/03/2023	2:00	0.4	112.5	11/03/2023	2:00	0.9	112.5	12/03/2023	2:00	0.4	247.5
09/03/2023	3:00	0.4	112.5	10/03/2023	3:00	0.9	112.5	11/03/2023	3:00	0.4	135	12/03/2023	3:00	0.9	112.5
09/03/2023	4:00	0.4	112.5	10/03/2023	4:00	0.4	135	11/03/2023	4:00	0.4	135	12/03/2023	4:00	0.4	247.5
09/03/2023	5:00	0.4	112.5	10/03/2023	5:00	0.9	112.5	11/03/2023	5:00	0.4	112.5	12/03/2023	5:00	0.4	292.5
09/03/2023	6:00	0.9	112.5	10/03/2023	6:00	0	112.5	11/03/2023	6:00	0.4	112.5	12/03/2023	6:00	0.4	247.5
09/03/2023	7:00	0.9	112.5	10/03/2023	7:00	0.4	112.5	11/03/2023	7:00	1.3	112.5	12/03/2023	7:00	0.4	270
09/03/2023	8:00	1.3	112.5	10/03/2023	8:00	0.9	135	11/03/2023	8:00	0.4	112.5	2/03/2023	8:00	0.4	225
09/03/2023	9:00	0.9	112.5	10/03/2023	9:00	0.4	112.5	11/03/2023	9:00	0.4	135	12/03/2023	9:00	1.3	247.5
09/03/2023	12:00	0.9	247.5	10/03/2023	12:00	0.4	112.5	11/03/2023	12:00	0.9	112.5	12/03/2023	12:00	1.3	247.5
09/03/2023	12:00	0.4	247.5	10/03/2023	12:00	1.3	135	11/03/2023	12:00	0.4	112.5	12/03/2023	12:00	0.9	225
09/03/2023	12:00	0	270	10/03/2023	12:00	0	112.5	11/03/2023	12:00	0.4	112.5	12/03/2023	12:00	0.4	247.5
09/03/2023	13:00	0.4	112.5	10/03/2023	13:00	0.4	112.5	11/03/2023	13:00	1.3	112.5	12/03/2023	13:00	0.4	247.5
09/03/2023	14:00	0.4	112.5	10/03/2023	14:00	1.3	112.5	11/03/2023	14:00	1.3	112.5	12/03/2023	14:00	1.3	112.5
09/03/2023	15:00	0.4	112.5	10/03/2023	15:00	0.4	112.5	11/03/2023	15:00	1.3	67.5	12/03/2023	15:00	1.8	45
09/03/2023	16:00	0.9	112.5	10/03/2023	16:00	1.3	157.5	11/03/2023	16:00	0.9	135	12/03/2023	16:00	1.8	112.5
09/03/2023	17:00	0.9	112.5	10/03/2023	17:00	0.9	90	11/03/2023	17:00	0.4	315	12/03/2023	17:00	1.3	90
09/03/2023	18:00	0.4	112.5	10/03/2023	18:00	0.9	112.5	11/03/2023	18:00	0.9	157.5	12/03/2023	18:00	1.3	22.5
09/03/2023	19:00	0.4	90	10/03/2023	19:00	1.3	90	11/03/2023	19:00	0.4	45	12/03/2023	19:00	1.3	112.5
09/03/2023	20:00	0.4	90	10/03/2023	20:00	0.9	112.5	11/03/2023	20:00	0.9	112.5	12/03/2023	20:00	1.3	112.5
09/03/2023	21:00	0	90	10/03/2023	21:00	1.3	112.5	11/03/2023	21:00	0.4	112.5	12/03/2023	21:00	1.3	0
09/03/2023	22:00	0.4	90	10/03/2023	22:00	1.3	90	11/03/2023	22:00	0.4	67.5	12/03/2023	22:00	0.4	292.5
09/03/2023	23:00	0.4	112.5	10/03/2023	23:00	1.3	90	11/03/2023	23:00	0.9	135	12/03/2023	23:00	0.9	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
13/03/2023	0:00	0.4	90	14/03/2023	0:00	0.9	90	15/03/2023	0:00	1.3	67.5	16/03/2023	0:00	0.9	135
13/03/2023	1:00	0.4	90	14/03/2023	1:00	0.9	112.5	15/03/2023	1:00	1.3	157.5	16/03/2023	1:00	0.9	112.5
13/03/2023	2:00	0.4	112.5	14/03/2023	2:00	0.9	90	15/03/2023	2:00	0.9	67.5	16/03/2023	2:00	0.9	90
13/03/2023	3:00	0.9	225	14/03/2023	3:00	1.3	112.5	15/03/2023	3:00	1.3	112.5	16/03/2023	3:00	0.9	90
13/03/2023	4:00	0.9	202.5	14/03/2023	4:00	1.3	112.5	15/03/2023	4:00	0.9	112.5	16/03/2023	4:00	0.9	90
13/03/2023	5:00	0.9	112.5	14/03/2023	5:00	1.3	90	15/03/2023	5:00	1.3	22.5	16/03/2023	5:00	0.4	112.5
13/03/2023	6:00	0.9	135	14/03/2023	6:00	1.3	112.5	15/03/2023	6:00	1.3	45	16/03/2023	6:00	0.4	90
13/03/2023	7:00	0.9	90	14/03/2023	7:00	1.3	112.5	15/03/2023	7:00	0.9	315	16/03/2023	7:00	0.4	135
13/03/2023	8:00	1.3	90	14/03/2023	8:00	1.3	112.5	15/03/2023	8:00	0.9	112.5	16/03/2023	8:00	0.9	90
13/03/2023	9:00	1.8	112.	14/03/2023	9:00	1.8	112.5	15/03/2023	9:00	0.9	135	16/03/2023	9:00	0.9	157.5
13/03/2023	12:00	0.9	90	14/03/2023	12:00	1.3	112.5	15/03/2023	12:00	1.3	112.5	16/03/2023	12:00	0.4	112.5
13/03/2023	12:00	0.4	112.5	14/03/2023	12:00	1.8	45	15/03/2023	12:00	0.9	112.5	16/03/2023	12:00	0.9	112.5
13/03/2023	12:00	0.9	135	14/03/2023	12:00	1.3	337.5	15/03/2023	12:00	1.3	112.5	16/03/2023	12:00	0.9	112.5
13/03/2023	13:00	0.4	135	14/03/2023	13:00	0.9	112.5	15/03/2023	13:00	0.9	135	16/03/2023	13:00	0.9	112.5
13/03/2023	14:00	0.4	157.5	14/03/2023	14:00	1.3	135	15/03/2023	14:00	0.9	157.5	16/03/2023	14:00	0.9	135
13/03/2023	15:00	0.4	135	14/03/2023	15:00	1.8	90	15/03/2023	15:00	0.9	135	16/03/2023	15:00	1.3	90
13/03/2023	16:00	0.4	135	14/03/2023	16:00	1.8	135	15/03/2023	16:00	0.9	112.5	16/03/2023	16:00	0.9	135
13/03/2023	17:00	0.4	112.5	14/03/2023	17:00	1.3	135	15/03/2023	17:00	0.9	112.5	16/03/2023	17:00	1.3	90
13/03/2023	18:00	0.9	135	14/03/2023	18:00	1.8	67.5	15/03/2023	18:00	0.9	112.5	16/03/2023	18:00	0.9	112.5
13/03/2023	19:00	0.9	112.5	14/03/2023	19:00	0.9	90	15/03/2023	19:00	0.4	135	16/03/2023	19:00	0.9	135
13/03/2023	20:00	0.9	112.5	14/03/2023	20:00	1.8	225	15/03/2023	20:00	0.4	135	16/03/2023	20:00	1.3	112.5
13/03/2023	21:00	0.4	135	14/03/2023	21:00	1.3	67.5	15/03/2023	21:00	0.9	45	16/03/2023	21:00	1.3	112.5
13/03/2023	22:00	0.4	337.5	14/03/2023	22:00	0.9	22.5	15/03/2023	22:00	0.4	90	16/03/2023	22:00	0.9	112.5
13/03/2023	23:00	0.4	112.5	14/03/2023	23:00	0.4	292.5	15/03/2023	23:00	0.4	67.5	16/03/2023	23:00	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
17/03/2023	0:00	0.9	112.5	18/03/2023	0:00	0.9	112.5	19/03/2023	0:00	1.3	135	20/03/2023	0:00	1.3	90
17/03/2023	1:00	0.9	135	18/03/2023	1:00	1.3	112.5	19/03/2023	1:00	1.8	135	20/03/2023	1:00	1.3	45
17/03/2023	2:00	0.9	112.5	18/03/2023	2:00	0.9	135	19/03/2023	2:00	1.3	112.5	20/03/2023	2:00	0.9	67.5
17/03/2023	3:00	0.9	112.5	18/03/2023	3:00	0.9	90	19/03/2023	3:00	1.3	90	20/03/2023	3:00	1.3	45
17/03/2023	4:00	1.3	112.5	18/03/2023	4:00	1.3	112.5	19/03/2023	4:00	1.3	90	20/03/2023	4:00	1.3	22.5
17/03/2023	5:00	0.9	112.5	18/03/2023	5:00	1.3	112.5	19/03/2023	5:00	1.3	112.5	20/03/2023	5:00	1.3	22.5
17/03/2023	6:00	1.3	90	18/03/2023	6:00	1.3	135	19/03/2023	6:00	1.3	112.5	20/03/2023	6:00	0.9	22.5
17/03/2023	7:00	0.9	292.5	18/03/2023	7:00	1.3	135	19/03/2023	7:00	0.9	45	20/03/2023	7:00	0.9	247.5
17/03/2023	8:00	1.3	112.5	18/03/2023	8:00	1.8	112.5	19/03/2023	8:00	0.9	112.5	20/03/2023	8:00	0.9	45
17/03/2023	9:00	0.9	112.5	18/03/2023	9:00	0.9	90	19/03/2023	9:00	0.9	90	20/03/2023	9:00	1.3	45
17/03/2023	12:00	0.4	112.5	18/03/2023	12:00	1.3	135	19/03/2023	12:00	0.9	90	20/03/2023	12:00	0.9	45
17/03/2023	12:00	0.4	112.5	18/03/2023	12:00	0.9	112.5	19/03/2023	12:00	0.9	90	20/03/2023	12:00	0.9	90
17/03/2023	12:00	0.9	112.5	18/03/2023	12:00	0.9	112.5	19/03/2023	12:00	1.3	112.5	20/03/2023	12:00	1.3	90
17/03/2023	13:00	2.2	112.5	18/03/2023	13:00	1.3	135	19/03/2023	13:00	1.3	112.5	20/03/2023	13:00	1.3	67.5
17/03/2023	14:00	1.3	135	18/03/2023	14:00	0.9	90	19/03/2023	14:00	1.3	112.5	20/03/2023	14:00	1.3	67.5
17/03/2023	15:00	0.4	112.5	18/03/2023	15:00	0.9	112.5	19/03/2023	15:00	0.4	135	20/03/2023	15:00	0.4	22.5
17/03/2023	16:00	0.9	112.5	18/03/2023	16:00	0.9	112.5	19/03/2023	16:00	0.4	135	20/03/2023	16:00	0.9	135
17/03/2023	17:00	0.9	112.5	18/03/2023	17:00	0.9	112.5	19/03/2023	17:00	0.9	225	20/03/2023	17:00	0.9	90
17/03/2023	18:00	0.4	135	18/03/2023	18:00	0.9	90	19/03/2023	18:00	0.9	112.5	20/03/2023	18:00	1.3	112.5
17/03/2023	19:00	0.4	112.5	18/03/2023	19:00	1.3	112.5	19/03/2023	19:00	0.4	112.5	20/03/2023	19:00	1.3	135
17/03/2023	20:00	0.9	112.5	18/03/2023	20:00	0.9	90	19/03/2023	20:00	0.4	112.5	20/03/2023	20:00	0.4	112.5
17/03/2023	21:00	0.9	112.5	18/03/2023	21:00	0.9	90	19/03/2023	21:00	0.9	90	20/03/2023	21:00	0.9	90
17/03/2023	22:00	1.3	112.5	18/03/2023	22:00	0.9	112.5	19/03/2023	22:00	1.3	90	20/03/2023	22:00	1.3	112.5
17/03/2023	23:00	0.9	135	18/03/2023	23:00	0.9	112.5	19/03/2023	23:00	0.4	90	20/03/2023	23:00	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
21/03/2023	0:00	1.3	45	22/03/2023	0:00	1.3	112.5	23/03/2023	0:00	0.9	67.5	24/03/2023	0:00	0.9	135
21/03/2023	1:00	0.9	112.5	22/03/2023	1:00	1.3	112.5	23/03/2023	1:00	0.9	112.5	24/03/2023	1:00	0.9	112.5
21/03/2023	2:00	0.4	90	22/03/2023	2:00	0.9	90	23/03/2023	2:00	1.3	135	24/03/2023	2:00	0.9	90
21/03/2023	3:00	0.4	90	22/03/2023	3:00	0.9	112.5	23/03/2023	3:00	0.4	135	24/03/2023	3:00	0.4	90
21/03/2023	4:00	1.3	45	22/03/2023	4:00	0.9	112.5	23/03/2023	4:00	0.9	135	24/03/2023	4:00	0.9	112.5
21/03/2023	5:00	0.4	112.5	22/03/2023	5:00	0.9	180	23/03/2023	5:00	0.9	135	24/03/2023	5:00	0.4	112.5
21/03/2023	6:00	0.9	45	22/03/2023	6:00	1.3	45	23/03/2023	6:00	0.9	112.5	24/03/2023	6:00	0.4	112.5
21/03/2023	7:00	1.3	90	22/03/2023	7:00	0.9	112.5	23/03/2023	7:00	0.9	67.5	24/03/2023	7:00	0.4	90
21/03/2023	8:00	0.9	90	22/03/2023	8:00	1.3	112.5	23/03/2023	8:00	0.4	135	24/03/2023	8:00	0.4	90
21/03/2023	9:00	0.4	112.5	22/03/2023	9:00	0.9	292.5	23/03/2023	9:00	0.9	157.5	24/03/2023	9:00	0.9	112.5
21/03/2023	12:00	1.3	90	22/03/2023	12:00	0.9	112.5	23/03/2023	12:00	0.4	22.5	24/03/2023	12:00	1.3	90
21/03/2023	12:00	0.9	112.5	22/03/2023	12:00	1.3	45	23/03/2023	12:00	0.4	22.5	24/03/2023	12:00	0.9	270
21/03/2023	12:00	0.9	112.5	22/03/2023	12:00	1.3	112.5	23/03/2023	12:00	0.4	112.5	24/03/2023	12:00	0.9	135
21/03/2023	13:00	0.4	90	22/03/2023	13:00	1.3	112.5	23/03/2023	13:00	0.9	90	24/03/2023	13:00	0.9	112.5
21/03/2023	14:00	1.3	112.5	22/03/2023	14:00	1.3	202.5	23/03/2023	14:00	0.9	135	24/03/2023	14:00	1.3	135
21/03/2023	15:00	0.9	112.5	22/03/2023	15:00	1.3	45	23/03/2023	15:00	0.9	112.5	24/03/2023	15:00	0.4	112.5
21/03/2023	16:00	1.3	112.5	22/03/2023	16:00	1.3	90	23/03/2023	16:00	0.9	90	24/03/2023	16:00	0.4	90
21/03/2023	17:00	1.3	315	22/03/2023	17:00	0.9	135	23/03/2023	17:00	0.4	90	24/03/2023	17:00	0.4	112.5
21/03/2023	18:00	0.9	247.5	22/03/2023	18:00	0.9	270	23/03/2023	18:00	0.9	112.5	24/03/2023	18:00	0.9	90
21/03/2023	19:00	0.9	22.5	22/03/2023	19:00	0.9	247.5	23/03/2023	19:00	0.4	112.5	24/03/2023	19:00	0.9	112.5
21/03/2023	20:00	0.9	45	22/03/2023	20:00	0.9	202.5	23/03/2023	20:00	0.4	112.5	24/03/2023	20:00	0.4	90
21/03/2023	21:00	0.4	67.5	22/03/2023	21:00	1.3	270	23/03/2023	21:00	0.4	90	24/03/2023	21:00	0.9	112.5
21/03/2023	22:00	0.9	112.5	22/03/2023	22:00	1.3	247.5	23/03/2023	22:00	0.4	90	24/03/2023	22:00	0.4	112.5
21/03/2023	23:00	0.4	112.5	22/03/2023	23:00	1.3	247.5	23/03/2023	23:00	0.9	112.5	24/03/2023	23:00	0.4	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
25/03/2023	0:00	0.9	135	26/03/2023	0:00	0.9	0	27/03/2023	0:00	0.9	112.5	28/03/2023	0:00	0.4	247.5
25/03/2023	1:00	0.4	112.5	26/03/2023	1:00	0.9	45	27/03/2023	1:00	1.3	90	28/03/2023	1:00	0.9	247.5
25/03/2023	2:00	0.4	292.5	26/03/2023	2:00	1.3	45	27/03/2023	2:00	0.9	112.5	28/03/2023	2:00	0.9	180
25/03/2023	3:00	0.9	112.5	26/03/2023	3:00	0.9	22.5	27/03/2023	3:00	0.9	90	28/03/2023	3:00	0.9	247.5
25/03/2023	4:00	0.4	225	26/03/2023	4:00	1.3	22.5	27/03/2023	4:00	0.9	90	28/03/2023	4:00	1.3	270
25/03/2023	5:00	0.4	315	26/03/2023	5:00	1.3	22.5	27/03/2023	5:00	0.9	67.5	28/03/2023	5:00	1.3	247.5
25/03/2023	6:00	0.4	112.5	26/03/2023	6:00	0.9	135	27/03/2023	6:00	0.4	112.5	28/03/2023	6:00	0.9	67.5
25/03/2023	7:00	0.4	112.5	26/03/2023	7:00	0.4	67.5	27/03/2023	7:00	0.4	135	28/03/2023	7:00	0.9	90
25/03/2023	8:00	0.9	45	26/03/2023	8:00	0.9	22.5	27/03/2023	8:00	0.4	112.5	28/03/2023	8:00	0.9	90
25/03/2023	9:00	0.4	67.5	26/03/2023	9:00	1.3	22.5	27/03/2023	9:00	0.9	112.5	28/03/2023	9:00	1.3	45
25/03/2023	12:00	0.4	45	26/03/2023	12:00	1.3	22.5	27/03/2023	12:00	0.9	112.5	28/03/2023	12:00	0.9	67.5
25/03/2023	12:00	0.4	67.5	26/03/2023	12:00	0.4	90	27/03/2023	12:00	0.9	90	28/03/2023	12:00	0.4	22.5
25/03/2023	12:00	0.9	112.5	26/03/2023	12:00	1.3	337.5	27/03/2023	12:00	0.9	112.5	28/03/2023	12:00	1.3	292.5
25/03/2023	13:00	0.9	135	26/03/2023	13:00	0.9	22.5	27/03/2023	13:00	0.4	112.5	28/03/2023	13:00	0.9	112.5
25/03/2023	14:00	0.4	112.5	26/03/2023	14:00	0.4	90	27/03/2023	14:00	0.4	112.5	28/03/2023	14:00	0.9	90
25/03/2023	15:00	0.4	135	26/03/2023	15:00	0.4	112.5	27/03/2023	15:00	0.4	225	28/03/2023	15:00	0.9	90
25/03/2023	16:00	0	112.5	26/03/2023	16:00	0.4	135	27/03/2023	16:00	0.4	202.5	28/03/2023	16:00	0.4	112.5
25/03/2023	17:00	0.4	112.5	26/03/2023	17:00	0.9	67.5	27/03/2023	17:00	0.4	135	28/03/2023	17:00	0.4	112.5
25/03/2023	18:00	0.4	112.5	26/03/2023	18:00	0.9	90	27/03/2023	18:00	0.9	112.5	28/03/2023	18:00	0.4	112.5
25/03/2023	19:00	0.4	112.5	26/03/2023	19:00	0.9	45	27/03/2023	19:00	0.9	112.5	28/03/2023	19:00	0.4	112.5
25/03/2023	20:00	0.9	112.5	26/03/2023	20:00	0.9	90	27/03/2023	20:00	0.9	135	28/03/2023	20:00	0.9	90
25/03/2023	21:00	0.9	112.5	26/03/2023	21:00	0.9	67.5	27/03/2023	21:00	0.9	112.5	28/03/2023	21:00	0.4	90
25/03/2023	22:00	1.3	112.5	26/03/2023	22:00	0.9	90	27/03/2023	22:00	1.3	112.5	28/03/2023	22:00	0.9	90
25/03/2023	23:00	0	90	26/03/2023	23:00	0.9	90	27/03/2023	23:00	0.9	112.5	28/03/2023	23:00	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
29/03/2023	0:00	0.9	112.5	30/03/2023	0:00	0.9	112.5	31/03/2023	0:00	0.9	270				
29/03/2023	1:00	1.3	202.5	30/03/2023	1:00	1.3	112.5	31/03/2023	1:00	0.4	247.5				
29/03/2023	2:00	1.3	112.5	30/03/2023	2:00	1.3	112.5	31/03/2023	2:00	0.9	247.5				
29/03/2023	3:00	1.3	112.5	30/03/2023	3:00	1.3	90	31/03/2023	3:00	0.9	247.5				
29/03/2023	4:00	0.9	67.5	30/03/2023	4:00	1.3	90	31/03/2023	4:00	0.9	135				
29/03/2023	5:00	0.9	112.5	30/03/2023	5:00	0.9	90	31/03/2023	5:00	0.9	112.5				
29/03/2023	6:00	1.8	112.5	30/03/2023	6:00	0.9	135	31/03/2023	6:00	0.9	112.5				
29/03/2023	7:00	1.3	90	30/03/2023	7:00	0.9	135	31/03/2023	7:00	1.3	112.5				
29/03/2023	8:00	1.3	90	30/03/2023	8:00	0.9	22.5	31/03/2023	8:00	1.3	112.5				
29/03/2023	9:00	0.9	67.5	30/03/2023	9:00	0.4	157.5	31/03/2023	9:00	0.4	90				
29/03/2023	12:00	1.3	90	30/03/2023	12:00	0.4	67.5	31/03/2023	12:00	0.4	112.5				
29/03/2023	12:00	1.8	112.5	30/03/2023	12:00	0.9	112.5	31/03/2023	12:00	0.4	112.5				
29/03/2023	12:00	2.2	112.5	30/03/2023	12:00	0.9	112.5	31/03/2023	12:00	0.9	247.5				
29/03/2023	13:00	1.3	112.5	30/03/2023	13:00	0.9	112.5	31/03/2023	13:00	1.3	270				
29/03/2023	14:00	1.3	112.5	30/03/2023	14:00	0.9	112.5	31/03/2023	14:00	0	135				
29/03/2023	15:00	1.3	202.5	30/03/2023	15:00	0.9	45	31/03/2023	15:00	0.4	292.5				
29/03/2023	16:00	1.3	112.5	30/03/2023	16:00	0.4	67.5	31/03/2023	16:00	0	90				
29/03/2023	17:00	1.3	67.5	30/03/2023	17:00	0.4	67.5	31/03/2023	17:00	0.4	112.5				
29/03/2023	18:00	0.9	67.5	30/03/2023	18:00	0.4	67.5	31/03/2023	18:00	0.9	112.5				
29/03/2023	19:00	0.9	90	30/03/2023	19:00	0.9	90	31/03/2023	19:00	0.9	135				
29/03/2023	20:00	0.4	180	30/03/2023	20:00	0.9	112.5	31/03/2023	20:00	0.9	90				
29/03/2023	21:00	0.4	180	30/03/2023	21:00	1.3	90	31/03/2023	21:00	0.9	45				
29/03/2023	22:00	0.9	112.5	30/03/2023	22:00	1.3	67.5	31/03/2023	22:00	0.9	45				
29/03/2023	23:00	0.4	202.5	30/03/2023	23:00	0.4	67.5	31/03/2023	23:00	0.4	135				

Appendix G – 24-hr TSP monitoring results and graphical presentation

Location: AM2(A) – Ng Wah Catholic Secondary School

Start Date	Weather	Air Temp. (℃)	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			
03/03/2023	Sunny	21.1	1024.9	15.4815	15.7273	0.2458	2023/3/3 13:05	2023/3/4 13:05	1440	50	50	1.36	1955	126
09/03/2023	Sunny	26	1017.7	18.4322	18.6681	0.2359	2023/3/9 9:10	2023/3/10 9:10	1440	50	50	1.34	1932	122
15/03/2023	Sunny	23.5	1017.4	18.1723	18.3232	0.1509	2023/3/15 13:00	2023/3/16 13:00	1440	50	50	1.35	1939	78
21/03/2023	Cloudy	25.2	1009.2	18.5943	18.7505	0.1562	2023/3/21 13:05	2023/3/22 13:05	1440	50	50	1.34	1926	81
27/03/2023	Cloudy	17.9	1016.2	14.5712	14.6504	0.0792	2023/3/27 9:00	2023/3/28 9:00	1440	52	52	1.41	2036	39

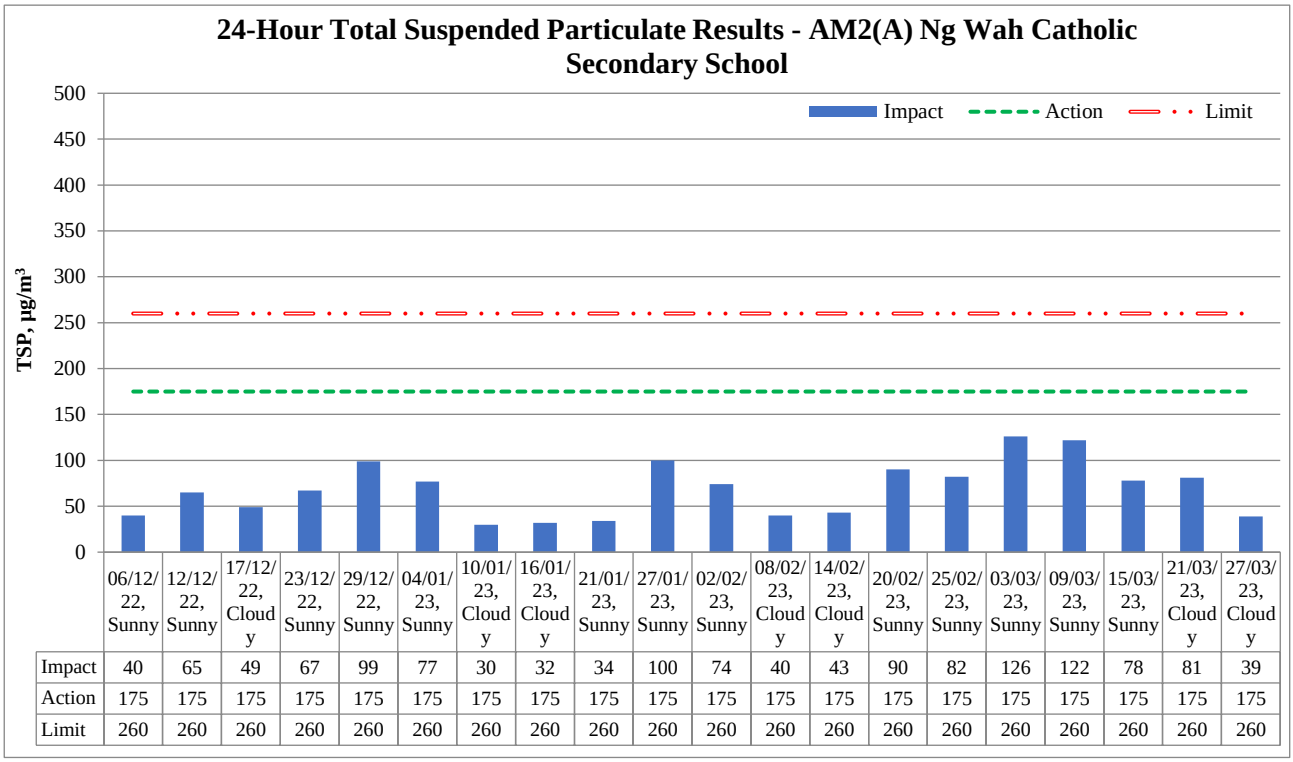
Maximum	126
Minimum	39
Average	89
Action Level	175
Limit Level	260

Location: AM3 – Sky Tower

Start Date	Weather	Air Temp. (℃)	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			
03/03/2023	Sunny	21.1	1024.9	18.0786	18.2516	0.1730	2023/3/3 9:25	2023/3/4 9:25	1440	46	46	1.28	1849	94
09/03/2023	Sunny	26	1017.7	18.2272	18.4426	0.2154	2023/3/9 13:23	2023/3/10 13:23	1440	48	48	1.32	1908	113
15/03/2023	Sunny	23.5	1017.4	17.8541	18.0693	0.2152	2023/3/15 9:34	2023/3/16 9:34	1440	48	48	1.33	1916	112
21/03/2023	Cloudy	25.2	1009.2	18.5503	18.6563	0.1060	2023/3/21 13:30	2023/3/22 13:30	1440	46	46	1.26	1821	58
27/03/2023	Cloudy	17.9	1016.2	18.8042	18.8729	0.0687	2023/3/27 13:24	2023/3/28 13:24	1440	44	44	1.23	1769	39

Maximum	113
Minimum	39
Average	83
Action Level	172
Limit Level	260

24-hour average TSP



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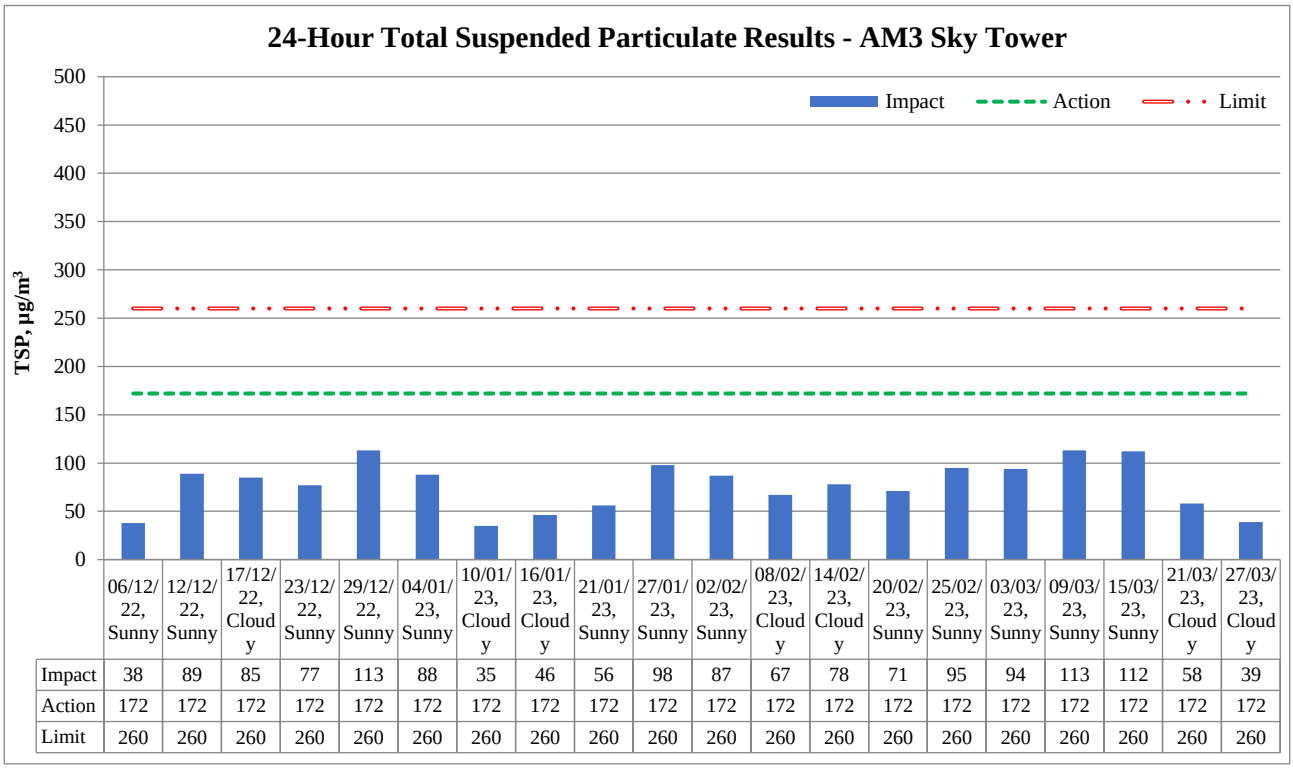
Impact	40	65	49	67	99	77	30	32	34	100	74	40	43	90	82	126	122	78	81	39
Action	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
Limit	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260



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Impact	38	89	85	77	113	88	35	46	56	98	87	67	78	71	95	94	113	112	58	39
Action	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172
Limit	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260

Major Construction Activities	Reporting Period			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for Road L16	✓	✓	✓	✓
Construction works for Olympic Avenue	✓	✓	✓	✓
Construction works for additional run-in at Road L7	✓	✓		
Construction of gantry footing at launching shaft for subway SB-01		✓	✓	
Dismantling of gantry crane at casting yard	✓	✓		
ELS and excavation works at Sa Po Road	✓	✓	✓	
ELS and excavation works for retrieving shaft at Sa Po Road				✓
ELS and excavation works for lift and staircase of LW-02		✓		
ELS modification at launching shaft for SB-01			✓	
Post-piling tests and proof drilling for LW02 lift and staircase	✓			
Pre-bored socket H-pile construction works for Slip Road S14	✓	✓	✓	✓
Pile cap construction works for lift and staircase of LW-02			✓	
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
Erection of gantry crane at launching shaft for SB-01			✓	
RC construction at launching shaft for subway SB-01	✓	✓		
RC construction for decking of LW-02				✓
Construction works for Pedestrian Street No. 2	✓			
RC construction for Subway KS10 Lift and Staircase	✓	✓	✓	✓
RC construction works for lift and staircase of LW-02				✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Steel back thrust construction at launching shaft for SB-01				✓
Erect gantry crane at launching shaft for SB-01				✓
Assembly of RTBM at launching shaft for SB-01				✓

Factors might affect the monitoring results	Reporting Period			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

Appendix H – 1-hr TSP monitoring results and graphical presentation

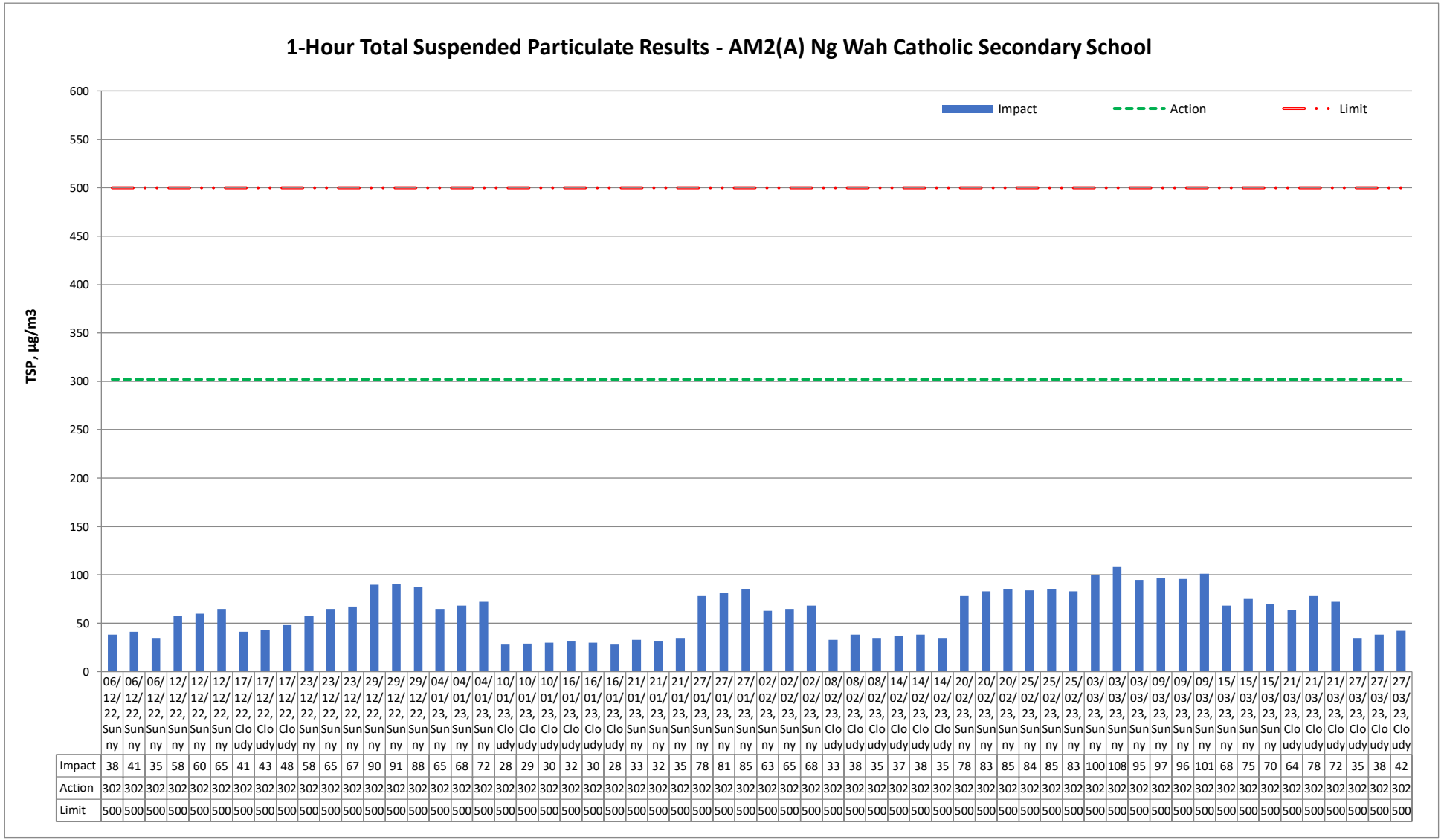
Location:
AM2(A) – Ng Wah Catholic Secondary School

Date	Measurement Period			1-hr TSP concentration, $\mu g/m^3$	Weather
03/03/2023	13:00	-	14:00	100	Sunny
	14:00	-	15:00	108	
	15:00	-	16:00	95	
09/03/2023	9:00	-	10:00	97	Sunny
	10:00	-	11:00	96	
	11:00	-	12:00	101	
15/03/2023	13:00	-	14:00	68	Sunny
	14:00	-	15:00	75	
	15:00	-	16:00	70	
21/03/2023	13:00	-	14:00	64	Cloudy
	14:00	-	15:00	78	
	15:00	-	16:00	72	
27/03/2023	9:00	-	10:00	35	Cloudy
	10:00	-	11:00	38	
	11:00	-	12:00	42	
Maximum				108	
Minimum				35	
Average				76	
Action Level				302	
Limit Level				500	

Location:
AM3 -
Sky Tower

Date	Measurement Period			1-hr TSP concentration, $\mu g/m^3$	Weather
03/03/2023	9:00	-	10:00	87	Sunny
	10:00	-	11:00	89	
	11:00	-	12:00	91	
09/03/2023	13:00	-	14:00	94	Sunny
	14:00	-	15:00	96	
	15:00	-	16:00	99	
15/03/2023	9:00	-	10:00	84	Sunny
	10:00	-	11:00	87	
	11:00	-	12:00	90	
21/03/2023	13:00	-	14:00	41	Cloudy
	14:00	-	15:00	44	
	15:00	-	16:00	46	
27/03/2023	13:00	-	14:00	33	Cloudy
	14:00	-	15:00	35	
	15:00	-	16:00	36	
Maximum				99	
Minimum				33	
Average				70	
Action Level				301	
Limit Level				500	

1-hour average TSP



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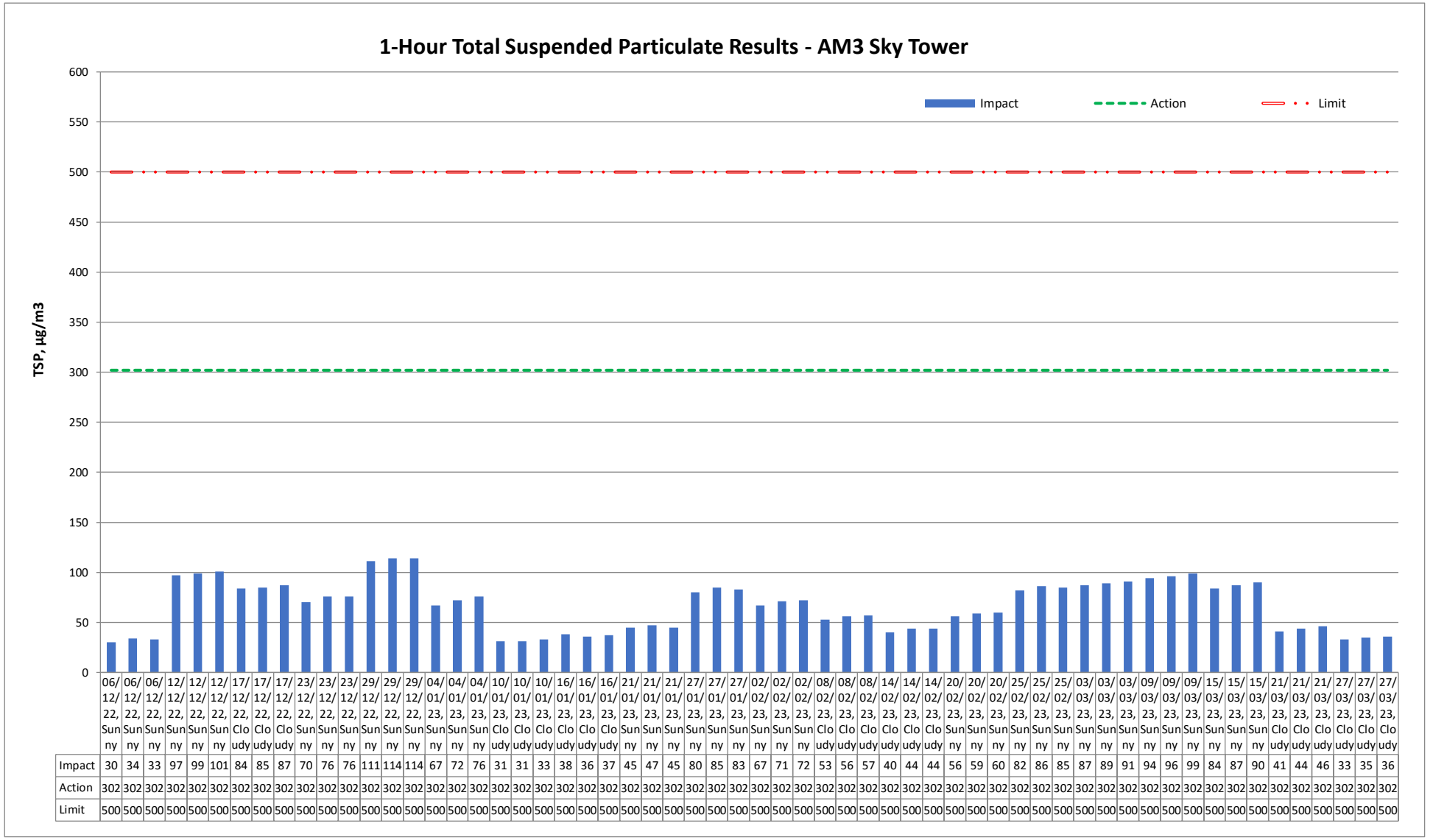
Impact	38	41	35	58	60	65	41	43	48	58	65	67	90	91	88	65	68	72	28	29	30	32	30	28	33	32	35	78	81	85	63	65	68	33	38	35	37	38	35	78	83	85	84	85	83	100	108	95	97	96	101	68	75	70	64	78	72	35	38	42
Action	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302
Limit	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500



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Impact	30	34	33	97	99	101	84	85	87	70	76	76	111	114	114	67	72	76	31	31	33	38	36	37	45	47	45	80	85	83	67	71	72	53	56	57	40	44	44	56	59	60	82	86	85	87	89	91	94	96	99	84	87	90	41	44	46	33	35	36
Action	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302
Limit	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500

Major Construction Activities	Reporting Period			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for Road L16	✓	✓	✓	✓
Construction works for Olympic Avenue	✓	✓	✓	✓
Construction works for additional run-in at Road L7	✓	✓		
Construction of gantry footing at launching shaft for subway SB-01		✓	✓	
Dismantling of gantry crane at casting yard	✓	✓		
ELS and excavation works at Sa Po Road	✓	✓	✓	
ELS and excavation works for retrieving shaft at Sa Po Road				✓
ELS and excavation works for lift and staircase of LW-02		✓		
ELS modification at launching shaft for SB-01			✓	
Post-piling tests and proof drilling for LW02 lift and staircase	✓			
Pre-bored socket H-pile construction works for Slip Road S14	✓	✓	✓	✓
Pile cap construction works for lift and staircase of LW-02			✓	
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
Erection of gantry crane at launching shaft for SB-01			✓	
RC construction at launching shaft for subway SB-01	✓	✓		
RC construction for decking of LW-02				✓
Construction works for Pedestrian Street No. 2	✓			
RC construction for Subway KS10 Lift and Staircase	✓	✓	✓	✓
RC construction works for lift and staircase of LW-02				✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Steel back thrust construction at launching shaft for SB-01				✓
Erect gantry crane at launching shaft for SB-01				✓
Assembly of RTBM at launching shaft for SB-01				✓

Factors might affect the monitoring results	Reporting Period			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

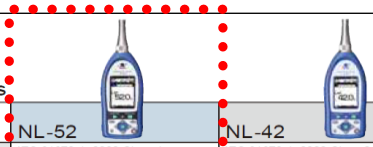
Appendix I – Event and Action Plan for air quality

Event	Action			
	ET	**IEC**	**Supervisor / ER**	**Contractor**
Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	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.	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.	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.	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	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	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	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	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.	implemented; 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	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.	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.	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.	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

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
	CE Marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC), WEEE Directives, Chinese RoHS (export model for China only)	
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} Δ-time-weighted equivalent continuous sound level: $L_{A\Delta eq}$ ＊2 Maximum Δ-time-weighted equivalent continuous sound level: $L_{A\Delta max}$ ＊2 The power average of the maximum level of each 5 second interval: L_{Atm5} 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_{Atm5} 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
Microphone 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	19 dB or less
Inherent noise C-weighting	25 dB or less	27 dB or less
Inherent noise Z-weighting	30 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 μs (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.	
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	

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	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
Type of data 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 ℃)	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 ℃
Ambient conditions 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×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).

＊ Windows is a trademark of Microsoft Corporation.
＊ Specifications subject to change without notice.

ISO 14001 RION CO., LTD.
ISO 9001 RION CO., LTD.

Distributed by:

RION CO., LTD.
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Tel: +81-42-359-7888 Fax: +81-42-359-7442

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 1212.PD

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：2HB22001076-0003
Certificate No.

CNAS 中国认可 国际互认 校准 CALIBRATION CNAS L13344

委托单位：Client	Castco Testing Centre Limited
仪器名称：Description	Sound Level Meter
型号规格：Model/Type	NL-52
制造商：Manufacturer	RION
机身号：Serial No.	00976204
管理号：Asset No.	AAST-SLM-11
接收日期：Rec. Date	2022-07-21
校准日期：Cal. Date	2022-08-03
签发日期：App. Date	2022-08-04
建议校准周期：Reference Cal. Period	12个月(12 months)
结论：Conclusion	所校准项目合格(Passed at Calibration Items)

校准：Calibrated by 赵文钰
核验：Inspected by 钟灏
签发：Approved by 郑木为
印章：Stamp

赛宝计量检测中心
广州总部地址：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
Service Tel: 020-87237633 Fax: 020-87236189
Complaint Tel: 020-87236896
Email: cal@ceprei.com
Website: www.ceprei-cal.com

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.)。

3. 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)
步进衰减器	4GC22000181-0032/2023-04-18/赛宝(广州)	±3dB	（0～110）dB/10dB step @(DC～1GHz)
声校准器	4GC21000572-0101/2022-12-07/赛宝(广州)	1级 First Level	31.5Hz～16kHz
PULSE分析系统	4GC22000014-0140/2023-01-15/赛宝(广州)	频率:U_{rel}=0.001%,k=2;电压:U_{rel}=0.04%,k=2	频率:0.001Hz~51.2kHz,电压:(1×10^{-5}～30)V
数字多用表	4GC21000526-0026/2022-11-30/赛宝(广州)	DCV：±0.0035%；ACV：±0.06%；DCI：±0.05%；ACI：±0.1%；R：±0.01%；f：±0.001%	DCV:(0～1000)V；ACV:(0.001～750)V@(3Hz～300kHz)；DCI:(0～3)A；ACI:(0～3)A@(3Hz～5kHz)；R:(0～100)MΩ；f:3Hz～300kHz
正弦信号发生器	4GC21000496-0024/2022-11-01/赛宝(广州)	f：±1mHz；失真度Distortion：<-70dB	f：0.001Hz～200kHz；U：100μV～5Vrms
标准传声器	GFJGJL1001220311961/2023-03-27/航空304所	U=(0.05～0.20)dB（k=2）	10Hz～20kHz
前置放大器	GFJGJL1001220311960/2023-03-27/航空304所	U=0.3dB（k=2）	（10～50000）Hz

4. 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

5. 环境条件(Environmental conditions)：
温度(Temperature)：23.2℃ 相对湿度(Relative Humidity)：58%

6. 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%.

7. 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.

8. 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。

CEPREI

证书编号(Certificate No.)：2HB22001076-0003

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) (dB)	校准前示值 (Before Calibration) (dB)	校准后示值 (After Calibration) (dB)	U (k=2) (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

起始点指示声级(Sound Level Indication of Start Point):	90.0	dB
起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):	-0.2	dB
U (k=2)	0.6	dB
上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB):	-0.2	dB
U (k=2)	0.6	dB
起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):	-0.2	dB
U (k=2)	0.6	dB
下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB):	-0.2	dB
U (k=2)	0.6	dB

3.2 其它级量程 (Other Range) 频率(Frequency): 1000Hz

起始点指示声级(Sound Level Indication of Start Point):	90.0	dB
起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):	-0.1	dB
U (k=2)	0.4	dB
上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB):	-0.1	dB
U (k=2)	0.4	dB
起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):	-0.1	dB
U (k=2)	0.4	dB
下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB):	-0.1	dB
U (k=2)	0.4	dB

CEPREI

证书编号(Certificate No.)：2HB22001076-0003

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	1.0	1.2	-0.2	±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	-18.5	-9.3	-9.2	+3.0 ~ -∞	P	1.0

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证书编号(Certificate No.)：2HB22001076-0003

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	-4.2	-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

Catalogue of Sound Calibrator	Calibration Certificate of Sound Calibrator

For microphone calibration **NC-74**

How to use

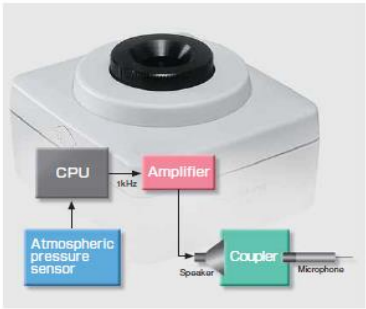
Carefully insert the microphone all the way into the coupler of the NC-74. Then simply turn the power on to apply a constant sound pressure level to the diaphragm of the microphone.

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 C1515:2004 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-53A UC-52 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 × 2	
Dimensions, mass	Approx. 49 (H) × 80 (W) × 74 (D) mm Approx. 200 g (including batteries)	
Supplied accessories	Case × 1 IEC LR6 (size AA) alkaline battery × 2 1/2-inch microphone adapter NC-74-002 × 1	

* Specification subject to change without notice.

ISO 14001 RION CO., LTD.
ISO 9001 RION CO., LTD.

RION CO., LTD.
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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：2HB22001358-0007
Certificate No.

CNAS 中国认可 国际互认 校准 CALIBRATION CNAS L13344

委托单位：Client	Castco Testing Centre Limited		
仪器名称：Description	Sound Level Calibrator		
型号规格：Model/Type	NC-74		
制造商：Manufacturer	RION		
机身号：Serial No.	34678556		
管理号：Asset No.	AAST-SLC-06		
接收日期：Rec. Date	2022-08-24	校准日期：Cal. Date	2022-09-14
签发日期：App. Date	2022-09-15	建议校准周期：Reference Cal. Period	12个月(12 months)
结论：Conclusion	所校准项目合格(Passed at Calibration Items)		

校准：Calibrated by 赵文钰
核验：Inspected by 钟灏
签发：Approved by 郑木方
印章：Stamp

赛宝计量检测中心
广州总部地址：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
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Service Tel: 020-87237633 Fax: 020-87236189
Complaint Tel: 020-87236896
Email: cal@ceprei.com
Website: www.ceprei-cal.com

第 1 页,共 5 页
Page of

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. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes)：
- JJG 176-2005 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：0～10%，(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.)。

3. 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)
标准传声器(2246093)	GFJGJL1001220311961/2023-03-27/航空304所	U=(0.05~0.20)dB（k=2）	10Hz～20kHz
前置放大器(2239843)	GFJGJL1001220311960/2023-03-27/航空304所	频率响应：±0.1dB	（10～50000）Hz
PULSE分析系统(3160-I 06540)	4GC22000014-0140/2023-01-15/赛宝(广州)	频率:U_{rel}=0.001%,k=2;电压:U_{rel}=0.04%,k=2	频率:0.001Hz~51.2kHz,电压:(1×10^{-5}～30)V

4. 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

5. 环境条件(Environmental conditions)：
温度(Temperature)：23.8℃　　相对湿度(Relative Humidity)：61%

6. 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%.

7. 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.

8. 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.

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中校准结果准确度的因素和缺陷。

There are no factor and defect that affect the calibration result accuracy of the certificate.

2 声压级 (Sound Pressure Level)

规定声压级 (Prescribed SPL) (dB)	测量声压级 (Measured SPL) (dB)	声压级差的绝对值 (Absolute value of SPL) (dB)	允许范围 (Limit) (dB)	结论 (Pass/Fail)	U (k=2) (dB)
94	93.93	0.07	≤0.40	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.) (Hz)	测量频率 (Measured Fre.) (Hz)	频率误差的绝对值 (Absolute value of Fre.) (%)	允许范围 (Limit) (%)	结论 (Pass/Fail)	U_{rel} (k=2) (%)
1000	1003.7	0.37	≤1.00	P	0.10

4 总失真 (Distortion)

规定声压级 (Prescribed SPL) (dB)	规定频率 (Measured Fre.) (Hz)	总失真 (Distortion) (%)	允许范围 (Limit) (%)	结论 (Pass/Fail)	U_{rel} (k=2) (%)
94	1000	0.02	≤3.00	P	5.0

以下空白/No data hereafter

Catalogue of Air Flow Meter (TSI TA440)	Calibration Certificate of Air Flow Meter

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 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

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 6,000 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/°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.

Specifications subject to change without notice.

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AIRFLOW INSTRUMENTS

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)

CALIBRATION

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

ilac-MRA HKAS ACCREDITED Certificate #3815.01

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 %	JJG 956-2013
1.0	0.99	-1.0	3.6	± 5 %	JJG 956-2013
2.0	2.03	1.5	3.6	± 5 %	JJG 956-2013
5.0	5.07	1.4	3.6	± 5 %	JJG 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

Checked and Approved By: Warren Yeung

Company Chop: Cal Lab Limited 校正實驗室有限公司

Certificate Issue Date: 13 January 2023

CT-BEG-03

*** End of Certificate ***

Appendix K – Noise monitoring results and graphical presentation

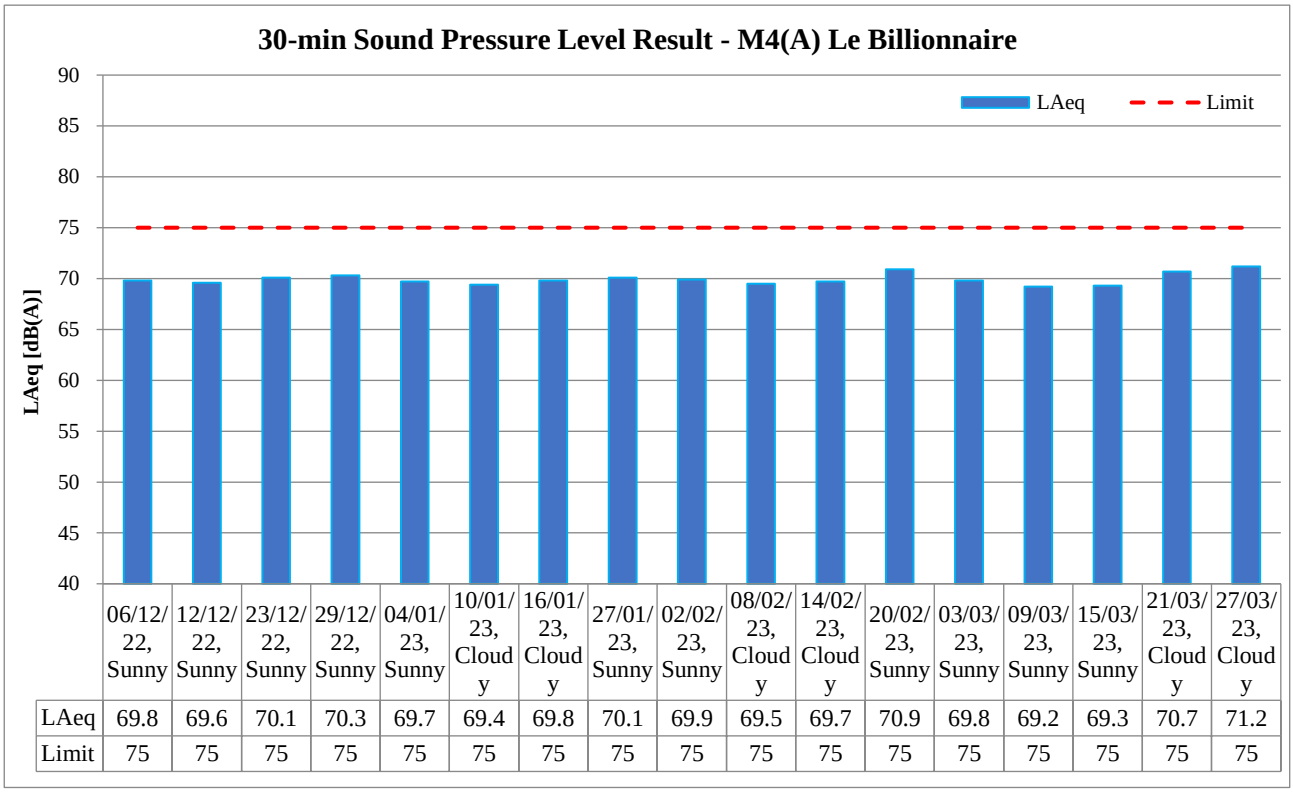
M4(A) – Le Billionnaire

Date	Temp (°C)	Weather	Measured Noise Level at M4(A), dB(A)						Limit
			Time			Baseline	L_{Aeq}	L_{A10}	L_{A90}	
03/03/2023	21.1	Sunny	9:05	-	9:35	69.5	69.8	71.3	68.1	75
09/03/2023	26.0	Sunny	13:10	-	13:40	69.5	69.2	70.1	67.5	75
15/03/2023	23.5	Sunny	13:05	-	13:35	69.5	69.3	70.5	67.6	75
21/03/2023	25.2	Cloudy	9:15	-	9:45	69.5	70.7	71.6	69.2	75
27/03/2023	17.9	Cloudy	13:00	-	13:30	69.5	71.2	72.7	69.5	75
			Maximum				71.2			
			Minimum				69.2			
			Average				70.1			

M5(A) – Prince Ritz

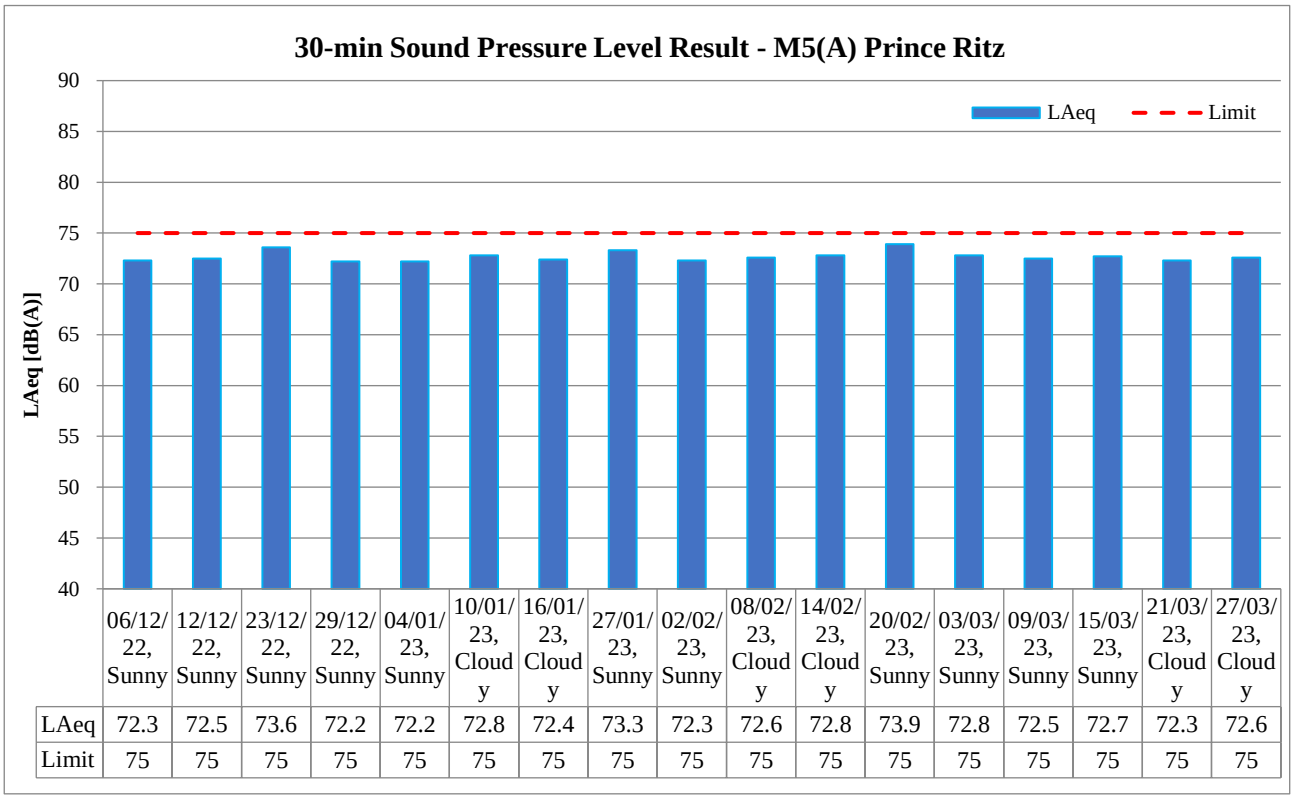
Date	Temp (°C)	Weather	Measured Noise Level at M5(A), dB(A)						Limit
			Time			Baseline	L_{Aeq}	L_{A10}	L_{A90}	
03/03/2023	21.1	Sunny	10:10	-	10:40	72.5	72.8	74.8	69.6	75
09/03/2023	26.0	Sunny	14:25	-	14:55	72.5	72.5	74.1	69.3	75
15/03/2023	23.5	Sunny	14:25	-	14:55	72.5	72.7	74.5	69.5	75
21/03/2023	25.2	Cloudy	10:30	-	11:00	72.5	72.3	74.2	68.7	75
27/03/2023	17.9	Cloudy	14:32	-	15:02	72.5	72.6	74.6	69.0	75
			Maximum				72.8			
			Minimum				72.3			
			Average				72.6			

$L_{Aeq, 30\text{-}min}$ graphical results of M4(A) – Le Billionnaire



	06/12/22, Sunny	12/12/22, Sunny	23/12/22, Sunny	29/12/22, Sunny	04/01/23, Sunny	10/01/23, Cloudy	16/01/23, Cloudy	27/01/23, Sunny	02/02/23, Sunny	08/02/23, Cloudy	14/02/23, Cloudy	20/02/23, Sunny	03/03/23, Sunny	09/03/23, Sunny	15/03/23, Sunny	21/03/23, Cloudy	27/03/23, Cloudy
LAeq	69.8	69.6	70.1	70.3	69.7	69.4	69.8	70.1	69.9	69.5	69.7	70.9	69.8	69.2	69.3	70.7	71.2
Limit	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75

$L_{Aeq, 30\text{-}min}$ graphical results of M5(A) – Prince Ritz



	06/12/22, Sunny	12/12/22, Sunny	23/12/22, Sunny	29/12/22, Sunny	04/01/23, Sunny	10/01/23, Cloudy	16/01/23, Cloudy	27/01/23, Sunny	02/02/23, Sunny	08/02/23, Cloudy	14/02/23, Cloudy	20/02/23, Sunny	03/03/23, Sunny	09/03/23, Sunny	15/03/23, Sunny	21/03/23, Cloudy	27/03/23, Cloudy
LAeq	72.3	72.5	73.6	72.2	72.2	72.8	72.4	73.3	72.3	72.6	72.8	73.9	72.8	72.5	72.7	72.3	72.6
Limit	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75

Major Construction Activities	Reporting Period			
	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for Road L16	✓	✓	✓	✓
Construction works for Olympic Avenue	✓	✓	✓	✓
Construction works for additional run-in at Road L7	✓	✓		
Construction of gantry footing at launching shaft for subway SB-01		✓	✓	
Dismantling of gantry crane at casting yard	✓	✓		
ELS and excavation works at Sa Po Road	✓	✓	✓	
ELS and excavation works for retrieving shaft at Sa Po Road				✓
ELS and excavation works for lift and staircase of LW-02		✓		
ELS modification at launching shaft for SB-01			✓	
Post-piling tests and proof drilling for LW02 lift and staircase	✓			
Pre-bored socket H-pile construction works for Slip Road S14	✓	✓	✓	✓
Pile cap construction works for lift and staircase of LW-02			✓	
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
Erection of gantry crane at launching shaft for SB-01			✓	
RC construction at launching shaft for subway SB-01	✓	✓		
RC construction for decking of LW-02				✓
Construction works for Pedestrian Street No. 2	✓			
RC construction for Subway KS10 Lift and Staircase	✓	✓	✓	✓
RC construction works for lift and staircase of LW-02				✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Steel back thrust construction at launching shaft for SB-01				✓
Erect gantry crane at launching shaft for SB-01				✓
Assembly of RTBM at launching shaft for SB-01				✓

Factors might affect the monitoring results	Reporting Period			
	Dec 2022	Jan 2023	Feb 2023	Mar 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	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. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly; 3. Advise the Supervisor / ER on the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Submit noise mitigation proposal to IEC and Supervisor / ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified.)
Limit Level being exceeded	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	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. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the	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. (The above actions should be

Event	Action			
	ET	**IEC**	**Supervisor / ER**	**Contractor**
	Contractor's remedial actions and keep IEC, EPD, and Supervisor /ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified.)		exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified.)	taken within 2 working days after the exceedance is identified.)

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													
MAY													
JUNE													
SUB-TOTAL	2.27	0.00	2.27	0.00	0.25	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.03
JULY													
AUG													
SEPT													
OCT													
NOV													
DEC													
TOTAL	2.27	0.00	2.27	0.00	0.25	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.03

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~~	☑	☐	☐	
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.~~	☑	☐	☐	
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.	☑	☐	☐	
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.~~	☑	☐	☐	
S8.8	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.	☑	☐	☐	
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.	☑	☐	☐	
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.	☑	☐	☐	
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.	☑	☐	☐	
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	*Drainage* 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	*Sewage Effluent* 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.	☑	☐	☐	
S8.8	Stormwater Discharges Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	☑	☐	☐	
S8.8	Debris and Litter 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	☑	☐	☐	

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.	☑	☐	☐	
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.	☑	☐	☐	
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.	☑	☐	☐	
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	☑	☐	☐	
S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	☐	☑	☐	
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	☐	☑	☐	
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~~.	☐	☑	☐	
	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.	☑	☐	☐	
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	☐	☑	☐	
	Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures	☐	☑	☐	
	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	☑	☐	☐	
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Separation of chemical wastes for special handling and appropriate treatment	☑	☐	☐	
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)~~	☐	☑	☐	

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	☑	☐	☐	
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~~	☐	☑	☐	
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	☑	☐	☐	
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 *Waste Disposal (Chemical Waste) (General) Regulation*	☑	☐	☐	
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.	☐	☑	☐	
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.	☐	☑	☐	
S6.8	Misting for the dusty material should be carried out before being loaded into the vehicle.	☑	☐	☐	
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.	☑	☐	☐	
S6.8	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	☑	☐	☐	
S6.8	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~~	☐	☑	☐	
S6.8	Vehicle washing facilities should be provided at every vehicle exit point	☑	☐	☐	
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.	☐	☑	☐	
S6.8	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.	☐	☑	☐	

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.	☑	☐	☐	
S6.8	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	☐	☑	☐	
S6.5	8 times daily watering of the work site with active dust emitting activities.	☐	☑	☐	

Appendix P – Summaries of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution

Reporting Month: March 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