



Date: 19 August 2024

Your ref:

Our ref: PL-202408031

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,

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 (July 2024)

Reference is made to the Monthly EM&A Report (July 2024) (Version 1.1) issued by the Environmental Team on 19 August 2024.

Please be informed that we have no adverse comment on the captioned submission. We hereby verify the Monthly EM&A Report (July 2024) 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

CEDD Attn.: Mr. Mr. Michael So c.c. By email Ka Shing Attn.: Mr. Chan Pang (ETL) By email

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

July 2024

(Version 1.1)

Certified By:

(Environmental Team Leader)

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EXECUTIVE SUMMARY

1. This is the 42nd Monthly Environmental Monitoring & Audit (EM&A) report which summarises the findings of the EM&A Programme during the reporting period from 1 to 31 July 2024.

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

	Danamatan	No. of Ex	ceedance	Action Taken			
Parameter		Action Level	Limit Level	Action Taken			
	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	NA	NA	NA	NA
of summons				
and				
successful				
prosecutions				
were				
received in				
the reporting				
month.				

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:
 - Dismantle of temporary steel decking across Kai Tak River at LW02
 - RC Construction for Kerb of Elevated Walkway LW-02
 - Construction of LW02 structural steel roof
 - Installation of glass bracket of Lift at LW02 and glass panels
 - Construction of Public Lighting at LW02
 - Construction of headwall at Subway SB-01 Retrieval Shaft
 - Construction of Lift Shaft for Subway SB-01

- Road and Drain Construction works for Road L16, Commercial Street and Road D1
- Construction works for DCS Chamber 2A5A, 2A4 and pipe laying
- Glazing installation for KS10 Lift
- Louvre installation for KS10 lift
- Road and drain construction works at Olympic Avenue
- Renovation works for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS10
- Construction of Parapet for S14
- Construction of bridge deck of S14
- Drainage construction and backfilling works for retaining wall of S14
- Drainage construction works at PS2 and PS4

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
Construction of LW-02 structural steel roof	Noise and Air Quality
Installation of Canopy at LW-02	Noise and Air Quality
Construction of Pillar box at LW-02	Noise and Air Quality
Lift installation at LW-02	Noise and Air Quality
Installation of glass panels and aluminum panels of LW-02	Noise and Air Quality
Installation of glass balustrade at LW02	Noise and Air Quality
Tiling works at LW02	Noise and Air Quality
Construction of headwall at Subway SB-01 Retrieval Shaft	Noise and Air Quality
Construction of mass concrete for raising lift lobby and accessible ramp inside Subway SB-01	Noise and Air Quality
Finishing works of Subway SB-01	Noise and Air Quality
Installation of steel frame for lift tower of Subway SB-01	Noise and Air Quality
Road and drain construction works for Road L16, Road L9 and Road D1	Noise and Air Quality
Construction works for DCS chambers 2A5A, 2A4 and pipe laying	Noise and Air Quality
Road and drain construction works at Olympic Avenue	Noise and Air Quality
Lift installation for Subway KS10	Noise and Air Quality
Renovation works for existing Subway KS10	Noise and Air Quality
Construction of parapet for Slip Road S14	Noise and Air Quality
Backfilling at Retaining Wall for Slip Road S14	Noise and Air Quality
Construction of portal frame for Bridge K73	Noise and Air Quality
Construction of bridge deck of S14	Noise and Air Quality
Drainage construction works at PS2	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 AppendixA. Information of key personnel contact names and telephone numbers are summarized in Table1.1.

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. Stephen Lo	Permit Holder	3579 2470	cclo@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@aurecong roup.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

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Dismantling of temporary steel decking across Kai	Installation of glass glazing for Subway KS10 Lift
Tak River at LW-02	
RC construction for kerb of LW-02	Installation of louvre for Subway KS10 Lift
Construction of LW-02 structural steel roof	Construction of parapet for S14
Installation of glass bracket and glass panel for lifts at LW-02	Construction of bridge deck of S14
Construction of public lighting at LW-02	Drainage construction and backfilling works for
	retaining wall of S14
Construction of headwall at Subway SB-01 Retrieval	Drainage construction works at PS2
Shaft	
Construction of Lift Shaft for Subway SB-01	
Road and drain construction works for Road L16,	
Road L9 and Road D1	
Construction works for DCS Chamber 2A5A, 2A4	
and pipe laying	
Road and drain construction works at Olympic	
Avenue	
Renovation works for Subway KS10 Lift and	
Staircase	
Renovation works for existing subway KS10	

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

EP Condition EP-337/2009	Submission	Submission Date
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 (June 2024)	19 July 2024

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 TSI Model AM510 SidePak Personal Aerosol Meter Monitor		2	1 year
Weather Station	Davis Vantage Pro2 Weather Station	1	6 months

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

Monitoring Methodology and QA/QC Procedure

24-hour TSP Monitoring

Operating/Analytical Procedures

- 2.9 Setup criteria of HVS are shown as follows:
 - A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
 - No two samplers were placed less than 2m apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2m of separation from walls, parapets and penthouses was set for the rooftop samples.
 - A minimum of 2m separation from any supporting structure, measured horizontally was set.
 - No furnaces or incineration flues was nearby.
 - Airflow around the sampler was unrestricted.
 - Any wire fence and gate, to protect the samplers, was not caused any obstruction during monitoring.
 - Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
 - A secured supply of electricity was provided to operate the samplers.
- 2.10 Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m³/min. and 1.7 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.11 For TSP sampling, Glass Fiber Filter Media 8" x 10" having a collection efficiency of > 99 % for particles of 0.3 μ m diameter were used.
- 2.12 The power supply was checked to ensure the sampler worked properly and then placed any filter media at the designated air quality monitoring station.

- 2.13 The filter holding frame was removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure was sufficient to avoid air leakage at the edges.
- 2.15 The shelter lid was closed and secured with the aluminium strip.
- 2.16 The timer was programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17 After sampling, the filter was removed from the HVS and put into a clean and labeled seal plastic bag to avoid cross contamination. The elapsed time was also be recorded. The sampled filters were sent to the HOKLAS accredited or other internationally accredited laboratory for weighting.

Maintenance/Calibration

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

1-hour TSP Monitoring

Measurement Procedures

- 2.19 The measurement procedures of the 1-hour TSP were conducted in accordance with the Manufacturer's Instruction Manual as follows:
 - Set up the dust meter on a tripod at 1.2m level.
 - Turned on the dust meter and check the battery, if too low, change new ones. Pointed the meter to the source area or the planned measurement area.
 - The zero calibration of the instrument was conducted before and after each sampling.
 - TSP levels were recorded for 1-hour with 5-minute data logging interval.

- Recorded down the general meteorological conditions, Test ID no., start/end time, spot check reading at each sampling location for data processing.
- Recorded any activities that may generate dust during measurement period.

Maintenance/Calibration

- 2.20 The following maintenance/calibration are required for the direct dust meters:
 - To validate the accuracy of dust meter, compare the results measured by dust meter and HVS every 12 months throughout all stages of the air quality monitoring.

Wind Data Monitoring

- 2.21 Wind Anemometer was installed at the roof-top of AM2(A) Ng Wah Catholic Secondary School with 10m above ground and clear of constructions or turbulence caused by the buildings.
- 2.22 The wind data was captured by a data logger and the data was downloaded at least once per month for analysis.
- 2.23 The wind data monitoring equipment will be re-calibrated at least once every six months.
- 2.24 Wind direction is divided into 16 sectors of 22.5 degrees each.
- 2.25 Details of weather information during the monitoring period are shown in Appendix F.

Action and Limit Levels

2.26 The Action and Limit Levels of 24-hour average TSP and 1-hour average TSP are summarized in Table 2.4 and Table 2.5 respectively.

Table 2.4 Action and Limit Levels of 24-hour average TSP for Construction Dust Monitoring

Parameter	Parameter Air Monitoring Station		Limit Level, µg/m³	
24 have average TCD	AM2(A)	175	260	
24-hour average TSP	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, μg/m ³	Limit Level, µg/m³
1 hour avances TCD	AM2(A)	302	500
1-hour average TSP	AM3	301	500

Impact Air Quality Monitoring results

2.27 Impact monitoring results for 24-hour average TSP and 1-hour average TSP levels at the designated air quality monitoring stations are summarized in Table 2.6 and Table 2.7 respectively.

Table 2.6 Summary of 24-hour average TSP Monitoring Data during the reporting month

Air Quality Monitoring Station	Average TSP Concentration, µg/m ³	Range, µg/m³	Action Level, μg/m ³	Limit Level, µg/m³
AM2(A)	26	15 – 34	175	260
AM3	55	32 - 78	172	260

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

Air Quality Monitoring Station	Average TSP Concentration, µg/m ³	Range, μg/m ³	Action Level, μg/m ³	Limit Level, μg/m ³
AM2(A)	34	24 – 45	302	500
AM3	53	31 - 77	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.
- 2.33 Impact air quality monitoring were conducted on 5, 11, 17, 23 and 29 July 2024 in the reporting month.

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, $L_{Aeq, 30-minute}$, 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)		I I and	30-minute measurement at each monitoring station between 0700		
M5(A) – Prince Ritz	Podium (Façade)	$L_{ m Aeq}, L_{ m A10}$ and $L_{ m A90}$	- 1900 hrs on normal weekdays (Monday to Saturday) at frequency of once per week.		

- 3.6 The monitoring schedule for reporting month and next month is presented in Appendix C.
- 3.7 Photographic records of the monitoring setup are shown in Appendix D.

Monitoring Equipment

3.8 As referred to the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the IEC 61672-1 (Class 1) standard [this standard replaced the International Electrotechnical Commission Publications 60651:1979 (Type 1) and 60804:1985 (Type 1)] were used for noise monitoring. Table 3.3 summarizes the equipment to be used in the noise monitoring.

Table 3.3 Noise Monitoring Equipment

Equipment	Model	Quantity	Calibration Interval
Sound Level Meter	RION NL52	1	1 year
Sound Level Calibrator	RION NC74	1	1 year
Air Flowmeter	TSI TA440 Air Velocity	1	1 year

3.9 Calibration certificates, catalogue of equipment are given in Appendix J.

Monitoring Methodology and QA/QC Procedure

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

- 3.11 No noise measurement was conducted in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. Air flow was measured by air flow meter.
- 3.12 Turned on the sound level meter and check the battery, if too low, change new ones.
- 3.13 Calibration was conducted immediately prior to and after each noise measurement, the accuracy of the sound level meters was checked by using sound calibrator generating 1,000 Hz with 94dB. Measurement data was found to be valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.
- 3.14 Noise level was recorded.
- 3.15 Recorded any activities that may generate noise during measurement period.

Maintenance and Calibration

- 3.16 The microphone of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.17 The sound level meter and sound calibrator were calibrated annually by HOKLAS accredited laboratory or equivalent.

Action and Limit Levels

3.18 The Baseline Noise Levels and Action and Limit Levels for construction noise is presented in Table 3.4.

Table 3.4 Baseline Noise Level and Action and Limit Levels for Construction Noise Monitoring

Time Period	Noise Monitoring Station	Baseline Noise Levels, dB (A)	Action Level	Limit Level ^
0700 – 1900 hrs	M4(A)	69.5	When one	75 JD(A)
on normal weekdays	M5(A)	72.5	documented complaint is received.	75 dB(A)

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

Impact Noise Monitoring results

3.19 Impact noise monitoring results at the designated noise monitoring stations are summarized in Table 3.5 respectively.

Table 3.5 Summary of Noise Monitoring Data during the reporting month

Noise Monitoring Station	Measured L _{Aeq, 30-} min, Average, dB(A)	Measured L _{Aeq, 30} - min, Range, dB(A)	Action Level	Limit Level ^
M4(A)	71.6	71.4–71.8	When one documented	75
M5(A)	73.7	73.4 – 74.0	complaint is received	dB(A)

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

- 3.20 There was no Action and Limit Level exceedance of $L_{Aeq, 30-min}$ recorded during the reporting month.
- 3.21 Graphical presentation and detailed monitoring results are shown in Appendix K.
- 3.22 The Event and Action Plan is provided in Appendix L.
- 3.23 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 3.24 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.
- 3.25 Impact noise monitoring were conducted on 5, 11, 17, 23 and 29 July 2024 in the reporting month.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

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

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

Air Quality Monitoring Station	ASR No. in EIA report	Maximum 24-h	Cumulative our average TSP ntration Scenario 2 (Mid 2013 to Late 2016), µg/m³	Measured 24-hr average TSP in Reporting Month (Jul 2024) µg/m³
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	15 – 34
AM3 - Sky Tower	A40^	106^	138^	32 - 78

Note:

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

Air Quality Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 1-hour average TSP concentration Scenario 1 Scenario 2 (Mid 2009 to Mid 2013), Late 2016), µg/m³ µg/m³		Measured 1-hr average TSP in Reporting Month (Jul 2024) µg/m³
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	24 – 45
AM3 - Sky Tower	A40^	217^	247^	31 - 77

Note:

[^] Prediction results are given in the Table 3.13 of the EIA Report (EIAO Register No. AEIAR-130/2009) for Kai Tak Development.

[^] Prediction results are given in the Table 3.13 of the EIA Report (EIAO Register No. AEIAR-130/2009) for Kai Tak Development.

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Noise Monitoring Station	NSR No. in EIA report	Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour LAeq, 30min, dB(A)	Measured Noise Level in Reporting Month (Jul 2024) L _{Aeq, 30min} , dB(A)
M4(A) – Le Billionnaire	NA	NA	71.4 – 71.8
M5(A) – Prince Ritz	NA	NA	73.4 - 74.0

- 4.2 No prediction in the EIA Report for 24-hour TSP monitoring results at AM2(A).
- 4.3 24-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report.

 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 4.4 No prediction in the EIA Report for 1-hour TSP monitoring results at AM2(A).
- 4.5 1-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report.

 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 4.6 No prediction in the EIA Report for noise monitoring results at M4(A) and M5(A).

5. LANDSCAPE AND VISUAL MONITORING

5.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), Landscape and Visual Monitoring shall be carried out during the construction phase of the Project. Regular impact monitoring will be conducted at least once per week.

Results and Observations

- 5.2 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 5.3 Site inspections were conducted on 4, 11, 18 and 25 July 2024 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
4 Jul 2024	NA	NA	NA
11 Jul 2024	NA	NA	NA
18 Jul 2024	NA	NA	NA
25 Jul 2024	NA	NA	NA

- 5.5 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.6 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in Appendix M shall be performed.

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT

Site Inspection

- 6.1 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 6.2 Site inspections were conducted 4, 11, 18 and 25 July 2024 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			Close-out
Date	Key Observations	Recommendations / Actions	Date /
	1-00		Status
4 Jul 2024	Observation: The vehicles should be restricted to maximum speed of 10 km per hour.	Action Taken: The Sign for vehicle speed limit of 8 km per hour for the vehicles has been properly set up.	Closed out on 11 Jul 2024
11 Jul 2024	Observation: C&D waste found at LW02 shall be removed timely to upkeep the hygiene conditions.	Action Taken: The waste was removed.	Closed out on 18 Jul 2024

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
11 Jul 2024	Observation: The NRMM label on gen-set @SB01 was torn off, such that the information is incomplete, please replace a new one.	Action Taken: The label was replaced.	Closed out on 18 Jul 2024
18 Jul 2024	NA	NA	NA
25 Jul 2024	Observation: The NRMM label on excavator was in wrong colour, please replace a new one.	Action Taken: The NRMM label is in right colour.	Closed out on 1 Aug 2024
25 Jul 2024	Observation: The NRMM label on excavator was in wrong colour, please replace a new one.	Action Taken: The NRMM label is in right colour.	Closed out on 1 Aug 2024

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 From	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
Westawatan Disebanga Liganga undan	WT00037618-2021	29 Mar 2021	31 Mar 2026
Wastewater Discharge License under WPCO	WT00037370-2021	29 Wai 2021	
WICO	WT00038562-2021	15 Jul 2021	31 Jul 2026
Construction Noise Permit	GW-RE0443-24	20 Apr 2024	19 Oct 2024
Construction Noise Permit	GW-RE06505-24	31 May 2024	13 Aug 2024

Implementation Status of Environmental Mitigation Measures

6.7 The Contractor has implemented environmental mitigation measures as stated in the EIA report,

the EP and the EM&A Manual. The implementation status of the mitigation measures is summarized in Appendix O.

Environmental Complaint and Non-compliance

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

Table 6.3 Summary of complaints in the Reporting Month

Date of complaint received	Date of 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	NA	NA	NA	NA
of summons				
and				
successful				
prosecutions				
were				
received in				
the reporting				
month.				

	cumulative envi		ns and notification

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
Construction of LW-02 structural steel roof	Noise and Air Quality
Installation of Canopy at LW-02	Noise and Air Quality
Construction of Pillar box at LW-02	Noise and Air Quality
Lift installation at LW-02	Noise and Air Quality
Installation of glass panels and aluminum panels of LW-02	Noise and Air Quality
Installation of glass balustrade at LW02	Noise and Air Quality
Tiling works at LW02	Noise and Air Quality
Construction of headwall at Subway SB-01 Retrieval Shaft	Noise and Air Quality
Construction of mass concrete for raising lift lobby and accessible ramp inside Subway SB-01	Noise and Air Quality
Finishing works of Subway SB-01	Noise and Air Quality
Installation of steel frame for lift tower of Subway SB-01	Noise and Air Quality
Road and drain construction works for Road L16, Road L9 and Road D1	Noise and Air Quality
Construction works for DCS chambers 2A5A, 2A4 and pipe laying	Noise and Air Quality
Road and drain construction works at Olympic Avenue	Noise and Air Quality
Lift installation for Subway KS10	Noise and Air Quality
Renovation works for existing Subway KS10	Noise and Air Quality
Construction of parapet for Slip Road S14	Noise and Air Quality
Backfilling at Retaining Wall for Slip Road S14	Noise and Air Quality
Construction of portal frame for Bridge K73	Noise and Air Quality
Construction of bridge deck of S14	Noise and Air Quality
Drainage construction works at PS2	Noise and Air Quality

- 7.2 The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:
 - Sufficient watering of the works site with the active dust emitting activities,
 - Limitation of the speed for vehicles on unpaved site roads,
 - Properly cover the stockpiles,
 - Good maintenance to the plant and equipment,
 - Use of quieter plant and Quality Powered Mechanical Equipment (QPME),
 - Provide movable noise barriers,

- Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,
- Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,
- Onsite waste sorting and implementation of trip ticket system,
- Good management and control on construction waste reduction,
- Erection of decorative screen hoarding,
- Strictly following the Environmental Permits and Licenses, and
- Provide sufficient mitigation measures as recommended in Approved EIA Report.
- 7.3 The recommended environmental measures proposed in the EM&A Manual (EIA Register No. AEIAR-130/2009) shall be effectively implemented to minimize the potential environmental impacts. The Contractor is reminded to implement the mitigation measures properly.

Environmental Site Inspection and Monitoring Schedule for next month

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

8. CONCLUSIONS

- 8.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 8.2 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.3 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.4 Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.5 No complaint was received in the reporting month.
- 8.6 No notification of summons and successful prosecutions was received in the reporting month.
- 8.7 Based on the site inspection and audits, impact air quality and noise monitoring results, it was considered that the mitigation measures were effective to control the potential environmental impacts from the Project during the reporting period.

Figure

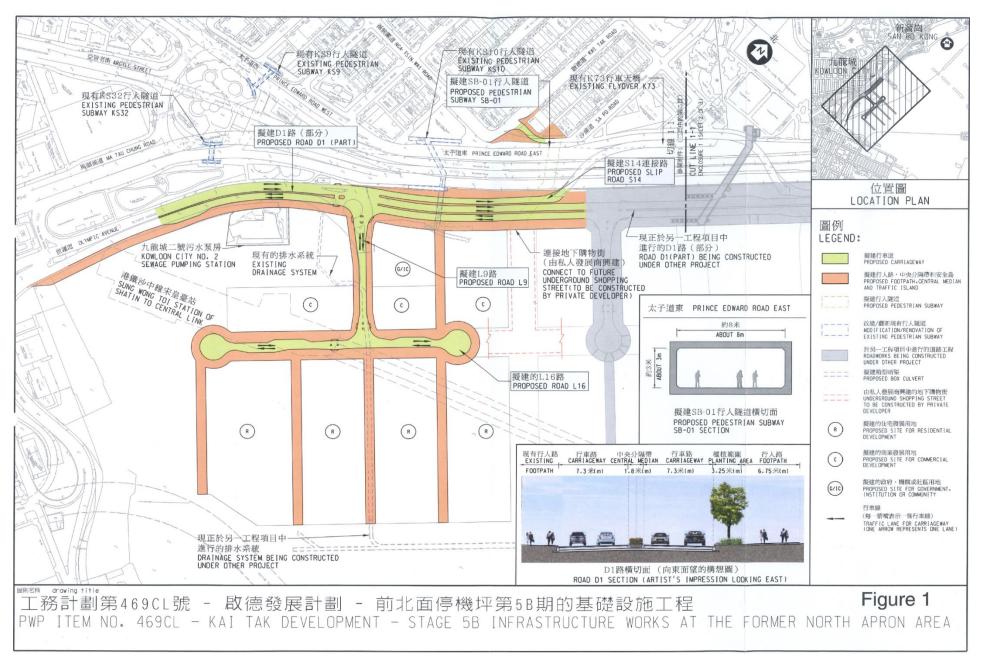


Figure 1 – Proposed works of Contract No. ED/2018/05

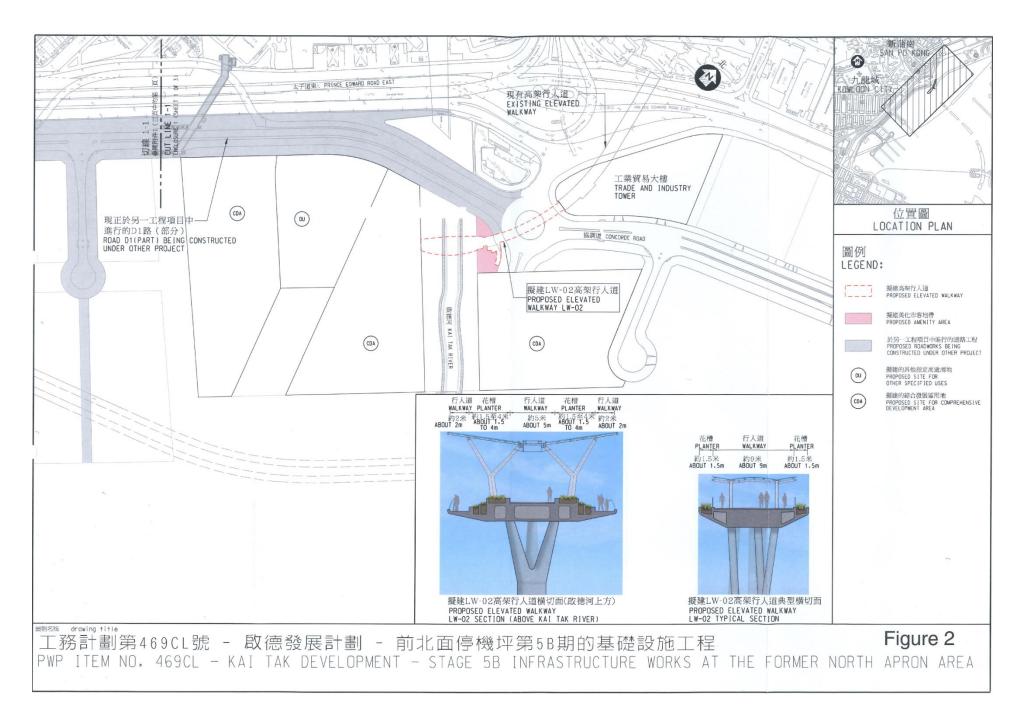


Figure 2 – Proposed works of Contract No. ED/2018/05

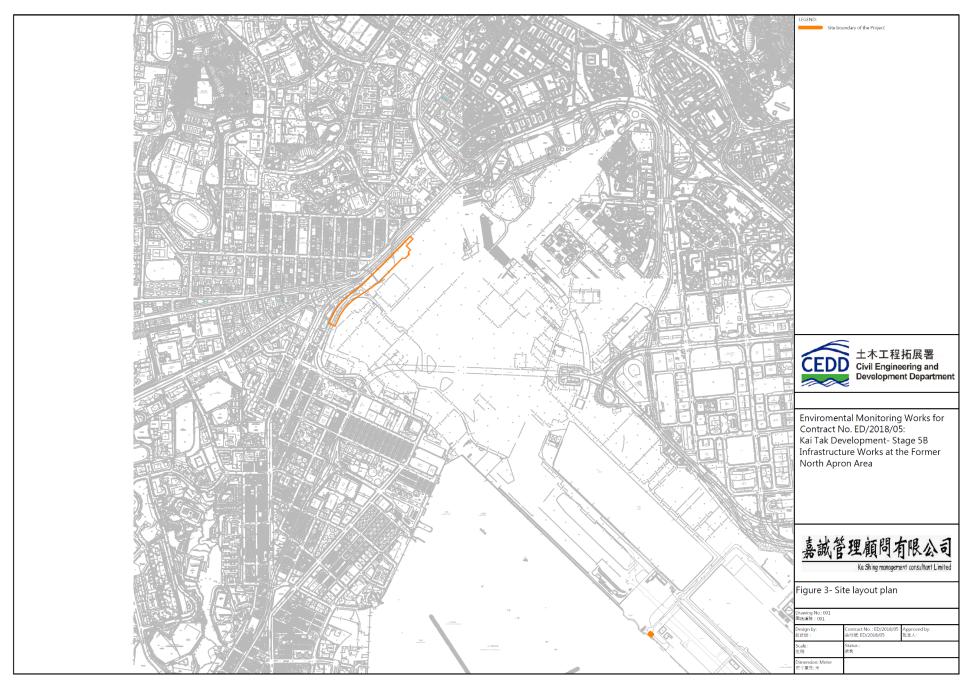


Figure 3 – D1 Road Site Layout Plan

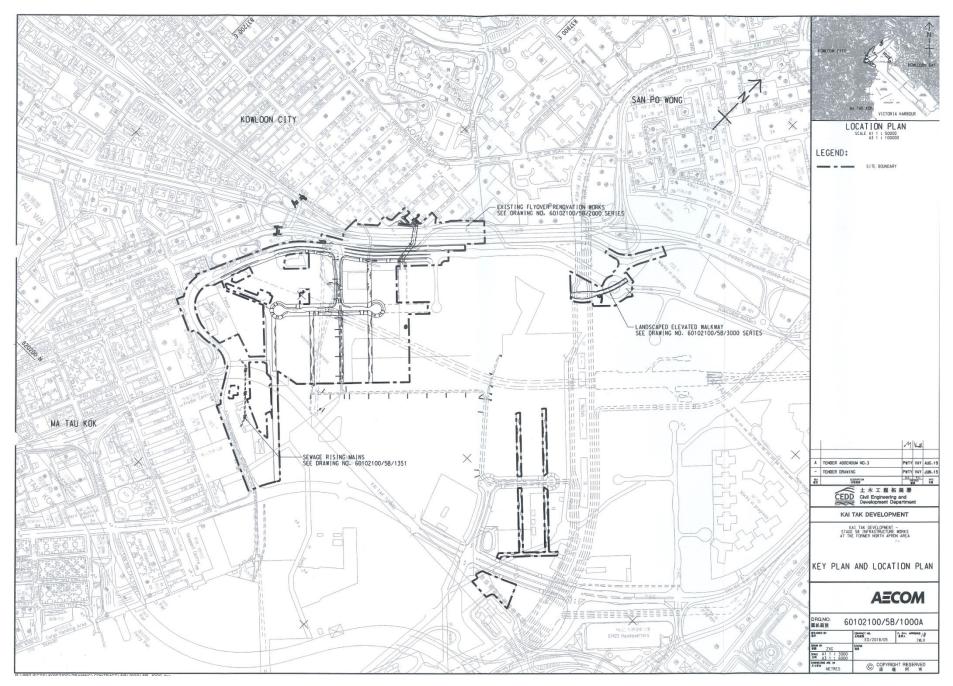


Figure 4 – Site Layout Plan

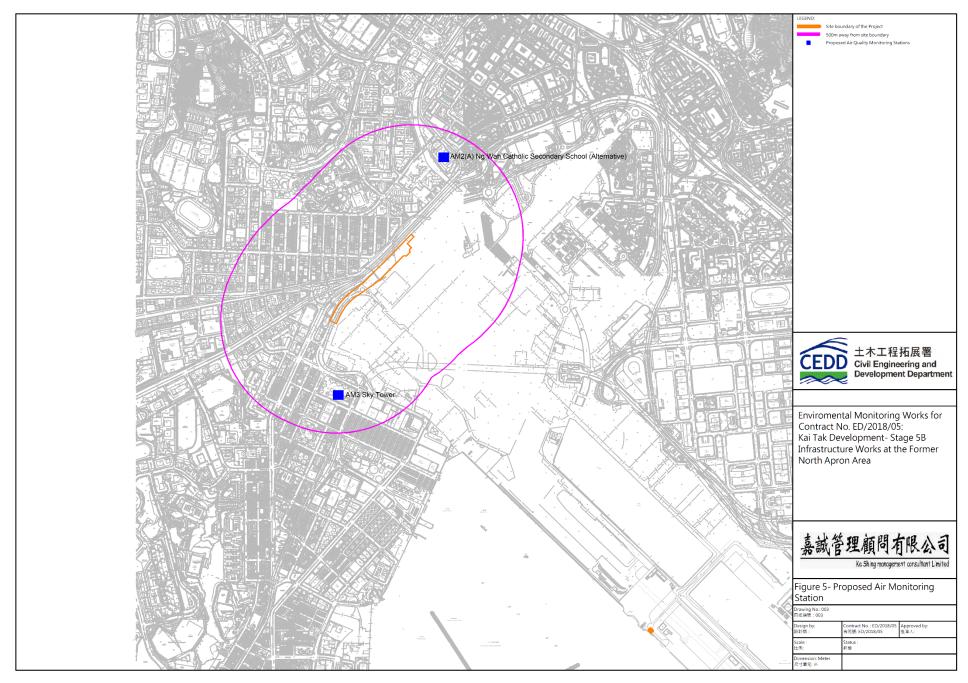


Figure 5 – Air Quality Monitoring Stations

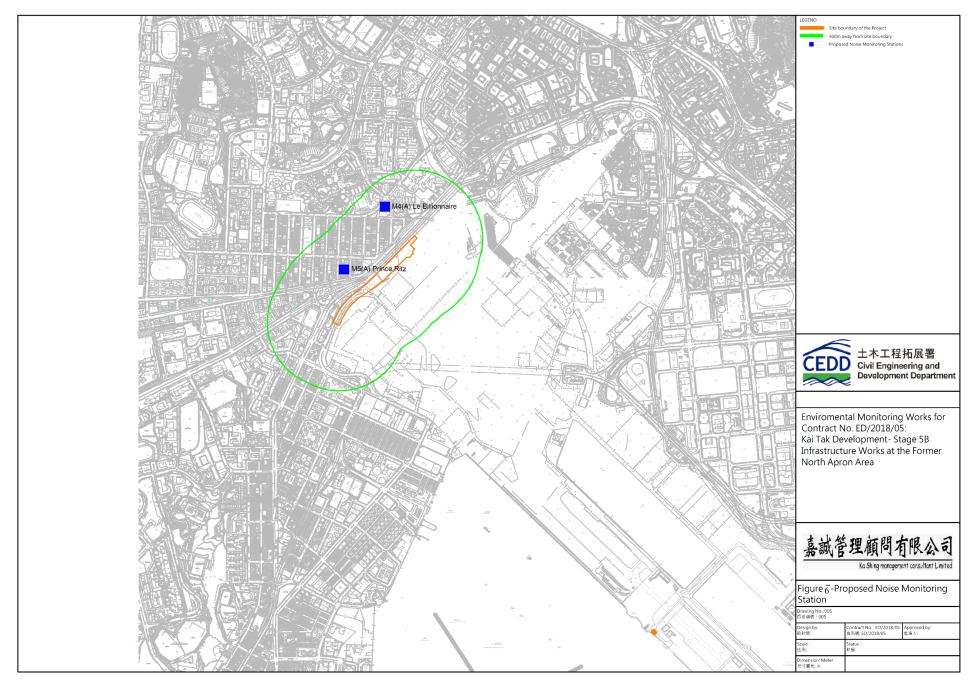
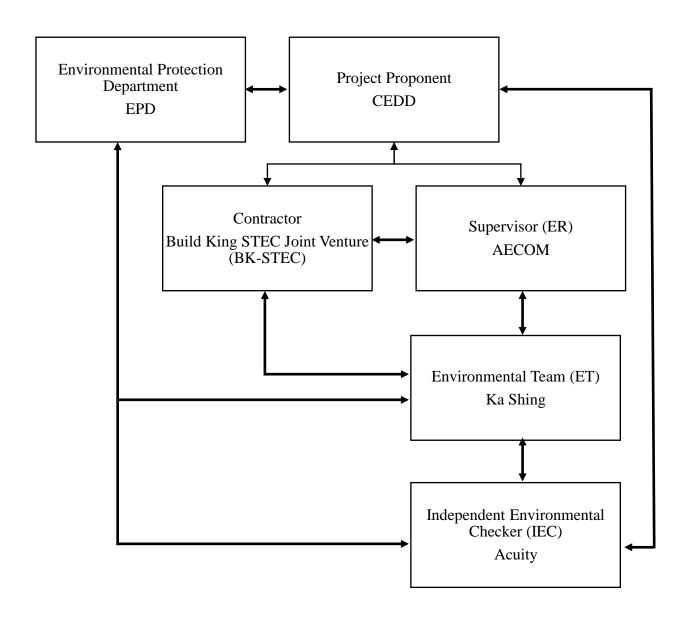
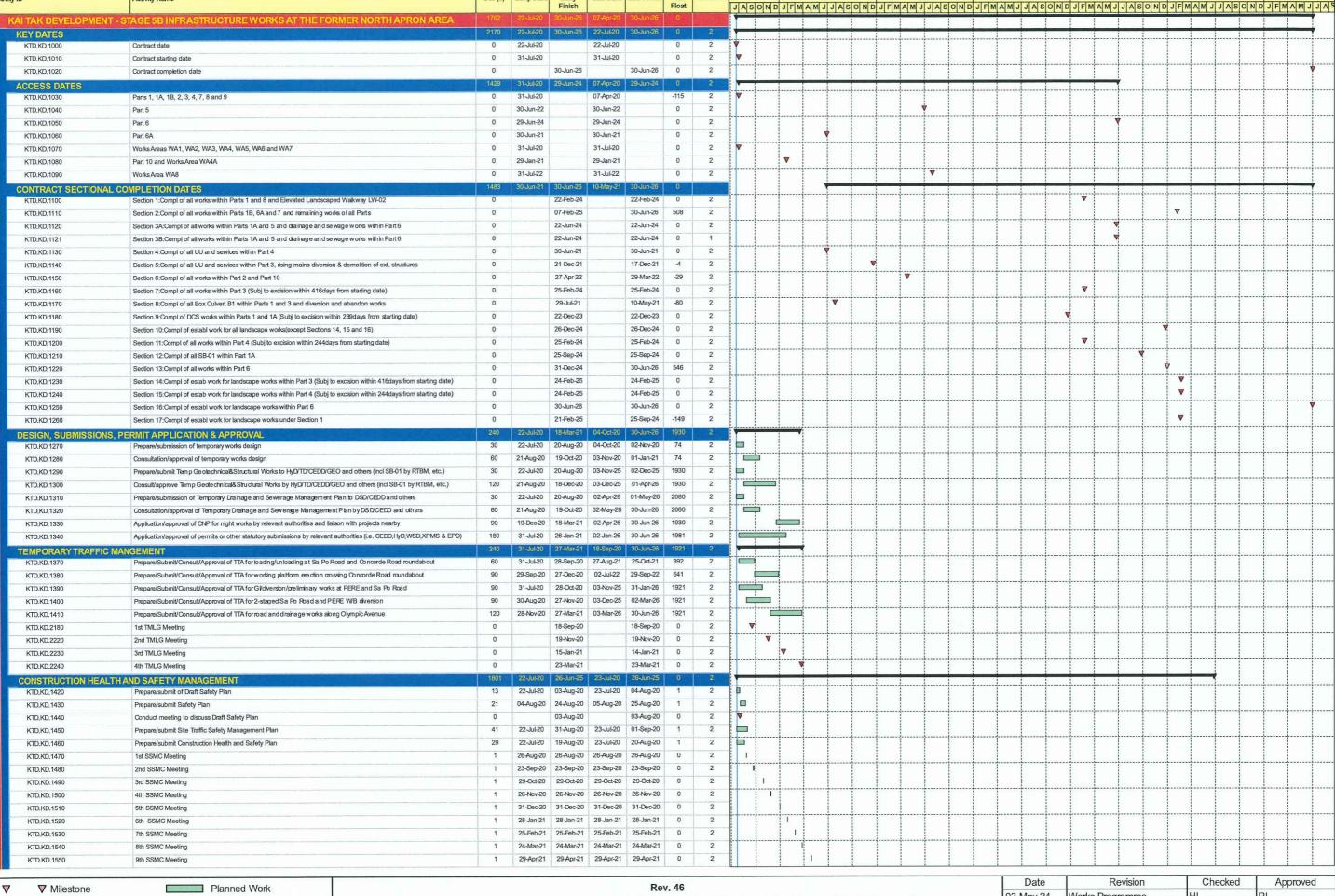


Figure 6 – Noise Monitoring Stations

Appendix A – Organization Chart of EM&A Team



Appendix B – Construction Programme



▼ Willestone Planned Work
▼ Critical Milestone Summary
Critical Remaining Work

ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
(Page 1 of 12)

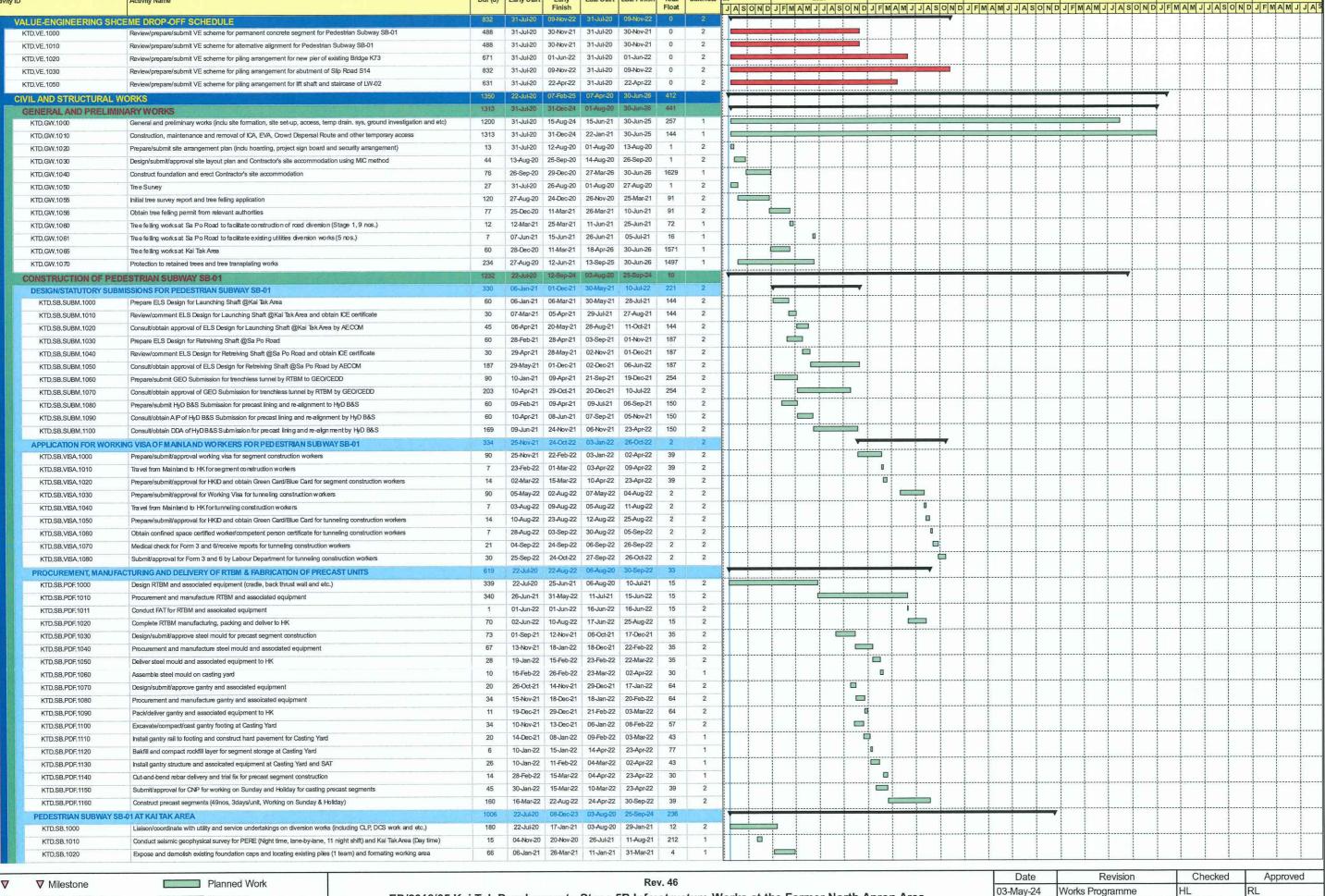
Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL

ctivity ID	Activity Name	Dur (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar		ololul p	ulelad a	2021	alciolul	n delu	202		ID II EI	202		NID II		2024	OND	IIEIM AII	2025 M J J A S C	ND JEN	2026
KTD.KD.1560	10th SSMC Meeting	1	27-May-21		27-May-21	27-May-21		2	JA	SOND	JIFIMIA	MININ	ASONI	JIFIM	AMJ	JASOF	DISTER	AMJ	JASO	ונוטוא	F[M] A[M]	JJAS	UND	J F M A N	INNA	NINI O OLLIN	AMISIS
KTD.KD.1570	11th SSMC Meeting	1	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	0	2				ď							i								
KTD,KD,1580	12th SSMC Meeting	1	29-Jul-21	29-Jul-21	29-Jul-21	29-Jul-21	0	2		11		 T		1							1						
KTD.KD.1590	13th SSMC Meeting	1	26-Aug-21	26-Aug-21	26-Aug-21	26-Aug-21	0	2				1	1						1								
KTD,KD,1600	14th SSMC Meeting	1	30-Sep-21	30-Sep-21	30-Sep-21	30-Sep-21	0	2		11				1				1 1									
KTD,KD,1610	15th SSMC Meeting	1	28-Oct-21	28-Oct-21	28-Oct-21	28-Oct-21	0	2					1			į											
KTD.KD.1620	16th SSMC Meeting	1	25-Nov-21	25-Nov-21	25-Nov-21	25-Nov-21	0	2		1			17	1				1 1			· · · · · · · · · · · · · · · · · · ·	1	1 1			1	
KTD,KD,1630	17th SSMC Meeting	1	30-Dec-21	30-Dec-21	30-Dec-21	30-Dec-21	0	2					1	i		1				1	i						
KTD.KD.1640	18th SSMC Meeting	1	27-Jan-22	27-Jan-22	27-Jan-22	27-Jan-22	0	2						11	1			t-t					1	1			T
KTD.KD.1650	19th SSMC Meeting	1	24-Feb-22				0	2						1													
KTD.KD.1660	20th SSMC Meeting	1	31-Mar-22				0	2						·				 					h				†
		1	28-Apr-22					2																			
KTD.KD.1670	21st SSMC Meeting	,	2					2						·				 					 			 	
KTD.KD.1680	22nd SSMC Meeting	1	26-May-22		-	-		2							,												
KTD.KD.1690	23rd SSMC Meeting	1	30-Jun-22				_							.ļ	ļļ			ļļ					 				-
KTD.KD.1700	24th SSMC Meeting	1		28-Jul-22			0	2				1				1				- 1							
KTD,KD,1710	25th SSMC Meeting	1	25-Aug-22					2										<u> </u>					ļļ				
KTD.KD.1720	26th SSMC Meeting	1	29-Sep-22					2																			
KTD.KD.1730	27th SSMC Meeting	1	27-Oct-22	27-Oct-22	27-Oct-22	27-Oct-22	0	2					<u>l</u>	<u> </u>		1		<u> </u>	<u>i</u>					<u> </u>		<u> </u>	
KTD,KD,1740	28th SSMC Meeting	1	24-Nov-22	24-Nov-22	24-Nov-22	24-Nov-22	0	2												i							
KTD,KD,1750	29th SSMC Meeting	1	29-Dec-22	29-Dec-22	29-Dec-22	29-Dec-22	0	2									1										
KTD.KD.1760	30th SSMC Meeting	1	26-Jan-23	26-Jan-23	26-Jan-23	26-Jan-23	0	2				-	1	1			T									ĺ	
KTD.KD.1770	31st SSMC Meeting	1	23-Feb-23	23-Feb-23	23-Feb-23	23-Feb-23	0	2	2 2							1	1		į								
KTD.KD.1780	32nd SSMC Meeting	1	30-Mar-23				0	2						1				1					1				1
KTD.KD.1790	33rd SSMC Meeting	1	27-Apr-23				0	2				i				ĺ					1						
			25-May-23					2						·	 								 				·
KTD.KD.1800	34th SSMC Meeting						_	2	- [i								
KTD.KD.1810	35th SSMC Meeting	1	29-Jun-23	CASE CONTRACTOR	15.00000000000	1000	0							- 				ļļ				/	ļ‡				-
KTD.KD.1820	36th SSMC Meeting	1	27-Jul-23			27-Jul-23	0	2					į				1		1 .							1	
KTD,KD,1830	37th SSMC Meeting	1	31-Aug-23	31-Aug-23	31-Aug-23	31-Aug-23	0	2		_				ļ	<u> </u>			<u> </u>					ļļ			<u> </u>	ļļ
KTD.KD.1840	38th SSMC Meeting	1	28-Sep-23	28-Sep-23	28-Sep-23	28-Sep-23	0	2										1 1	1	1	į						
KTD,KD,1850	39th SSMC Meeting	1	26-Oct-23	26-Oct-23	26-Oct-23	26-Oct-23	0	2															1	<u> </u>			
KTD.KD.1860	40th SSMC Meeting	1	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	0	2												1							
KTD,KD,1870	41st SSMC Meeting	1	28-Dec-23	28-Dec-23	28-Dec-23	28-Dec-23	0	2								1			1	Ė							
KTD,KD,1880	42nd SSMC Meeting	1	25-Jan-24	25-Jan-24	25-Jan-24	25-Jan-24	0	2						1						1							
KTD.KD.1890	43rd SSMC Meeting	1	29-Feb-24	29-Feb-24	29-Feb-24	29-Feb-24	0	2					ŀ							1	1						
KTD.KD.1900	44th SSMC Meeting	1	28-Mar-24	28-Mar-24	28-Mar-24	28-Mar-24	0	2	-					+				††					1				11
	45th SSMC Meeting	1	25-Apr-24				0	2													1						
KTD.KD.1910			30-May-24				0	2						- 				 					 				
KTD.KD.1920	46th SSMC Meeting		10000	-			0		-[]											i							
KTD.KD.1930	47th SSMC Meeting	1	27-Jun-24				U	2					<u>-</u>	. 				├					 +			 	
KTD,KD,1940	48th SSMC Meeting	1		25-Jul-24			0	2											1	1		1'.				1	
KTD.KD.1950	49th SSMC Meeting	1	67.0			29-Aug-24	0	2										ļļ					<u> </u>				
KTD.KD.1960	50th SSMC Meeting	1	26-Sep-24	26-Sep-24	26-Sep-24	26-Sep-24	0	2											1			1					
KTD.KD.1970	51st SSMC Meeting	1	31-Oct-24	31-Oct-24	31-Oct-24	31-Oct-24	0	2						1				Jl	I				11.1				
KTD,KD,1980	52nd SSMC Meeting	1	28-Nov-24	28-Nov-24	28-Nov-24	28-Nov-24	0	2															1				
KTD,KD,1990	53rd SSMC Meeting	1	26-Dec-24	26-Dec-24	26-Dec-24	26-Dec-24	0	2					1			1			1	į			- 6				
KTD.KD.2000	54th SSMC Meeting	1	30-Jan-25	30-Jan-25	30-Jan-25	30-Jan-25	0	2		1		1	<u> </u>	1		<u>-</u>		1 1	1			-		1			
KTD.KD.2010	55th SSMC Meeting	1	27-Feb-25	27-Feb-25	27-Feb-25	27-Feb-25	0	2								1				ļ				1			
KTD.KD.2020	56th SSMC Meeting	1	27-Mar-25	-				2	-									††					! †				† <u> </u>
		1	CAMERICAN I			24-Apr-25		2	-																		
KTD.KD.2030	57th SSMC Meeting						-	2	-				 	- 	 			 +					 				
KTD.KD.2040	58th SSMC Meeting	1	29-May-25					2	-				1				1						1 1				
KTD.KD.2050	59th SSMC Meeting	1	26-Jun-25					2				<u>.</u>						ļļ		<u> </u>			4				
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KTD,KD,2060	Prepare/submit BM Execution Plan	29				29-Aug-20		2					ļ	.ļ	ļ			ļļ		 			44				ļ
KTD.KD.2070	Prepare/submit Combined Services Drawings and CBWD generated from BIM	44	31-Jul-20	12-Sep-20	01-Aug-20	13-Sep-20	1	2					1	1			1			i							
KTD,KD,2080	Prepare/submit proposal of asset information requirement	364	31-Jul-20	29-Jul-21	01-Aug-20	30-Jul-21	1	2						1		l.		<u>1i</u>					<u>i</u>	Ĺ		L	<u> </u>
KTD,KD,2090	Prepare/submit Asset Data Deliverables for Section 1	60	25-Dec-23	22-Feb-24	02-May-26	30-Jun-26	859	2					1	-						F	3						
KTD.KD.2100	Prepare/submit Asset Date Deliverables for Section 2	60	10-Dec-24	07-Feb-25	02-May-26	30-Jun-26	508	2						-						İ			=			i	
KTD.KD.2110	Prepare/submit Asset Date Deliverables for Section 3	60	23-Jun-24	21-Aug-24	02-May-26	30-Jun-26	678	2		1			1	1	T		1	1			1	<u> </u>	1 1	T		T	1
KTD.KD.2120	Prepare/submit Asset Date Deliverables for Section 4	60	02-May-21	30-Jun-21	02-May-26	30-Jun-26	1826	2					1	1						1							
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KTD.KD.2150	Prepare/submit Asset Date Deliverables for Section 8	60	2000				100000	1				- -			ļ			 									
KTD.KD.2160	D	60	24-Oct-23	ZZ-DeC-23	uz-way-2t	30-Jun-26	-	2	- 8				1	1	1 3	i	1	1	1 1			1	: :	1	1 1	1	
KTD.KD.2160 KTD.KD.2170	Prepare/submit Asset Date Delive rables for Section 9		00 0 00	OF F-1 0	00.44	20 1 00				4			1	;	1 1		i	1 :	9		1		1 1	1	1 1	Si .	
KTD.KD.2160 KTD.KD.2170 KTD.KD.2190	Prepare/submit Asset Date Deliverables for Section 11	60		25-Feb-24			-	2	ļ					<u></u>	ļ			ļļ			-		ļļ				
KTD.KD.2160 KTD.KD.2170		60	28-Jul-24	25-Sep-24	02-May-26	30-Jun-26	643	2													-			1			-
KTD.KD.2160 KTD.KD.2170 KTD.KD.2190	Prepare/submit Asset Date Deliverables for Section 11		28-Jul-24	25-Sep-24	02-May-26		643																				
KTD.KD.2160 KTD.KD.2170 KTD.KD.2190 KTD.KD.2200	Prepare/submit Asset Date Delive rables for Section 11 Prepare/submit Asset Date Delive rables for Section 12	60	28-Jul-24	25-Sep-24	02-May-26	30-Jun-26	643	2																1			
KTD,KD,2160 KTD,KD,2170 KTD,KD,2190 KTD,KD,2200 KTD,KD,2210	Prepare/submit Asset Date Deliverables for Section 11 Prepare/submit Asset Date Deliverables for Section 12 Prepare/submit Asset Date Deliverables for Section 13	60	28-Jul-24	25-Sep-24	02-May-26	30-Jun-26 30-Jun-26	643 546	2						1					Date			Revision			Checked	Ap	pproved
KTD.KD.2160 KTD.KD.2170 KTD.KD.2190 KTD.KD.2200	Prepare/submit Asset Date Deliverables for Section 11 Prepare/submit Asset Date Deliverables for Section 12 Prepare/submit Asset Date Deliverables for Section 13 Planned Work	60	28-Jul-24 02-Nov-24	25-Sep-24 31-Dec-24	02-May-26	30-Jun-26	643 546 ev. 46	2 2	North	0 01 11			North	Anre	Α			_	Date May-24			Revision	on .	HL		A _F	proved

WORKS PROGRAMME

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30-May-24 Works Programme 27-Jun-24 Works Programme RL HL



▼ Critical Milestone

Summary

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

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Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL

	Activity Name	Dur (d)	Early Start		Late Start	Late Finish		Calendar	20	ule del	20	21	ulp ulela	2022	Alplolula	ul clasi ali	2023	S O N D	II E INI A I	2024	Islolula	II E M A M	2025	MDUE	20
VTD SB 1020	Formate working area and install protection to 132kV and Rising Main	18	27-Mar-21	Finish 21-Apr-21	01-Apr-21	26-Apr-21	Float 4	1	JASO	NDJF	MAMJ	JASO	NDJFN	MAMA	ASONE	J F M A	JJA	SOND	JEMAI	MIJIA	SOIND	J F M A M	JASC	INDIAL	MAN
KTD.SB.1030		52	22-Apr-21	-	27-Apr-21		4	1																	
KTD.SB.1040	Remove existing piles (37 nos, using DN2500 x 27 nos, 1 team)	36	-				4	1	<u></u>			<u> </u>				 		++				·			
KTD,SB,1050	Compact and formate the pile removal area for existing haul road diversion and install instrumentation		25-Jun-21		30-Jun-21		4																		
KTD,SB,1060	Conduct diversion of existing 11kV cables by CLP	52	28-Jun-21	27-Aug-21			2	1	ļi		ļ			 								ļ			
KTD,SB,1070	Install sheetpile (FSP V, Lines B-A, A-F, F-E, D-E, D-C, 30mH,1710m2, Team A)	50	10-Aug-21	08-Oct-21	12-Aug-21	11-Oct-21	2	1									1	1 1						i	1
KTD.SB.1075	Install sheetpile (FSP V, remaining at Line B-A and C-D and Line B-C, 30mH, 1190 m2, Team B)	34	28-Aug-21	08-Oct-21	31-Aug-21	11-Oct-21	2	1						<u> </u>		<u> </u>		11	<u> </u>			1			
KTD.SB.1080	Ground improvement works for break-in grout box (Vertical) and post-coring tests	60	09-Oct-21	18-Dec-21	22-Jul-22	30-Sep-22	230	1																	
KTD,SB,1090	Excavate (GL@+6mPD to Strut 1@+5,0mPD, 520m3 exca)	7	09-Oct-21	18-Oct-21	12-Oct-21	20-Oct-21	2	1				0													1
KTD.SB.1100	Install Strut 1 and Excavate (Strut 1@+5.0mPD to Strut 2@+3.0mPD, 1560m3 exca)	17	19-Oct-21	06-Nov-21	21-Oct-21	09-Nov-21	2	1	it i i i i i i i i i i i i i i i i i i		1			††-			1	1	1				7	1	
	Install Strut 2 and Excavate (Strut 2@+3,0mPD to Strut 3@+0,0mPD, 1300m3 exca)	20	200000000000000000000000000000000000000		10-Nov-21	02-Dec-21	2	1						1 I											
KTD.SB.1110					-		2	1	ļ			}						+÷	-			} 		 	
KTD.SB.1120	Install Strut 3 and Excavate (Strut 3@+0.0mPD to Strut 4@-2.5mPD, 1300m3 exca)	20	01-Dec-21	23-Dec-21		100000000000000000000000000000000000000	2	1															1 1	i	
KTD.SB.1130	Install Strut 4 and Excavate (Strut 4@-2.5mPD to Strut 5@-5.0mPD, 1300m3 exca)	20	24-Dec-21	19-Jan-22	29-Dec-21	21-Jan-22	2	1	<u> </u>	i		li		<u> </u>		<u></u>		.							
KTD.SB.1140	Install Strut 5 and Excavate (Strut 5@-5.0mPD to Strut 6@-8.0mPD, 1300m3 exca)	20	20-Jan-22	15-Feb-22	22-Jan-22	17-Feb-22	2	1																ŀ	1
KTD.SB.1150	Install Strut 6 and Excavate (Strut 6@-8.0mPD to FEL@-9.8mPD, 1040m3 exca)	20	16-Feb-22	10-Mar-22	18-Feb-22	12-Mar-22	2	1			1														
KTD.SB.1160	Construct RC structure of base slab and kicker (up to -8.0mPD, 540m3 conc)	35	11-Mar-22	25-Apr-22	14-Mar-22	27-Apr-22	2	1			1			= 1			1	1 1	1						
KTD.SB.1170	Backfill and remove strut 6@-7.5mPD	6	26-Apr-22	03-May-22	28-Apr-22	05-May-22	2	1						0					- 1	1					
		15	04-May-22		06-May-22		2	1				 		+				++				· -			
KTD,SB.1180	Construct RC structure of wall 1 (up to -5.0mPD, 250m3 conc)	10		20000	-	-	-										Ì		1						
KTD,SB,1190	Backfill and remove strut 5@.4.5mPD	6			25-May-22	-	2	1	ļ			ļļ		ļ			<u>.</u>		-			ļļ			
KTD,SB,1200	Construct RC structure of wall 2 (up to -2.5mPD, 200m3 conc)	15	30-May-22	16-Jun-22	01-Jun-22	18-Jun-22	2	1																	
KTD,SB,1210	Backfill and remove strut 4@-2.0mPD	6	17-Jun-22	23-Jun-22	20-Jun-22	25-Jun-22	2	1			1	<u> </u>		0					i			ļ <u>i</u>			
KTD.SB.1220	Construct RC structure of wall 3 (up to +0.0mPD, 210m3 conc)	15	24-Jun-22	12-Jul-22	27-Jun-22	14-Jul-22	2	1						•											
KTD.SB.1230	Backfill and remove strut 3@+0.5mPD	6	13-Jul-22	19-Jul-22	15-Jul-22	21-Jul-22	2	1			1														
KTD.SB.1240	Construct RC structure of wall and top slab with opening for RTBM Launching Works (up to 1.6 mPD, 450m3 conc)	20	20-Jul-22	11-Aug-22		13-Aug-22	2	1			1	† <u>†</u>		1	i	 	1	1			1				
				333		-	2	1																	
KTD.SB.1250	Preparation works for RTBM and surface setup (Site setup, Gantry crane erection, showroom and etc.)	70	08-Jul-22	28-Sep-22			2		ļ			ļļ													
KTD.SB.1260	Assembly RTBM and associated equipment (install cradle, back thrust wall pad, RTBM and associates) and SAT	30	24-Aug-22		26-Aug-22		2	1						1 1											
KTD.SB.1270	Remove sheetpile for RTBM Launching (11mx7m)	20	29-Sep-22	24-Oct-22	03-Oct-22	26-Oct-22	2	1				ļļ		<u> </u>		L			<u>l</u>			L			
KTD,SB,1280	RTBM Launching (initial drive, 6m, 4nos precast unit, 0.5m/d)	12	25-Oct-22	05-Nov-22	27-Oct-22	07-Nov-22	2	2							0						1 1		1 1		
KTD.SB.1290	RTBM Launching (Main drive, 78m, 45nos precast unit, 1.5m/d)	45	06-Nov-22	20-Dec-22	08-Nov-22	22-Dec-22	2	2			1			1 1										i	
KTD,SB,1300	RTBM Breakthrough into Retrieving Shaft @Sa Po Road	5	21-Dec-22	25-Dec-22	23-Dec-22	27-Dec-22	2	2	[i	1	† <u>†</u>		TT	i		Ť	1	<u>-</u>						T
		5	28-Dec-22	03-Jan-23	28-Dec-22	03-Jan-23	0	1				l 1		1 1	i		i	1 1	i	İ				1	
KTD,SB,1310	Replacement grout along trenchless tunnel area	40				-	0	-	ļ			}						· 	-			} 		-	
KTD,SB,1320	Remove RTBM and associated equipment (cradle, jacks, back thrust wall pad and etc.)		04-Jan-23	21-Feb-23															i	i			1 1	i	
KTD.SB.1330	Construct remaining RC structure of top slab and lift shaft and backfill	58	22-Feb-23	05-May-23	07-Dec-23	17-Feb-24	2000	- 1				ļļ		ļļ				<u> </u>				ļ			
KTD.SB,1340	Install steelwork, ABWF, other facilities, lift and other E&M works	180	06-May-23	08-Dec-23	19-Feb-24	25-Sep-24	236	1									-							- 1	
PEDESTRIAN SUBWAY S	SB-01 AT SA PO ROAD	1111	14-Dec-20	12-Sep-24	06-Jan-21	25-Sep-24	10			V	i						1				7				1
KTD.SB.2000	Trial pit/trench excavation to identify existing underground utilities and services and ground investigation works	51	14-Dec-20	17-Feb-21	06-Jan-21	09-Mar-21	17	1			1		1	T		i i	1	1 1							
KTD.SB.2010	Construct road diversion for Sa Po Road (Stage 1, incl carriageway and footpath)	45	18-Feb-21	15-Apr-21	10-Mar-21	06-May-21	17	1			<u></u>			1 1	1		1	1 1		i			1 1	i	
KTD.SB.2011	Exposed existing shallow covered watermain and conducting diversion works (NCE032/CE025)	43	15-Apr-21	27-May-21	-	15-Jun-21	19	2				 		 		 		- 				-			
		10					19	2			п			1 1				1 1		i			1 1		
KTD.SB,2012	Construction of remaining works after watermain diversion works for implement road diversion of Sa Po Road (CE032/CE02:	10	28-May-21	06-Jun-21	10-0011-21				ļ			ļļ		 				++				} -			
KTD.SB.2020	Implement TTA for Sa Po Road diversion (Stage 1)	0		07-Jun-21		25-Jun-21	16	1		i	V				1										
KTD,SB,2030	Site clearance and excavation for trial pits to identify existing UU along Sa Po Road	5	07-Jun-21	11-Jun-21	29-Jun-21	05-Jul-21	18	1			1	<u>ll.</u>	<u>j</u>	<u>li.</u>		<u> </u>	<u> </u>					ļ			
KTD.SB,2040	Diversion of existing DN1800 stormwater drain pipe and underground utilities/services	129	16-Jun-21	17-Nov-21	06-Jul-21	06-Dec-21	16	1			E														
KTD,SB,2050	Install sheetpile for Retrieving Shaft (Stage 1, FSP V, 88nos, 24m-H, 1 team)	25	18-Nov-21	16-Dec-21	07-Dec-21	07-Jan-22	16	1							1								1 1		
KTD.SB.2060	Construct road diversion for Sa Po Road (Stage 2, incl traffic deck, carriageway and footpath)	44	17-Dec-21	12-Feb-22	08-Jan-22	03-Mar-22	16	1				 		1				1			1	·			
W. 1907 -		0	-	12-Feb-22		03-Mar-22		1				1 1	▽					1 1					1 1		
KTD,SB,2070	Implement TTA for Sa Po Road diversion (Slage 2)		4451.00	-	04.1400		1		ļi			ļļ					· 					ļ			
KTD.SB.2080	Install sheetpile for Retrieving Shaft (Stage 2A, FSP V, 46 nos, 24m-H, 1 team)	22	200000000000000000000000000000000000000	100000000000000000000000000000000000000		29-Mar-22	-	- 1						1 1	i		i	1 1	i						
KTD.SB.2090	Diversion to existing underground utilities/services for remaining sheetpil installation	44	11-Mar-22	06-May-22	30-Mar-22	26-May-22	16	1				<u> </u>	1			<u> </u>		1i			i	<u> </u>			i-
KTD.SB.2100	Install remaining sheetpile for Retrieving Shaft (Stage 2B, FSP V, 20 nos, 24m-H, 1 team)	8	07-May-22	17-May-22	27-May-22	06-Jun-22	16	1											ŀ					i	
KTD.SB.2110	Excavate and install ELS (GL@+6.0mPD to Strut 1@+5.0mPD, 270m3 exca)	6	18-May-22	24-May-22	07-Jun-22	13-Jun-22	16	1						0	1										
KTD.SB,2120	Excavate and install ELS (Strut 1@+5.0mPD to Strut 2@+2.0mPD, 810m3 exca)	19	25-May-22	16-Jun-22	14-Jun-22	06-Jul-22	16	1			1	1	·i		İ	mi	1	T	·		Ť	[i-		T
	Excavate and install ELS (Strut 2@+2.0mPD to Strut 3@-0.5mPD, 675m3 exca)	19	17-Jun-22				16	1							1										
KTD.SB.2130					500		755	1	 		{	} }		┼		ļ			·			} }		·	
KTD.SB.2140	Excavate and install ELS (Strut 3@-0.5mPD to Strut 4@-3.0mPD, 675m3 exca)	19	11-Jul-22		29-Jul-22		-						1	1 1	_		1								
KTD,SB,2150	Excavate and install ELS (Strut 4@-3.0mPD to Strut 5@-5.5mPD, 675m3 exca)	19	02-Aug-22	23-Aug-22	20-Aug-22	10-Sep-22	16	1				ļļ		<u> </u>		ļļ					j	ļļ	.		
KTD.SB,2160	Excavate and install ELS (Strut 5@-5.5mPD to Strut 6@-8.3mPD, 756m3 exca)	20	24-Aug-22	16-Sep-22	13-Sep-22	07-Oct-22	16	1																	
KTD.SB.2170	Excavate and install ELS (Strut 6@-8.3mPD to FEL@-10.3mPD, 540m3 exca)	19	17-Sep-22	11-Oct-22	08-Oct-22	29-Oct-22	16	1					1				İ							į	
KTD,SB,2180	Ground improvement works for breakthrough (Horizontal) and post-coring tests	25	12-Oct-22	09-Nov-22	31-Oct-22	28-Nov-22	16	1			1	1 1	1	1 1		1	1	1 1	1	1	1				1
KTD.SB.2190	Construct tunnel portal for RTBM breakthrough	21	10-Nov-22			22-Dec-22		1										1 1							į
		60				1	-	1	ļ			 -		+								 			
KTD.SB.2200	Remove tunnel portal and RTBM shield for RC structure connection works		30-Jan-23			-		1																	
	Construct RC structure of base slab (xxx m3 conc)	25	14-Apr-23	WE 1000 100				1				ļļ		ļļ		<u> </u>		41	<u>.</u>			ļļ			
KTD.SB.2210		52	15-May-23	17-Jul-23	27-May-23	28-Jul-23	10	1																	1
	Construct RC structure of walls (xxx m3 conc)		18-Jul-23	11-Sep-23	29-Jul-23	22-Sep-23	10	1			i														
KTD.SB.2210	Construct RC structure of walls (xxx m3 conc) Construct RC structure of roof slab and lift shaft (xxx m3 conc)	48	10 dui Lo				40	1				7		7	1									1	1
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230	Construct RC structure of roof slab and lift shaft (xxx m3 conc)	48 39	12-Sep-23	30-Oct-23	23-Sep-23	10-Nov-23	10		E .	1		1 1					Si .						1 1	1	
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level	2.2300	12-Sep-23		- (0)			1								1 1			į						1
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240 KTD.SB.2250	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level Install ELS and excavate for remaining staircase and escalator trough structure	39 40	12-Sep-23 31-Oct-23	15-Dec-23	11-Nov-23	29-Dec-23	10	1	-					ļļ.		 						ļļ			
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240 KTD.SB.2250 KTD.SB.2250	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level Install ELS and excavate for remaining staircase and escalator trough structure Construct RC structure of remaining staricase and escalator trough structure and backfill	39 40 60	12-Sep-23 31-Oct-23 16-Dec-23	15-Dec-23 29-Feb-24	11-Nov-23 30-Dec-23	29-Dec-23 12-Mar-24	10 10	1 1			-							i							
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240 KTD.SB.2250	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level Install ELS and excavate for remaining staircase and escalator trough structure Construct RC structure of remaining staricase and escalator trough structure and backfill Install steelwork, ABWF, other facilities and other E&M works	39 40 60 160	12-Sep-23 31-Oct-23	15-Dec-23 29-Feb-24 12-Sep-24	11-Nov-23 30-Dec-23 13-Mar-24	29-Dec-23 12-Mar-24 25-Sep-24	10 10 10	1 1 1										i			3				
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240 KTD.SB.2250 KTD.SB.2250	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level Install ELS and excavate for remaining staircase and escalator trough structure Construct RC structure of remaining staricase and escalator trough structure and backfill	39 40 60	12-Sep-23 31-Oct-23 16-Dec-23	15-Dec-23 29-Feb-24	11-Nov-23 30-Dec-23 13-Mar-24	29-Dec-23 12-Mar-24	10 10 10	1 1 1 2										i			□				
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240 KTD.SB.2250 KTD.SB.2250 KTD.SB.2270 KTD.SB.2270 KTD.SB.2280	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level Install ELS and excavate for remaining staircase and escalator trough structure Construct RC structure of remaining staricase and escalator trough structure and backfill Install steelwork, ABWF, other facilities and other E&M works	39 40 60 160	12-Sep-23 31-Oct-23 16-Dec-23 01-Mar-24	15-Dec-23 29-Feb-24 12-Sep-24 12-Sep-24	30-Dec-23 13-Mar-24	29-Dec-23 12-Mar-24 25-Sep-24	10 10 10 13	1 1 1 2									-	i			□ ∀				
KTD.SB.2210 KTD.SB.2220 KTD.SB.2230 KTD.SB.2240 KTD.SB.2250 KTD.SB.2250 KTD.SB.2260 KTD.SB.2270 KTD.SB.2280	Construct RC structure of roof slab and lift shaft (xxx m3 conc) Backfill Retrieving Shaft up to ground level Install ELS and excavate for remaining staircase and escalator trough structure Construct RC structure of remaining staricase and escalator trough structure and backfill Install steelwork, ABWF, other facilities and other E&M works Planned Completion of Pedestrian Subway SB-01 (Related to Section 12)	39 40 60 160	12-Sep-23 31-Oct-23 16-Dec-23 01-Mar-24	15-Dec-23 29-Feb-24 12-Sep-24 12-Sep-24	30-Dec-23 13-Mar-24	29-Dec-23 12-Mar-24 25-Sep-24 25-Sep-24	10 10 10 13	1 1 1 2										i			■ ▼				

▼ Critical Milestone

▼ Summary

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

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Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL

	Activity Name	Dur (d)	Early Start	Early Finish	Late Start	Late Finish	Float	Calendar	JAS	ONDJF	MAMJ	JASO	N D J F N	2022 A M J J	ASOND	JFMAN	JJAS	ONDJ	FMAN	JJAS	SOND.	JFMAM	JJASC	NDJF	MA
PIER 9		300	20-Oct-20	25-Oct-21		26-Jan-22	77																		
KTD.LW.1000	Pre-drilling works (2 nos, 1 rig)	45	20-Oct-20	11-Dec-20	08-Feb-21	08-Apr-21	91	1						ļļ									-		
KTD.LW.1010	Piling works for bored pile (PC9-A2, 2200dia x 67m)	40	31-Dec-20	19-Feb-21	09-Apr-21	27-May-21	77	1											- 1						- 1
KTD,LW,1020	Piling works for bored pile (PC9-A1, 2200dia x 67m)	40	20-Feb-21	12-Apr-21	28-May-21	15-Jul-21	77	1								I					.][
KTD,LW,1030	Testing for completed bored piles (Sonic Test & Interface Core) and site clearance	18	13-Apr-21	04-May-21	16-Jul-21	05-Aug-21	77	.1																	
KTD,LW,1040	Installation of ELS and excavation for pile cap construction (520.5m3 exca, 1 team)	29	05-May-21	08-Jun-21	06-Aug-21	08-Sep-21	77	1											1	1					1
KTD.LW.1050	Construction of RC structure (pile cap & pier column) (184m3, 1 team)	114	09-Jun-21	25-Oct-21	09-Sep-21	26-Jan-22	77	1					<u>-</u>	T T	1 1	1	1 1	<u></u>	1	1	1 1	1		1	
		285	100000000000000000000000000000000000000	Table Page 200	09-Feb-21		77			_	-							- 1							
PIER 10		44	07-Nov-20	30-Dec-20	The species of the later of	A CONTRACT NAME AND ADDRESS OF THE OWN	77	1				·		 				+			††				
KTD.LW.1060	Pre-drilling works (2 nos, 1 rig)	- 1	100000000000000000000000000000000000000		-	5550	77													i					1
KTD.LW.1070	Piling works for bored pile (PC10-A2, 2200dia x 67m)	40	31-Dec-20	19-Feb-21	09-Apr-21	27-May-21		1			<u></u>			ļļ											
KTD.LW.1080	Piling works for bored pile (PC10-A1, 2200dia x 67m)	40	20-Feb-21	12-Apr-21	28-May-21	15-Jul-21	77	3		-	7													1	
KTD.LW.1090	Testing for completed bored piles (Sonic Test & Interface Core) and site clearance	18	13-Apr-21	04-May-21	16-Jul-21	05-Aug-21	77	1		l			j	ll	ii.	i		j.			<u> </u>				
KTD.LW.1100	Installation of ELS and excavation for pile cap construction (273.5m3 exca, 1 team)	29	05-May-21	08-Jun-21	06-Aug-21	08-Sep-21	77	1																	
KTD.LW.1110	Construction of RC structure (pile cap & pier column) (149m3, 1 team)	114	09-Jun-21	25-Oct-21	09-Sep-21	26-Jan-22	77	1			=	\rightarrow		1		i		- 1			1 1		1 1		- 1
		433	05-May-21	18-Oct-22	09-Aug-21	22-Feb-24	401				_						11	1		1	1	1	1	1	-
OOTBRIDGE (PIER 9 TO		and part or appropriate to	05-May-21	04-Jun-21	diministration of the	07-Sep-21	79	1				i				1									
KTD,LW,1120	Formation and placing concrete blocks in Kai Tak River (66 nos in Kai Tak River and 44 nos at both land side)	26						- :		ļ	+	·		 											
KTD,LW,1130	Erect mid tower in Kai Tak River (Quadshore system)	26	05-Jun-21	07-Jul-21	08-Sep-21	09-Oct-21	79	- 1			1 7			1 1		i				i					
KTD.LW.1140	Install decking system to deck over Kai Tak River	26	08-Jul-21	06-Aug-21	11-Oct-21	10-Nov-21	79	1		<u> </u>	1 1			<u> </u>							1				
KTD,LW,1150	Installation and erecting falsework and working platform for constructing RC bridge structure	63	07-Aug-21	22-Oct-21	11-Nov-21	26-Jan-22	79	1																	
KTD.LW.1160	Construction of RC bridge structure (1079m3, 4 teams)	80	26-Oct-21	29-Jan-22	27-Jan-22	10-May-22	77	1												i.					
KTD.LW.1170	Prestressing works and remaining RC works	26	31-Jan-22	04-Mar-22	20-Mar-23	22-Apr-23	335	1			1]		1	1	1	1		1				
KTD.LW.1173	Install steel roof structure and associated steel facilities from Pier 9 to Pier 10	120	05-Mar-22			04-Dec-23	401	1						; !						1					
							401	1		ļ <u> </u>															
KTD.LW.1176	Install E&M works, testing and commissioning from Pier 9 to Pier 10	90	02-Jul-22	18-Oct-22											_					į					1
KTD,LW.1179	Construct landscaping, ABWF works and other facilities from Pier 9 to Pier 10	50	02-Jul-22	Annual Control of the	21-Dec-23		441	1		<u> </u>	<u></u>	<u></u> j		ļ	T.	 							-		
TER 11		367	31-Jul-20	25-Oct-21	05-Aug-21	29-Sep-22	276									1				1					
KTD.LW.1180	Liaison/coordinate with adjacent project for TTA arrangement	90	31-Jul-20	28-Oct-20	05-Aug-21	02-Nov-21	370	2						L							1				
KTD,LW,1190	Implementation of TTA	7	18-Nov-20	25-Nov-20	26-Oct-21	02-Nov-21	276	1		0	1 1			T T					1						
KTD,LW,1200	Pre-drilling works (4 nos, 1 rig)	48	26-Nov-20	23-Jan-21	03-Nov-21	30-Dec-21	276	1						1 1					i	i					
THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAME		28	25-Jan-21	01-Mar-21	31-Dec-21	05-Feb-22	276	1			††			††-						·	11	·	-ii-		1
KTD.LW.1210	Piling works for bored pile (PC11-A1, 1800dia x 78m)										- 1								1	İ					i
KTD,LW.1220	Piling works for bored pile (PC11-A4, 1800dia x 78m)	28	02-Mar-21				276	- '		ļ				ļļ											
KTD,LW,1230	Piling works for bored pile (PC11-A2, 1800dia x 78m)	28	08-Apr-21	11-May-21	11-Mar-22	13-Apr-22	276	1						1 1											1
KTD,LW,1240	Piling works for bored pile (PC11-A3, 1800dia x 78m)	28	12-May-21	15-Jun-21	14-Apr-22	21-May-22	276	1						ll		j		j.	i		i	i			i_
KTD.LW.1250	Testing for completed bored piles (Sonic Test & Interface Core) and site clearance	18	16-Jun-21	07-Jul-21	23-May-22	13-Jun-22	276	1				1													
KTD.LW.1260	Installation of ELS and excavation for pile cap construction (319.9m3 exca, 1 team)	26	08-Jul-21	06-Aug-21	14-Jun-22	14-Jul-22	276	1	1										1	1					
KTD.LW.1270	Construction of RC structure (pile cap & pier column) (138m3, 1 team)	65	07-Aug-21	25-Oct-21	15-Jul-22	29-Sep-22	276	1		 -				tt				t		·	1	1	11111		
		201	26-Oct-21	31-Oct-22	The state of the state of	The second second second	-	-			1 1	-				1									- 1
OOTBRIDGE (PIER 10		301			The second second			1	ļ	ļ			<u></u>	 											
KTD.LW.1280	Remove ELS and formating roundabout for portal and falsework erection from CH93 to CH138	31	26-Oct-21	30-1404-21		07-Nov-22		- 1					_	1 1		1				į					1
KTD.LW.1281	Implement TTA for erecting portal across carriageway near CHB4 to CHB3 (Stage 2)	0	01-Dec-21		15-Nov-22		282	1		<u> </u>			▽	<u> </u>		<u>i</u>		<u> </u>	<u>-</u>						
KTD,LW,1282	Construct and erect portal across carriageway near CH84 to CH93	18	01-Dec-21	21-Dec-21	15-Nov-22	05-Dec-22	282	1			1 1				1 1	į							1 1		
KTD.LW.1283	Implement TTA for erecting portal across carriageway near CH138 to CH147 (Stage 3)	0	22-Dec-21	22-Dec-21	05-Dec-22	05-Dec-22	282	1					I.		_ _	i	ii		İ			i_	<u> </u>		
KTD,LW,1284	Construct and erect portal across carriageway near CH138 to CH147 (Except secondary beams)	12	22-Dec-21	07-Jan-22	06-Dec-22	19-Dec-22	282	1			1		Ò	1											
KTD.LW.1285	Implement TTA for erecting secondary beams across carriageway near CH138 to CH147 (night time, approx 3 nights)	6	08-Jan-22	14-Jan-22	20-Dec-22	28-Dec-22	282	1					0							1			1 1		
		2	15-Jan-22	18-Jan-22		31-Dec-22		1	ļ	 		·		ł							1				
KTD,LW,1286	Implement TTA for RC bridge structure construction (Stage 4)	3	T (2-32-5)(2-2)	27.00000000	100000000000000000000000000000000000000														1	į					
KTD,LW,1290	Erect falsework and working platform from CH93 to CH138	45	01-Dec-21			31-Dec-22	-	15		ļ		L		<u> </u>								 			
KTD.LW.1300	Construction of RC bridge structure (745m3, 1 teams)	78	08-Jan-22	13-Apr-22	13-Dec-22	18-Mar-23	276	1						7 1	1 1	1				1					
KTD.LW.1310	Prestressing works and remaining RC works	26	14-Apr-22	19-May-22	20-Mar-23	22-Apr-23	276	1					i			İ									
KTD.LW.1313	Install steel roof structure and associated steel facilities from Pier 10 to Pier 12	76	20-May-22	18-Aug-22	08-Sep-23	08-Dec-23	390	1			1 1								1						
KTD.LW.1316	Install E&M works, testing and commissioning from Pier 10 to Pier 12	60	19-Aug-22	31-Oct-22	09-Dec-23	22-Feb-24	390	1			1 1						1 1			į					
	Construct landscapiung, ABWFworks and other facilities from Pier 10 to Pier 12	52		-	19-Dec-23		398	1	-	† -	+			† †				-		 	1	-		-	
KTD.LW.1319			Witness Co.	-		Andrew	-			_							_								
	SE, SOFT LANDSCAPING & OTHER WORKS	715	25-Jan-21			22-Feb-24								 					-						
KTD.LW.1320	Pre-drilling works (6 nos, 2 rig)	48	25-Jan-21	24-Mar-21				-1:			-														
KTD.LW.1330	Piling works for pre-bored H-piles for PC1, PC2, PC3 and PC4 (19 nos, 610dia x 70m, 1 rig)	156	31-Jan-22	12-Aug-22	11-May-22	14-Nov-22	77	1		ļ	11	L		ļļ				L			j				
KTD.LW.1340	Installation of ELS and excavation for pile caps construction (PC1, PC2, PC3 and PC4, 379.1m3 exca, 1 team)	50	13-Aug-22	13-Oct-22	15-Nov-22	14-Jan-23	77	1																	
KTD.LW.1350	Construction of RC structures (inclu. pile caps, pier column, lift shaft, staircase, etc.)	78	14-Oct-22	16-Jan-23	16-Jan-23	22-Apr-23	77	1								1					i i				
KTD,LW,1360	Lift and other E&M installation, testing and commissioning	90	17-Jan-23	09-May-23			117	1	-	† <u> </u>	11			1 1	i		1		1		1 1	1			1
	Construction of roof, planter, landscape softworks, other facilities and ABWF works for whole walkway	130				26-Sep-23		1	H W H																
KTD,LW.1370			11-0411-23				-	2		ļ				 			<u>.</u>				++				
KTD.LW.1380	Planned Completion of Landscaped Elevated Walkway LW-02 (Related to Section 1)	0		27-Jun-23		22-Feb-24		2																	
NSTRUCTION OF E	BOX CULVERT B1	229	15-Aug-20			10-May-21			V	ļ	-	ļļ		ļļ.				ļļ.						 	
BOX CULVERT B1 (BAY	Y0 CH364 TO BAY11 CH216)	205	02-Sep-20	14-May-21	04-Sep-20	28-Apr-21	-13	1	_	1										i					
KTD.B1.A.1000	Trial pit excavation to expose the existing box culvert near BayO CH864	5	02-Sep-20	07-Sep-20	04-Sep-20	09-Sep-20	2	1	0									l		l.		ii			
KTD.B1.A.1010	Construction of Bay 0 include ELS/exca/rock fill/RC structure (CH364 to CH350, 14.3m, except roof opening for connect)	53	08-Sep-20	11-Nov-20	10-Sep-20	13-Nov-20	2	1																	
KTD.B1.A.1020	Construction of Bay 1 include ELS/excavation/rock fill/RC structure (CH350 to CH338, 12.2m)	70	25-Sep-20	18-Dec-20	18-Dec-20	16-Mar-21	69	1					1												
AND THE RESERVE OF THE PROPERTY OF THE PROPERT		55	29-Sep-20		22-Dec-20	-	69	1	ļ			·				-									
KTD,B1,A,1030	Construction of Bay 2 include ELS/excavation/rock fill/RC structure (CH338 to CH326, 12.2m)						-	4																Ì	
KTD,B1,A,1040	Construction of Bay 3 include ELS/excavation/rock fill/RC structure (CH326 to CH313, 12.2m)	59	15-Oct-20		08-Jan-21		69	1	<u></u>	<u> </u>		ļļ		ļļ.		<u></u>		ļ <u></u>	-						
LCTD D4 A 4050	Construction of Bay 4 include ELS/excavation/rock fill/RC structure (CH313 to CH301, 12.2m)	45	21-Oct-20		25-Jan-21		78	1											1						
KTD.B1.A.1050		00	27-Nov-20	18-Mar-21	30-Nov-20	20-Mar-21	2	1	6	1	1	1 1		1 1	1	i	1	: 1			1 1	-	1 1	1	
KTD,B1,A,1060	Construction of Bay 5 include ELS/excavation/rock fill/RC structure (CH301 to CH289, 12,2m)	90	21110120		44.000	47.254/9-4409/0	1000			1	1 3		i	P 9									1 1		- 57
The state of the s	Construction of Bay 5 include ELS/excavation/rock fill/RC structure (CH301 to CH289, 12.2m)	90	2110120	1 15000000					E			<u> </u>		1 1				-		1			1 1		
A CONTRACTOR AND CONT	Construction of Bay 5 include ELS/excavation/rock fill/RC structure (CH301 to CH289, 12.2m) Planned Work	90	ZI TOVES	1			ev. 46					<u> </u>				<u> </u>	Date	T		Revisio	n i		Checked	A	Appr

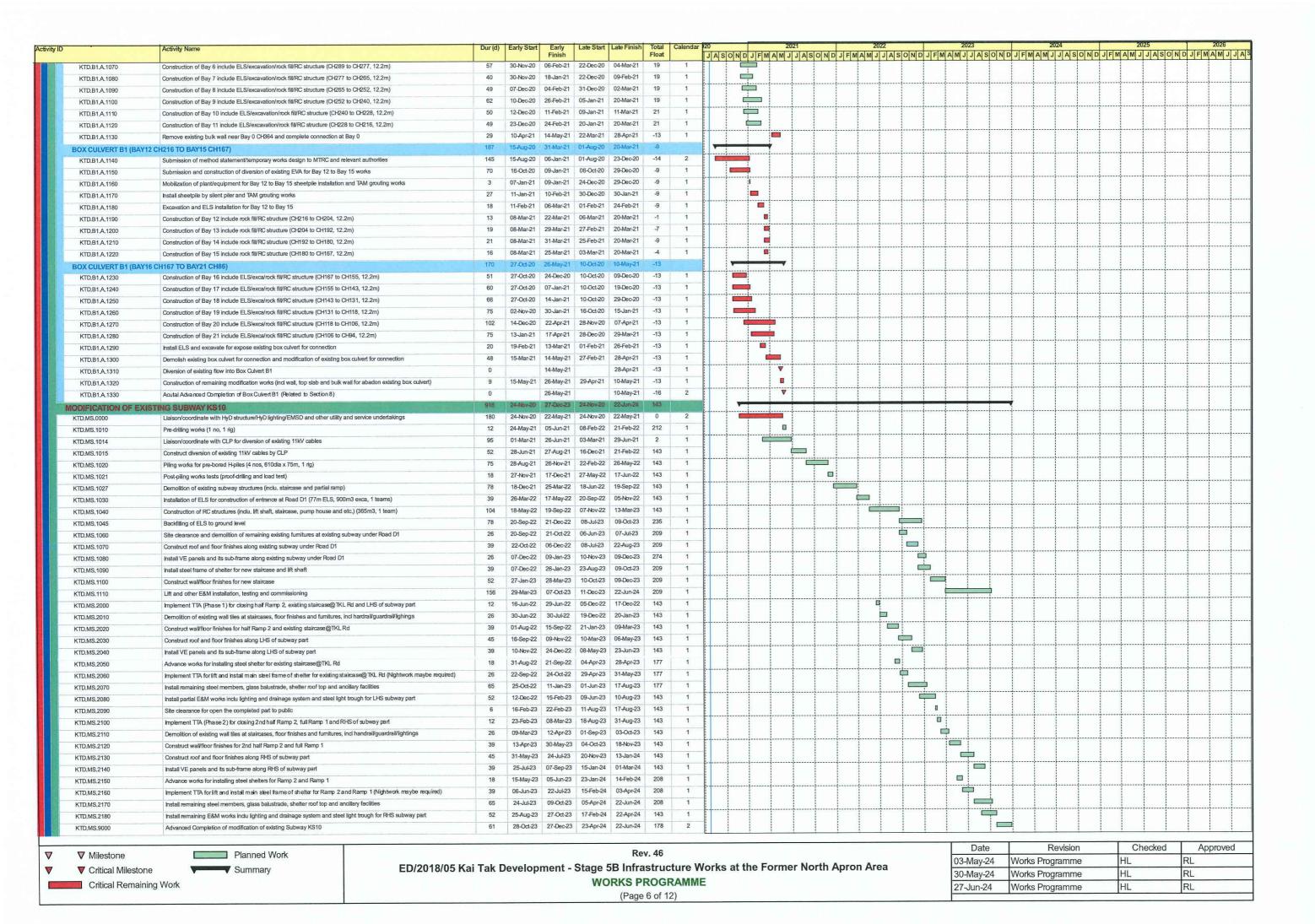
▼ Critical Milestone

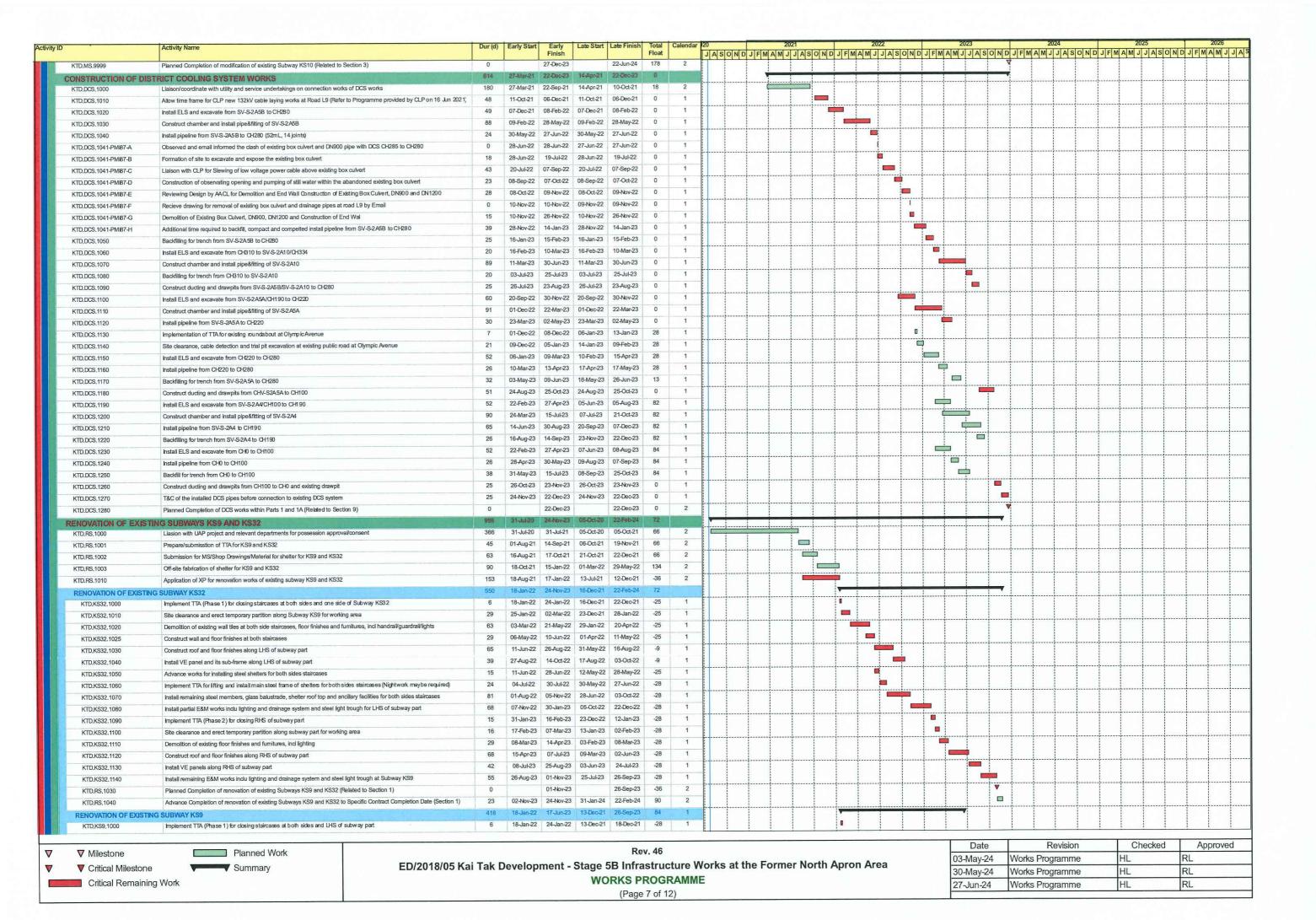
Summary

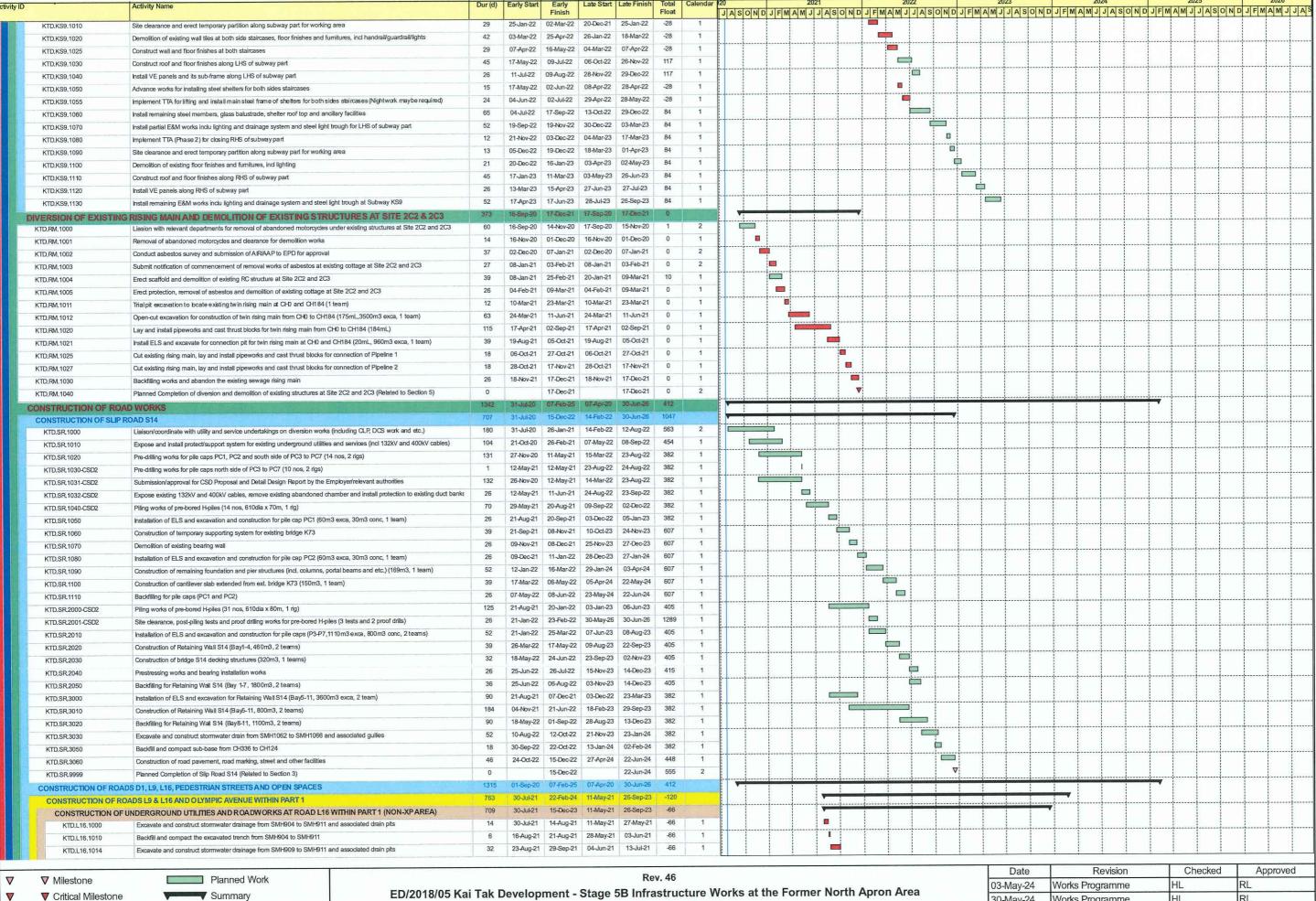
ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area WORKS PROGRAMME

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Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL



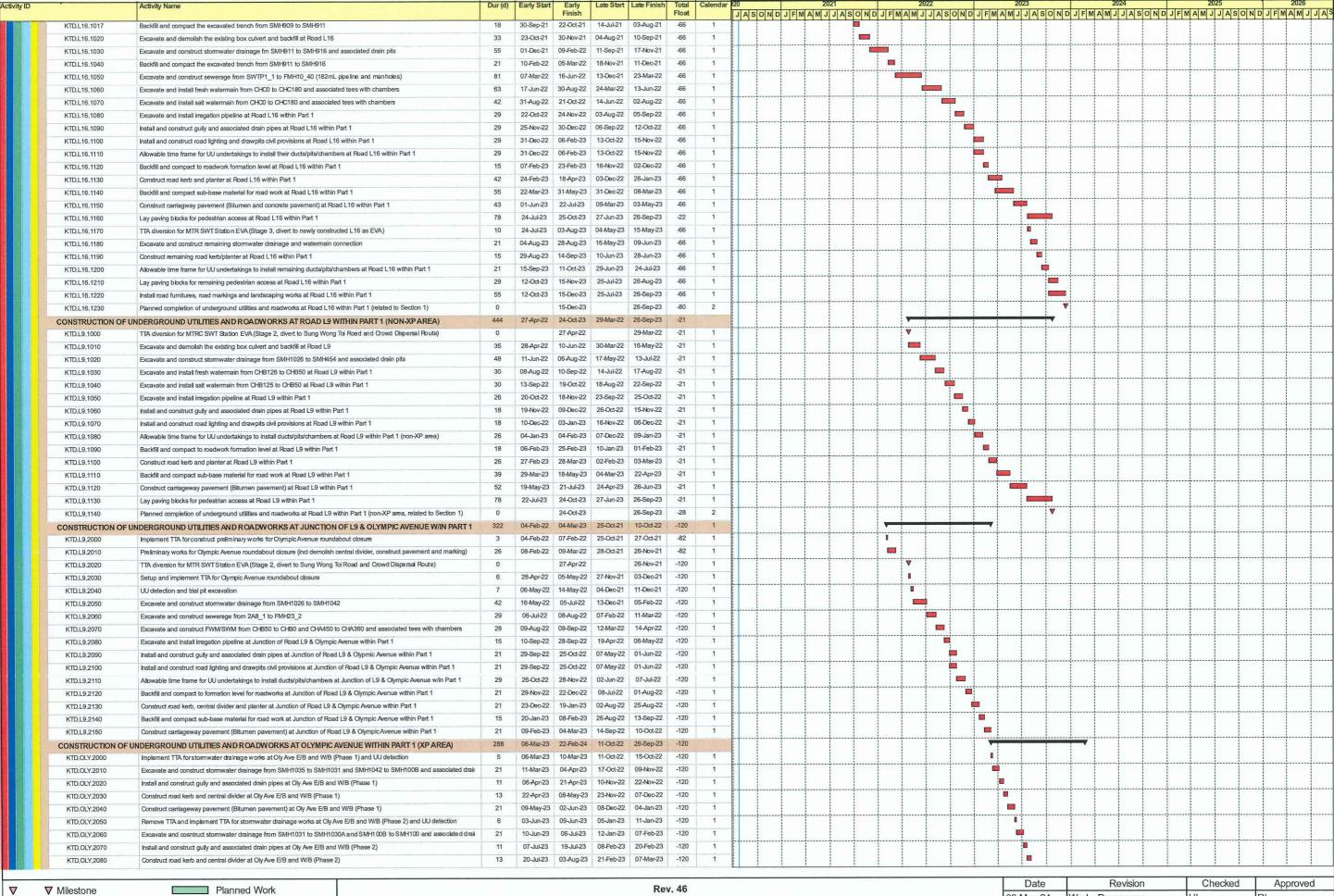




ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area WORKS PROGRAMME

(Page 8 of 12)

30-May-24 Works Programme RL HL Works Programme HL RL 27-Jun-24



▼ Critical Milestone

Summarv

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

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Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL

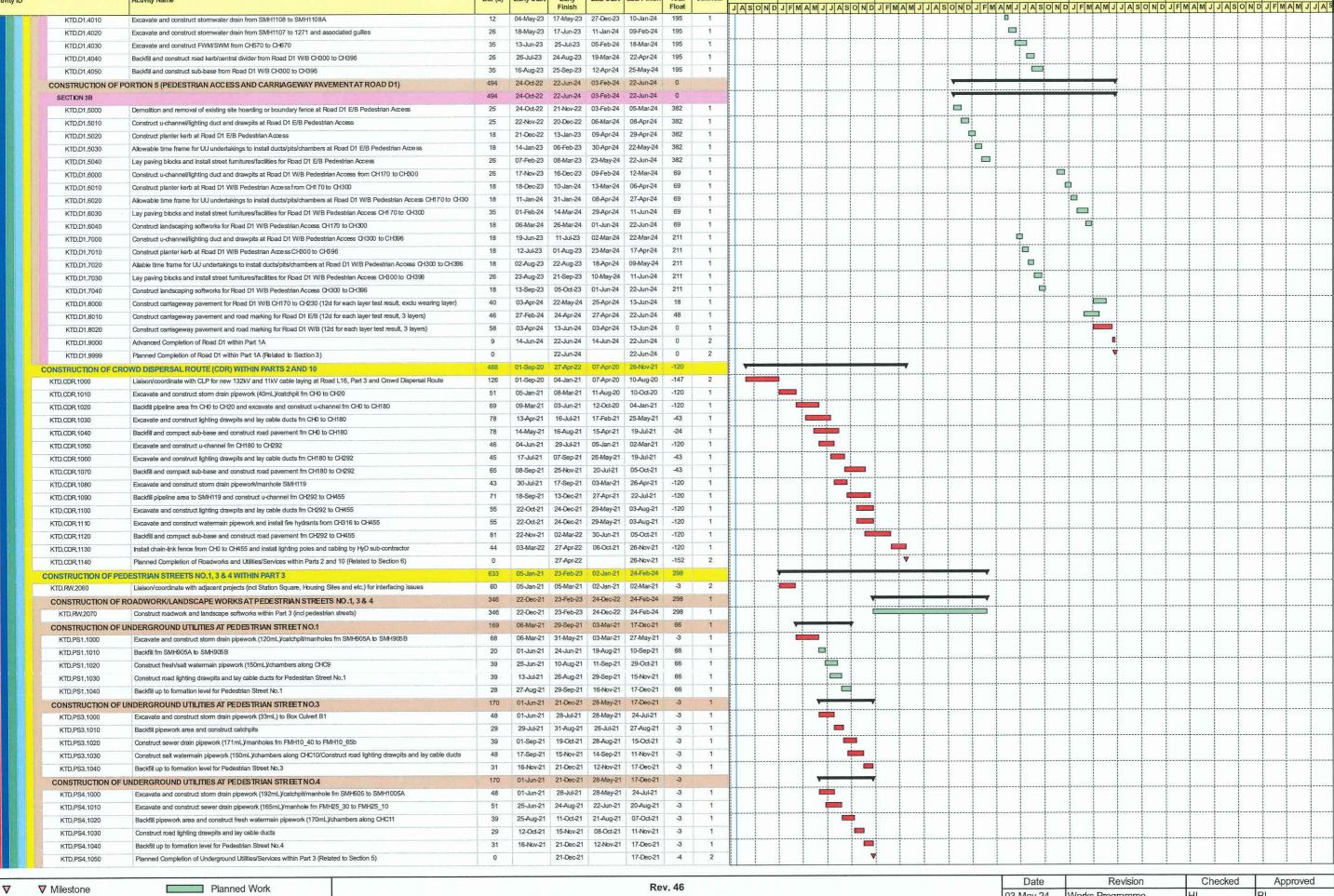
KTD OI Y 2000	Construct carriageway pavement (Bitumen pavement) at Oly Ave E/B and W/B (Phase 2)	21	04-Aug-23	Finish 28-Aug-23	08-Mar-23	31-Mar-23	Float -120	1	JASOI	DJFN	AMJJAS	ONDJF	MAMJJ	SONDJ	MAMJJ	SONE	JEMAN	JJASON	DJFMA	MJJAS	NDJF	F
	Construct camageway pavement (Bitumen pavement) at Uty Ave E/B and Wils (Phase 2) Remove TTA and implement TTA for FWW/SWM at Oly Ave W/B (Phase 3) and UU detection	6					-120	1														
		15	29-Aug-23 05-Sep-23				-120	1			ł						∤ 					S.
	Excavate and construct FWM/SWM from CHA360 to CHA300 and associated tees with chambers	10			0-18-5-		-	1														
	Backfill and construct carriageway pavement (Bitumen pavement) at Oly Ave W/B (Phase 3)	13	22-Sep-23					1			ļļ						 					
NAME OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER OF THE OWNER OWNE	Remove TTA and implement TTA for FWM/SWM at Oly Ave W/B and E/B (Phase 4) and UU detection	б	10-Oct-23		17-May-23			1														
	Excavate and construct FWM/SWM from CHA300 to CHA100 and associated tees with chambers	21	17-Oct-23		24-May-23		-120	1			ļ		- 				ļ					- 17
	Backfill and construct carriageway pavement (Bitumen pavement) at Oly Ave W/B and E/B (Phase 4)	19	11-Nov-23			12-Jul-23	-120	1														
KTD,OLY,2160	Remove TTA and implement TTA for FWM/SWM at Sung Wong Toi Road S/B (Phase 5) and UU detection	6	04-Dec-23			19-Jul-23	-120	1	<u></u>		<u> </u>						ļļ					
KTD.OLY.2170	Excavate and construct FWM/SWM from CHA100 to CHA0 and associated tees with chambers	21	11-Dec-23	06-Jan-24	20-Jul-23	12-Aug-23	-120	1		1												
KTD.OLY.2180	FWM/SWM pipeline washing and testing for connection	11	08-Jan-24	19-Jan-24	14-Aug-23	25-Aug-23	-120	1									!	ii				
KTD.OLY.2190	Backfill and construct carriageway pavement (Bitumen pavement) at Sung Wong Toi Road S/B (Phase 5)	21	20-Jan-24	15-Feb-24	26-Aug-23	19-Sep-23	-120	1														
KTD.OLY.2200	Site clearance and remove TTA to resume traffic	6	16-Feb-24	22-Feb-24	20-Sep-23	26-Sep-23	-120	1														
KTD.OLY.2210	Planned completion of underground utilities and roadworks at Olympic Avenue within Part 1 (related to Section 1)	0		22-Feb-24		26-Sep-23	-149	2			1		11				▼				1	-
The state of the s	DESTRIAN ACCESS FROM L9 TO OLYMPIC AVENUE WITHIN PART 1 (XP AREA)	330	29-Nov-22	09-Jan-24	19-Aug-22	26-Sep-23	-84							V	+	-	-					
	Demolish and remove site hoarding from Road L9 to Olympic Avenue within Part 1	15	29-Nov-22		A CONTRACTOR OF THE PARTY OF TH		-84	1			 		+				 					-
		15	16-Dec-22		-		-84	1		i												
	Site clearance and relocate construction material stockpile at Storage Yard	20				-			<u> </u>		 						 					
	Excavate and construct u-channels and connect to stormwater drainage system	29	06-Jan-23		24-Sep-22		-84	1		1				3 3 3	_				1 1			
KTD,OLY,2250	Install and construct road lighting and drawpits civil provisions from Road L9 to Olympic Avenue within Part 1	21	11-Feb-23	07-Mar-23	31-Oct-22	23-Nov-22	-84	1			<u> </u>	ļ	<u> </u>		<u> </u>		<u> </u>					
KTD,OLY,2260	Allowable time frame for UU undertakings to install ducts/pits/chambers from Road L9 to OlympicAvenue within Part 1	29	08-Mar-23	14-Apr-23	24-Nov-22	29-Dec-22	-84	1		1												
KTD.OLY.2270	Backfill and compact to formation level for road works	29	15-Apr-23	19-May-23	30-Dec-22	04-Feb-23	-84	1														-
KTD.OLY.2280	Backfill and compact sub-base material for road works	29	20-May-23	24-Jun-23	06-Feb-23	10-Mar-23	-84	1								1	1	1 1				
	Lay paving blocks for pedestrian access from Road L9 to Olympic Avenue within Part 1	42	26-Jun-23	14-Aug-23	11-Mar-23	04-May-23	-84	1							-							
	Implement TTA for closing existing pedestrian access from Road L9 to Cly Ave w/in Part 1 and divert to new access	4	15-Aug-23					1			t						† <u>†</u>					
	Remove existing paving blocks, excavate and install irregation pipeline from Road L9 to Olympic Avenue within Part 1	21	100000000000000000000000000000000000000		10-May-23		-84	1														
		_					-84	1			 					<u> </u>	 				 	
	Construct road kerb and planter fm Road L9 to Olympic Avenue within Part 1	29	13-Sep-23		05-Jun-23		355.04															
	Laying paving blocks for pedestrian access fm Road L9 to Olympic Avenue within Part 1	29		7-75-500		12-Aug-23	-84	1			ļļ						<u> </u>					
KTD,OLY,2340	Install road furnitures, road markings and landscaping works from Road L9 to Olympic Avenue within Part 1	38	23-Nov-23	09-Jan-24	14-Aug-23		-84	1														
KTD,OLY,2350	Planned completion of pedestrian access from Road L9 to Olympic Avenue within Part 1 (XP area, related to Section 1)	0		09-Jan-24		26-Sep-23	-105	2		İ	ll	<u> </u>	<u> </u>		<u> </u>	<u>i</u>	▼				<u> </u>	
NSTRUCTION OF ROAD	D D1 WITHIN PART 1A	494	24-Oct-22	22-Jun-24	22-Feb-23	22-Jun-24	0							V		1		~				
CONSTRUCTION OF PO	DRTION 1 (ROAD D1 E/B & W/B CH170 TO CH230)	274	03-May-23	02-Apr-24	03-May-23	02-Apr-24	0	1							-		7					
SECTION 3A		274	03-May-23	02-Apr-24	03-May-23	02-Apr-24	0	1			††		†		V		-					
KTD.D1.1000	Site clearance, haul road diversion, formation and fence off working area	8	03-May-23	11-May-23	03-May-23	11-May-23	0	1														
	Chamber K1 Trial Pit Excavation	12	- 8	25-May-23		100	0	1	- 		 						ł					-
	Chamber K1 Modification Works	52	27-May-23		27-May-23		0	1														
	\$200,000 (000,000,000,000,000,000,000,000,	10					0	-	ļļ		 				$+$ \top		 					
	Chamber K1 Backfilling Works		29-Jul-23		-	09-Aug-23	0	,							1 1	1						
KTD.D1.1010	Excavate and construct stormwater drain from SMH1023 to SMH1021 and associated gullies	40	10-Aug-23	25-Sep-23	10-Aug-23		0	1			<u> </u>		<u> </u>				<u> </u>					
KTD.D1.1050	Backfill and construct road kerb/central divider from Road D1 E/B & W/B CH170 to CH230 for road works	22	30-Jan-24	26-Feb-24	30-Jan-24	26-Feb-24	0	1		1							-					
KTD,D1,1060	Backfill and compact sub-base from Road D1 E/B & W/B CH170 to CH230 for road works	28	27-Feb-24	02-Apr-24	27-Feb-24	02-Apr-24	0	1		1												202
SECTION 3B		102	26-Sep-23	29-Jan-24	26-Sep-23	29-Jan-24	0	1								-	7					
KTD,D1,1020	Excavate and construct stormwater drain from SMH1054 to SMH1051 and associated gullies	42	26-Sep-23	16-Nov-23	26-Sep-23	16-Nov-23	0	1														
KTD,D1,1030	Excavate and construct sewerage from FMH25_1 to FMH25_2a	30	17-Nov-23	21-Dec-23	17-Nov-23	21-Dec-23	0	1			† <u>†</u>		11				† †					***
	Excavate and construct FWM/SWM from CH450 to CH500	30	17517757757	1	22-Dec-23	200000000000000000000000000000000000000	0	1														
		395			22-Feb-23		0	1	<u></u>		 						 	 }				-
	DRTION 2 (ROAD D1 E/B CH230 TO CH396)	393														-						
SECTION 3A		395	22-Feb-23		22-Feb-23		0	1	ļļ		 	ļ					ļļ					
SACTOR STATE OF THE SACTOR	Site clearance, haul road diversion, formation and fence off working area	16	22-Feb-23		22-Feb-23		0	1							<u> </u>							
KTD.D1.2001.AVC2.1	ChamberAVC2 Excavation Works	20	13-Mar-23	04-Apr-23	13-Mar-23	04-Apr-23	0	1							<u> </u>		1					
KTD.D1,2001.AVC2,2	Chamber AVC2 Modification Works	84	06-Apr-23	20-Jul-23	06-Apr-23	20-Jul-23	0	1														
KTD.D1.2001.AVC2.3	Chamber AVC2 Backfilling Works	20	21-Jul-23	12-Aug-23	21-Jul-23	12-Aug-23	0	1														
	Chamber WOC1 Excavation Works	20	14-Aug-23	05-Sep-23	14-Aug-23	05-Sep-23	0	1			1 1		1	1			T		7777			
	Chamber WOC1 Modification Works	84	06-Sep-23	200000000000000000000000000000000000000	06-Sep-23	555555555	0	1													į	
	Chamber WOC1 Backfilling Works	15	16-Dec-23				0	1			 						<u> </u>				-	
		54	1000000	40.02 0.00			0	1														
	Excavate and construct stormwater drain from SMH1101B to SMH1201C		06-Jan-24		-	_	0	-			ļļ											
	Backfill and construct road kerb/central divider from Road D1 E/B CH230 to CH396	46	12-Mar-24				U	1														
KTD,D1,2030	Backfill and compact sub-base from Road D1 E/B CH230 to CH396	36	10-May-24		100000000000000000000000000000000000000		0	1	<u> </u>		<u> </u>	ļļ	ļļ		<u> </u> .		ļļ.		<u> </u>		<u> </u>	
CONSTRUCTION OF PO	ORTION 3 (ROAD D1 W/B CH230 TO CH300)	142	22-Feb-23	15-Aug-23	10-Oct-23	02-Apr-24	187	1								/						
SECTION 3B		142	22-Feb-23	15-Aug-23	10-Oct-23	02-Apr-24	187	1								7						500
KTD.D1.3000	Site clearance, haul road diversion, formation and fence off working area	4	22-Feb-23	25-Feb-23	10-Oct-23	13-Oct-23	187	1							1							
KTD,D1.3010	Excavate and construct stormwater drain from SMH1120 to SMH1123 and associated gullies	26	27-Feb-23	28-Mar-23	14-Oct-23	14-Nov-23	187	1														
KTD.D1.3020	Excavate and construct stormwater drain from SMH1001 to SMH1107 and assoicated guillies	37			07-Nov-23		187	1	H		††		++-				††					2
KTD.D1.3030	Excavate and construct sewerage from FMH25_2a to FMH25_4	12			20-Dec-23		187	1														
300000000000000000000000000000000000000								1			 		-				ļ					
	Excavate and construct FMW/SWM from CH500 to CH570	26	-		06-Jan-24										1 1							
KTD.D1.3050	Backfill and construct road kerb/central divider from Road D1 W/B CH230 to CH300	26	24-Jun-23		1	08-Mar-24		1	ļ		ļļ	ļ		_ _			ļļ				<u></u>	
KTD,D1,3060	Backfill and compact sub-base from Road D1 W/B CH230 to CH300	18	26-Jul-23	15-Aug-23	09-Mar-24	02-Apr-24	187	1														
CONSTRUCTION OF DE	ORTION 4 (ROAD D1 W/B CH300 TO CH396)	125	28-Apr-23	25-Sep-23	20-Dec-23	25-May-24	195	1			l				V	_	<u> </u>					
CONSTRUCTION OF PC		125	28-Apr-23	25-Sep-23	20-Dec-23	25-May-24	195	1		1	1 1		i i		V	~	1 1	1	1 1			
SECTION 3B			-						1		1 1		1 1	100	1	18	1 1	1 1	E 3			
	Site clearance, haul road diversion, formation and fence off working area	4		03-May-23	20-Dec-23	23-Dec-23	195	1							0							

▼ Critical Milestone Critical Remaining Work

Rev. 46
ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area WORKS PROGRAMME

(Page 10 of 12)

Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL



▼ Critical Milestone

Summary

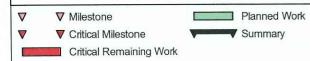
Activity Name

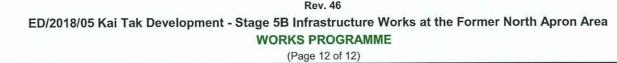
ED/2018/05 Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area **WORKS PROGRAMME**

(Page 11 of 12)

Date	Revision	Checked	Approved	
03-May-24	Works Programme	HL	RL	
30-May-24	Works Programme	HL	RL	
27-Jun-24	Works Programme	HL	RL	

Activi	ty ID	Activity Name	Dur (d)	Early Start	Early	Late Start	Late Finish		Calendar				2021		202		20	200		2024		2025		2026	11.15
					Finish			Float		JASC	NDJ	FMAN	JJAS	OND	JFMAMJ	ASONDJ	FMAMJ	JASONI	JFMAN	JASO	NDJFMAN	JASO	NDJFM	AMJ	JAS
	STORY THE STREET	DESTRIAN STREET NO.2 WITHIN PART 4	336			23-Nov-20		629				1													
Н	KTD.PS2.1000	Liaison/coordinate with adjacent projects (incl Station Square, Housing Sites and etc.) for interfacing issues	60	23-Nov-20	21-Jan-21			0	2					ļļ					ļļ					ļl	
П	KTD.PS2.1010	Excavate and construct storm drain pipework (59mL) /catchpit/manholes from SMH404 to SMH402	28	22-Jan-21	26-Feb-21		26-Feb-21	0	1		-	-													
н	KTD.PS2.1020	Backfill fm SMH404 to SMH402/Excavate and construct storm drain pipework (59mL)/catchpit/manhole fm SMH402 to SMH402.	29	19-Feb-21	24-Mar-21	19-Feb-21	24-Mar-21	0	1					1					<u> </u>					ļl	
П	KTD,PS2,1030	Backfill fm SMH402 to SMH401/Excavate and construct storm drain pipework (59mL)/catchpit/manhole fm SMH401 to SMH	26	17-Mar-21	20-Apr-21	17-Mar-21	20-Apr-21	0	1																
Н	KTD.PS2.1040	Backfill within Part 4 and construct fresh watermain pipework (164mL)/chambers from CH179 to CH15	39	13-Apr-21	29-May-21	13-Apr-21	29-May-21	0	1				1						<u> </u>					ļl	
П	KTD.PS2.1050	Construct road lighting drawpits and lay cable ducts/Backfill upto formation level for Pedestrian Street No.2	26	31-May-21	30-Jun-21	31-May-21	30-Jun-21	0	1																
П	KTD.PS2.1060	Planned Completion of Underground Utilities/Services within Part 4 (Related to Section 4)	0		30-Jun-21		30-Jun-21	0	2				Ÿ.	<u> </u>										ļļ	
Н	KTD.PS2.1070	Construct roadwork and landscape softworks within Part 4 (incl pedestrian street)	160	02-Jul-21	11-Jan-22	14-Aug-23	24-Feb-24	629	1					1 1											
П	CONSTRUCTION OF RO	AD L16 WITHIN PART 6	303	23-Dec-23	31-Dec-24	15-Mar-24	30-Jun-25	144	1					<u> </u>		ll.			Y		7				
П	KTD.RW.2090	Liasion with developer of the sites 2A4, 2A5(B) and 2A10 and construction of drainage and sewage works within Part 6	156	23-Dec-23	06-Jul-24	15-Mar-24	23-Sep-24	66	1																
П	KTD.RW.2100	Construct roadwork, remaining UUs/services and landscape softworks within Part 6 (incl remaining Road L16)	147	08-Jul-24	31-Dec-24	28-Dec-24	30-Jun-25	144	1			i							J						
Н	CONSTRUCTION OF RO	AD D1 WITHIN PART 5	312	30-Jun-22	18-Jul-23	08-Dec-22	27-Dec-23	134	1						1			7							
Н	KTD.RW.2080	Construct roadwork, underground utilities/services within Part 5	312	30-Jun-22	18-Jul-23	08-Dec-22	27-Dec-23	134	1											ii				L	
	CONSTRUCTION OF UN	DERGROUND UTILITIES WITHIN PARTS 1B, 6A AND 7 AND REMAINING AT ALL PARTS	341	13-Dec-23	07-Feb-25	13-Jun-25	30-Jun-26	412										V							
	KTD.RW.2110	Construct underground utilities/services within remaining works of all Parts	312	13-Dec-23	31-Dec-24	13-Jun-25	30-Jun-26	441	1			į						1							
П	CONSTRUCTION OF U	UNDERGROUND UTILITIES WITHIN PARTS 6A AND 7	187	24-Jun-24	07-Feb-25	11-Nov-25	30-Jun-26	412																	
П	KTD,P67.1000	Excavate/install FWM and SWM from CH400 to CH350 (50mL) and fittings	62	24-Jun-24	04-Sep-24	11-Nov-25	24-Jan-26	412	1																
П	KTD,P67,1010	Backfill FWM and SWM from CH400 to CH350	21	05-Sep-24	30-Sep-24	26-Jan-26	21-Feb-26	412	1				T	T	1 [<u> </u>	T		T T				
Н	KTD.P67.1020	Excavate/install FWM and SWM from CH350 to CH300 (50mL) and fittings and chambers	83	02-Oct-24	10-Jan-25	23-Feb-26	04-Jun-26	412	1																
П	KTD.P67.1030	Backfill FWM and SWM from CH350 to CH300	21	11-Jan-25	07-Feb-25	05-Jun-26	30-Jun-26	412	1			1		1			1 1								
П	KTD.P67.1040	Planned Completion of Underground Utilities/Services within Parts 6A and 7 (Related to Section 2)	0		07-Feb-25		30-Jun-26	508	2												▽				
Н	CONSTRUCTION OF ADD	OTIONAL COVER WALKWAY FP3 UNDER PMI 006	115	30-Nov-20	23-Apr-21	30-Nov-20	23-Apr-21	0	STATE OF THE PARTY.		V			11					1						10.50.00.0
П	KTD.FP3,1000	Land allocation/taking over from MTRC/LandsD for construction of additional footpath and cover walkway FP3	0	30-Nov-20		30-Nov-20		0	2		▼														
	KTD.FP3.1010	Site clearence and formation works (1 team)	18	30-Nov-20	19-Dec-20	30-Nov-20	19-Dec-20	0	1					1			1 1		1 1						
П	KTD.FP3.1020	Construction of storm drain system (incl. u-channel and catch pits, 15m3 conc., 1 team)	18	07-Dec-20	29-Dec-20	07-Dec-20	29-Dec-20	0	1																
П	KTD,FP3,1030	Implement TTA for connection of storm drain system to existing manhole	1	30-Dec-20	30-Dec-20	07-Apr-21	07-Apr-21	76	1		i			11					T T	-11					
Н	KTD.FP3.1040	Remove pavement, excavate for drain pipe laying and cast concrete surround (10m-L, 5.4m3 exca, 2m3 conc, 1 team)	8	31-Dec-20	09-Jan-21	08-Apr-21	16-Apr-21	76	1		þ														
П	KTD.FP3.1050	Backfilling and reinstatement of existing pavement (5m2, 1 team)	5	11-Jan-21	15-Jan-21	17-Apr-21	22-Apr-21	76	1		0			†					†****		Ti Ti		 		
	KTD.FP3,1060	Site clearenc and remove TTA to resume traffic	1	16-Jan-21	16-Jan-21	23-Apr-21	23-Apr-21	76	1		1														
П	KTD,FP3,1070	Placing concrete blocks foundation and erection of site hoarding (45m-L, 1 team)	6	21-Dec-20	29-Dec-20	21-Dec-20	29-Dec-20	0	1		d			†					††					ļt	
	KTD,FP3,1080	Construction of foundation for footpath cover (230m3 conc, 1 team)	12	21-Dec-20	06-Jan-21			0	1																
	KTD.FP3,1090	Installation of steel frame of footpath cover, site hoarding and lighting system	15	30-Dec-20	16-Jan-21	30-Dec-20	16-Jan-21	0	1										†						
	KTD.FP3.1100	Placing sub-base and construction of footpath pavement (45m3 sub-base, 35m3 conc, 1 team)	15	30-Dec-20	16-Jan-21	30-Dec-20	16-Jan-21	0	1																
	KTD.FP3.1104	Construction/Installation for additional works for FP3 under CE028	76	18-Jan-21	23-Apr-21	100000000000000000000000000000000000000	23-Apr-21	0	1	-				1					1						
	KTD.FP3.1105	Provision of power supply by CLP for lighting system at FP3 (CE028)	76	18-Jan-21	23-Apr-21			0	1																
	KTD.FP3.1110	Planned Completion of Additional Footpath and Over Walkway FP3 under PMI 006	0		23-Apr-21		23-Apr-21	0	2	-		▼		1					†***						
			1450	12-Jan-22		27-Sep-23		181	2									_		+-+	_	+	-		
,	PROJECT ESTABLISHMEN KTD.EW.1000	Establishment works for all landscape softworks (except Parts 3, 4 and 6)	365	19-Jul-23	17-Jul-24			162	2					†					4	-			†	ļ	
	KTD.EW.1010	Establishment works for landscape softworks (except Pairs 3, 4 and 5) Establishment works for landscape softworks within Part 3 (Subj to excision within 416 days)	365	24-Feb-23	23-Feb-24		California and Califo	367	2																
	KTD.EW.1010	Establishment works for landscape softworks within Part 4 (Subj to excision within 244 days)	365	12-Jan-22	11-Jan-23			775	2					·					+					ļ	
			365	01-Jan-25	31-Dec-25		30-Jun-26	181	2																
	KTD.EW.1030	Establishment works for landscape softworks within Part 6 Establishment works for landscape softworks under Section 1	365			27-Sep-23		-149	2	<u> </u>									-					ļļ	
	KTD.EW.1040		0	201 60-24	31-Dec-25		30-Jun-26	181	2																
	KTD,EW,1050	Planned Contract Completion Date	U	1	J1-De0-25	1	30-3011-20	101				i_									ii_	<u>i i</u>		<u> </u>	





Date	Revision	Checked	Approved
03-May-24	Works Programme	HL	RL
30-May-24	Works Programme	HL	RL
27-Jun-24	Works Programme	HL	RL

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 July 2024

July 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4 Weekly Site Inspection	5 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	6
7	8	9	10	11 Weekly Site Inspection 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	12	13
14	15	16	17 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	18 Weekly Site Inspection	19	20
21	22	23 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	24	25 Weekly Site Inspection + SSMC meeting	26	27
28	29 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	30	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 August 2024

August 2024

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

NOTE:

1) Site inspection schedule and Impact monitoring schedule may be changed due to unforeseen circumstance (e.g. adverse weather).

Air Quality Monitoring Station AM2(A) Ng Wah Catholic Secondary School AM3 - Sky Tower Noise Quality Monitoring Station M4(A) - Le Billionnaire M5(A) - Prince Ritz

Appendix D – Photographic records

Impact Air Quality Monitoring



Measurement setup at AM2(A)



Measurement setup at AM3



Weather Station at the rooftop of Ng Wah Catholic Secondary School

Impact Noise Monitoring



Measurement setup at M4(A)



Measurement setup at M5(A)

Appendix E – Calibration certificates, catalogue of air quality monitoring equipment

Catalogue of High Volume Sampler (HVS)



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 🕡

www.tisch-env.com

36-60 CFM

Made In USA

Total Suspended Particulate(TSP)

Mass Flow Controlled

7-Day Mechanical Timer

Flapsed Time Indicator

Brush Style Motor

Aluminum Outdoor Shelter

Dickson Chart Recorder, 24 Hour

Stainless Steel Filter Holder



TSP MFC

MFC TSP Ambient Air Sampler

Particulate Size: Total Suspended Particulate (TSP)

EPA Designation: CFR 40 Part 50 Appendix B Flow Controller: Mass Flow Controller

Motor Style: Brush Style Motor Assembly

Pressure Recorder: Dickson Chart Recorder, 24 hour

Timer: 7 Day Mechanical

Elapsed Time Indicator: Mechanical, Hours and Tenths

Flow Range: 39-60CFM, 1.09M³M-1.68M³M

Housing: Anodized Aluminum

Filter Holder: Stainless Steel, 8" x 10"

4" Recorder Charts: Box of 100

Filter Holder: 8" x 10" Stainless Steel with hold down frame

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

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"

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

Available Models

TE-5028 -Variable Flow Calibration Kit

TE-HVC-V Xcalibrator HiVol Calibrator

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



Calibration Certificate of HVS

$Air\ Sampler\ Calibration\ Curve\ Plotting\ \&\ Calculation$

(Dickson recorder)

Calibration cu	rve ref. No. :	ATSPC-01-2024060704	Date of calibration :	07/06/2024	
Model no :	Ng Wah Ca	tholic Secondary School	Sampler :	TE-5170X	
			Serial Number :	4360	

Calibration Data

Ambient barometric pressure, Pa = ___755.4__ (mmHg) Ambient temperature, Ta = ___299.75__ (deg K)

Calibration Orifice

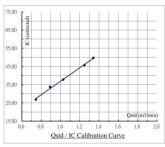
Model = TE-5025A	Qstd Slope, m = 2.0	3976
Serial No. = 0006	Qstd Intercept, b =	-0.01299
Calibration Due Date: 06/05/2025	Ostd Corr. coeff. r =	1.00000

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ / min)	I (chart)	IC (corrected)
18	7.50	1.341	50.0	49.70
13	6.50	1.249	46.0	45.73
10	4.40	1.029	38.0	37.77
7	3.30	0.892	34.0	33.80
5	2.30	0.745	27.0	26.84

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1/m1 [(1)(Sqrt((Pav/760)(298/Tav)))-b1]	37.126	-0.2586	0.9979



 $Calibration \ curve \ requirements: \quad (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)).



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

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. :	ATSPC-01-2024060701	Date of calibration :	07/06/2024	_
Model no :	Sky Tower	Sampler:	TE-5170X	
		Serial Number :	4687	

Calibration Data

Ambient barometric pressure, Pa = 755.4 (mmHg) Ambient temperature, Ta = 299.75 (deg K)

Calibration Orifice

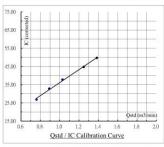
Model = TE-5025A	Qstd Slope, m = 2.03976	
Serial No. = 0006	Qstd Intercept, b = -0.01299	
Calibration Due Date: 06/05/2025	Qstd Corr. coeff., r = 1.00000	

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	8.00	1.385	50.0	49.70
13	6.50	1.249	45.0	44.73
10	4.40	1.029	38.0	37.77
7	3.30	0.892	33.0	32.80
5	2.40	0.761	27.0	26.84

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Ostd = 1 / m1 [(1)(Sqrt((Pay/760)(298/Tay)))-b1]	35.732	0.3774	0.9980



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

 $\begin{array}{lll} Remark: & Qstd \left(\, m^3 \, / \, min \, \right) = 1/m \, [\, Sqrt \left(\, H_2O \left(\, Pa \, / \, 760 \, \right) \left(\, 298 \, / \, Ta \, \right) \,) \, - b \,]. \\ & IC \left(\, corrected \, \right) = I \, [\, Sqrt \left(\, \left(\, Pa \, / \, 760 \, \right) \left(\, 298 \, / \, Ta \, \right) \, \right) \,]. \\ & FLOW \left(\, corrected \, \right) = \, Sqrt \left(\, FLOW \left(\, mano \, \right) \left(\, Pa \, / \, 760 \, \right) \left(\, 298 \, / \, Ta \, \right) \,). \end{array}$

Calibrated by: 07/06/2024 Checked by: 07/06/2024
Name: (Ben Poon) Name: (Chris Choy)

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

Calibration Certificate of HVS used for performance check of Dust Meter

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. :	ATSPC-01-2024053002	Date of calibration :	30/05/2024	
Model no :	GS2310	Serial number :	10346	
Calibration Data			0	

Ambient barometric pressure, Pa = 753.9 (mmHg) Ambient temperature, Ta = 298.65 (deg K)

Calibration Orifice

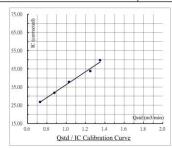
Model = TE-5025A Qstd Slope, m = 2.03976 Serial No. = 0006 Qstd Intercept, b = -0.01299 Calibration Due Date: 06/05/2025 Qstd Corr. coeff., r = 1.00000

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ / min)	I (chart)	IC (corrected)
18	7.60	1.351	50.0	49.74
13	6.50	1.250	44.0	43.77
10	4.40	1.029	38.0	37.81
7	3.20	0.879	32.0	31.84
5	2.20	0.730	27.0	26.86

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(1)(Sqrt((Pav/760)(298/Tav)))-b1]	35.445	0.8648	0.9952



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

Qstd (m^3 / min) = 1/m [Sqrt (H_2O (Pa / 760) (298 / Ta)) - b]. Remark : IC (corrected) = I [Sqrt ((Pa / 760) (298 / Ta))].

FLOW (corrected) = Sqrt (FLOW (mano) (Pa / 760) (298 / Ta)).

30/05/2024 Checked by : ___ Name: (Chris Choy Ben Poon Form No. INS-HVS-CAL dd 16 01 2020

Orifice Transfer Standard Certification Worksheet TE-5025A



RECALIBRATION DUE DATE:

May 6, 2025

Calibration Certification Information				
Cal. Date: May 6, 2024	Rootsmeter 5/N: 438320	Ta: 295	*K	
Operator: Jim Tisch		Pa: 748.5	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	1.4190	3.2	2.00
2	3	4	1	1.0030	6.4	4.00
3	5	6	1	0.8950	7.9	5.00
4	7	8	1	0.8520	8.8	5,50
5	9	10	1	0.7040	12.7	8.00

		Data Tabulat	tion		
Vstd (m3)	Qstd (x-axis)	√∆H(Pa / Tstd) (y-axis)	Va	Qa (x-axis)	√∆H(Ta/Pa) (y-axis)
0.9907	0.6982	1.4106	0.9957	0.7017	0.8878
0.9864	0.9835	1.9949	0.9914	0.9885	1.2556
0.9844	1.0999	2.2304	0.9894	1.1055	1.4037
0.9832	1.1540	2.3393	0.9882	1.1599	1.4723
0.9781	1.3893	2.8213	0.9830	1.3964	1.7756
	m=	2.03976		m=	1,27726
QSTD	b=	-0.01299	QA	b=	-0.00818
-,	r= 1,00000		r=	1.00000	

	Calculatio	ns	
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va≃	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	Qa= Va/ΔTime	
- 2	For subsequent flow ra	te calculatio	ns:
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	1/m((√ΔH(Ta/Pa))-b

	Standard Conditions
Tstd:	298.15 °K
Pstd:	760 mm Hg
	Key
ΔH: calibrator	manometer reading (in H2O)
ΔP: rootsmete	er manometer reading (mm Hg)
Ta: actual abs	olute temperature ("K)
Pa: actual ban	ometric pressure (mm Hg)
b: intercept	
m: slone	

RECALIBRATION US EPA recommends annual recalibration per 1998

40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.

145 South Miami Avenue Village of Cleves, OH 45002

www.tisch-env.com TOLL FREE: (877)263-7610

FAX: (513)467-9009

Catalogue of Dust Meter (TSI Sidepak AM510)

The SidePak AM510 monitor's easy-to-read display shows your data as both real-time aerosol mass-concentration and 8-hour time-weighted average (TWA). With its convenient data logging and long battery life, the 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
- + Choice of rechargeable NiMH smart battery packs or AA-cell pack

Model AM510 SidePak Personal Aerosol Monitor

Sensitivity

90° light scattering, Sensor Type 670 nm laser diode 0.001 to 20 mg/m³ Aerosol Concentration Range (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

User-adjustable, 0.7 to 1.8 Range 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)

Jser-adjustable, 1 to 60 seconds

Data Logging

Approx. 31.000 Data Points 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

Weight

4.2 x 3.7 x 2.8 in. (106 x 92 x 70 mm) with 801723, 801724, 801729 or External Dimensions

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 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 Tripod Socket 2 line x 12 character LCD 1/4-20 female thread

Power Supply/Charger (P/N 2613210) Input Voltage Range 100 to 240 VAC, S0 to 60 Hz Input Voltage Range

Output Voltage 9 VDC @ 1.0 A

Maintenance

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

Communications Interface

USB 1.1

Type 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 Microsoft Windows® XP, or 7 Operating System

(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.



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 AM510 Model 74.14 (23.4) °F (°C) Temperature 47.6 Relative Humidity 11208032 Serial Number 28.96 (980.7) inHg (hPa) Barometric Pressure ☐ In Tolerance ☐ As Left As Found Concentration Linearity Plot o = In Tolerance • = Out of Tolerance System ID: DTII01-02 Aerosol Concentration (mg/m³) CONCENTRATION STANDARD ALLOWABLE RANGE ALLOWABLE RANGE MEASURED 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 System ID Last Cal. Cal. Due E003433 03-21-23 09-30-23 E003511 10-25-22 10-31-23 E003315 01-09-23 01-31-24 Measurement Variable System ID Last Cal Cal Due Measurement Variable DC Voltage E010339 12-05-22 06-30-24 Photometer Microbalance M001324 01-09-23 01-31-25 Pressure Flowmeter E002471 05-22-23 05-31-24 DC Voltage August 8, 2023 TEAN. FWU

Personal Aerosol Monitor Performance check with High Volume Sampler

Preformance Check ref. No	AS0240523-1	Report Issue Date	23/05/2024	
Date of performance check	23/05/2024	_		

Objective

Calibration Certificate of Dust Meter (TSI Sidepak AM510)

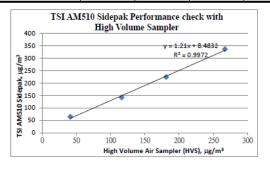
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

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

Resustt:

Equipment	Measurement Result, μg/m ³				
TSI AM510 Sidepak	64 142 224 336				
High Volume Air Sampler (HVS)	41	116	181	267	





Calibration Certificate of Dust Meter (TSI Sidepak AM510) ARCT DOD -7 A 1 1. 4 AL (30) 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 Model AM510 73.99 (23.3) °F (°C) 51.8 %RH Relative Humidity Serial Number 11411017 28.83 (976.3) inHg (hPa) ⊠ As Left ☑ In Tolerance ☐As Found Out of Tolerance Concentration Linearity Plot o = In Tolerance o = Out of Tolerance System ID: DTII01-01 Aerosol Concentration (mg/m3) CONCENTRATION Unit: mg/m3 # STANDARD MEASURED ALLOWABLE RANGE ALLOWABLE RANGE 1.451~1.773 0.074 15.040 TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in stricaccordance 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 Photometer System ID E003319 Last Cal. 03-17-23 Cal Due 09-30-23 DC Voltage(Keithley) Pressure E002455 06-613-23 06-30-24 07-24-23 07-31-24 Measurement Variable Flowmeter Microbalance Photometer DC Voltage(Keithley) Pressure M001324 02-09-23 02-28-25 August 9, 2023

Personal Aerosol Monitor Performance check with High Volume Sampler

Preformance Check ref. No	AS0240523-3	Report Issue Date	23/05/2024	
Date of performance check	23/05/2024			

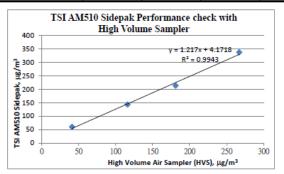
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11411017
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

Resusit:

Equipment	Measurement Result, μg/m ³			
TSI AM510 Sidepak	60 143 213 337			
High Volume Air Sampler (HVS)	41	116	181	267



Tested by Name: Choy Ching Yee Form No. ENV CAL SAMPLER CC1 dd12/12/2003

Catalogue of Weather Station

Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations



6152C 6162C

Vantage Pro2[™]

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

Integrated Sensor Suite (ISS)

Operating Temperature	-40° to +150°F (-40° to +65°C)
Non-operating Temperature	-40° to +158°F (-40° to +70°C)
	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)

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 (214 cm²) collection area Temperature Sensor Type...... PN Junction Silicon Diode Relative Humidity Sensor Type Film capacitor element 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 Instruments 3465 Diablo Ave., Hayward, CA 94545-2778 USA (510) 732-9229 • FAX (510) 670-0589 • sales@davisinstruments.com • www.davisinstruments.com

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

Vantage Pro2

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

Update Interval 50 seconds to 1 minute (5 minutes when dark) Historical Graph Data Hourly Average, Daily, Monthly Highs Alarm High Threshold from Instant Calculation

Wind

Wind Chill (Calculated)

the nearest 1°C

Range -110° to +135°F (-79° to +57°C)

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

Update Interval 2.5 to 3 seconds

Monthly Dominant

Monthly Dominants

other units are converted from mph and rounded to nearest 1 km/hr, 0.1

m/s, or 1 knot.

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

Highs with Direction of Highs

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.: CC0112402(1)

Information provided by customer

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

Equipment identification provided by customer

Equipment Description Manufacturer Model No. Serial No. Assigned equipment No.: Weather Station AY170606003 Davis Vantage PRO 2 AAST-WS-01

Certificate Information

Date of Receipt: 6 February 2024 21.5°C, 55%RH, 1012hPa Calibration Condition: Date of Calibration: 16 February 2024 Adjustment: N/A Due Date of Calibration: N/A Appearance: Good JJF 1183-2007, JJF 1076-2001, Calibration Procedure: Remark: N/A SOP-116

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

Note 1: 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 21 is assumed unless explicitly stated.

Note2: The standard (s) and instrument used in the calculation are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy, and good condition.

Note3: The restrict reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long term stability of the

Instrument.

Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Note5: This report supersedes CC0122402 dated 16 February 2024. Reason: Amended assigned equipment no.

Approved By:

Company Chop:

Warren Yeung

Certificate Issue Date: 1 March 2024

CT-BEG-04

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Limited

2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0112402(1) Page 1 of 2



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

Reference reading (°C)	Reading (°C)	Error (°C)	Uncertainty (°C)
15.0	15	0	2
20.0	20	0	2
25.0	25	0	2
30.0	29	-1	2

Reference reading (%RH)	Reading (%RH)	Error (%RH)	Uncertainty (%RH)
40.0	42	2	2
50.0	51	1	2
70.0	70	0	2

Wind Speed

Reference reading (m/s)	Measured reading (m/s)	Error (%)	Uncertainty (%)
0.0	0.0	N/A	3.6
2.0	2.0	0.0	3.6
5.0	4.9	-2.0	3.6
8.0	7.8	-2.5	3.6

Wind Direction

Reference reading	Measured reading	Error	Uncertainty
0°	0°	0°	5°
45°	45°	0°	5°
90°	90°	0°	5°
135°	135°	0°	5°
180°	180°	0°	5°
225°	225°	0°	5°
270°	270°	0°	5°
315°	315°	0°	5°

*** End of Certificate ***

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Page 2 of 2

Appendix F – Weather information

General Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)	Total Rainfall (mm)	Mean Relative Humidity (%)
1/7/2024	29.3	32.4	2.5	78
2/7/2024	29.1	32.7	5.3	79
3/7/2024	28.7	33.6	0	78
4/7/2024	27.7	32.5	5.1	78
5/7/2024	28.5	34.6	1.5	76
6/7/2024	29.2	34.0	0.2	77
7/7/2024	29.6	34.8	Trace	74
8/7/2024	29.5	34.4	0.2	72
9/7/2024	28.9	34.3	Trace	72
10/7/2024	27.0	34.5	10.7	75
11/7/2024	28.5	32.2	6.5	78
12/7/2024	27.4	31.7	24.4	84
13/7/2024	27.7	33.8	8	76
14/7/2024	26.7	34.6	90	82
15/7/2024	27.9	33.0	13.6	85
16/7/2024	26.0	30.4	15.7	86
17/7/2024	26.7	32.7	13.7	83
18/7/2024	26.7	30.9	19.6	88
19/7/2024	27.1	30.8	40.5	89
20/7/2024	29.0	33.5	3.7	85
21/7/2024	28.6	32.1	4.7	83
22/7/2024	29.0	33.5	0.2	80
23/7/2024	28.8	33.3	0	76
24/7/2024	28.7	32.7	0	80
25/7/2024	29.5	33.1	Trace	78
26/7/2024	28.9	30.3	3.9	85
27/7/2024	27.0	30.2	34.7	88
28/7/2024	26.4	27.8	69.4	94
29/7/2024	26.6	29.6	6.7	89
30/7/2024	26.1	30.3	29.5	89
31/7/2024	26.2	30.2	48.2	88

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=2024&m=7

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
1/7/2024	0:00	0.4	45	2/7/2024	0:00	0.9	90	3/7/2024	0:00	0.9	247.5	4/7/2024	0:00	0.4	292.5
1/7/2024	1:00	0.4	247.5	2/7/2024	1:00	0.4	112.5	3/7/2024	1:00	0.4	270	4/7/2024	1:00	0.4	247.5
1/7/2024	2:00	0.4	225	2/7/2024	2:00	0.4	112.5	3/7/2024	2:00	0.4	247.5	4/7/2024	2:00	0.4	270
1/7/2024	3:00	0.4	67.5	2/7/2024	3:00	0.9	112.5	3/7/2024	3:00	0.9	270	4/7/2024	3:00	0.9	270
1/7/2024	4:00	0.4	270	2/7/2024	4:00	0.9	90	3/7/2024	4:00	0.9	247.5	4/7/2024	4:00	0.9	135
1/7/2024	5:00	0.4	247.5	2/7/2024	5:00	1.3	112.5	3/7/2024	5:00	1.3	225	4/7/2024	5:00	0.4	315
1/7/2024	6:00	0.4	180	2/7/2024	6:00	1.3	112.5	3/7/2024	6:00	1.3	247.5	4/7/2024	6:00	2.2	315
1/7/2024	7:00	0.4	247.5	2/7/2024	7:00	0.9	90	3/7/2024	7:00	0.9	247.5	4/7/2024	7:00	1.3	45
1/7/2024	8:00	0.9	270	2/7/2024	8:00	0.9	90	3/7/2024	8:00	0.9	90	4/7/2024	8:00	1.3	247.5
1/7/2024	9:00	1.3	135	2/7/2024	9:00	1.3	112.5	3/7/2024	9:00	0.9	67.5	4/7/2024	9:00	1.3	270
1/7/2024	10:00	1.3	157.5	2/7/2024	10:00	1.3	112.5	3/7/2024	10:00	0.4	67.5	4/7/2024	10:00	2.2	270
1/7/2024	11:00	0.9	270	2/7/2024	11:00	0.9	135	3/7/2024	11:00	0.4	67.5	4/7/2024	11:00	2.2	270
1/7/2024	12:00	0.9	112.5	2/7/2024	12:00	0.9	90	3/7/2024	12:00	0.9	45	4/7/2024	12:00	2.7	247.5
1/7/2024	13:00	0.4	90	2/7/2024	13:00	0.4	112.5	3/7/2024	13:00	0.9	67.5	4/7/2024	13:00	1.8	135
1/7/2024	14:00	0.9	112.5	2/7/2024	14:00	0.9	112.5	3/7/2024	14:00	1.3	225	4/7/2024	14:00	2.2	135
1/7/2024	15:00	0.4	90	2/7/2024	15:00	0.4	112.5	3/7/2024	15:00	0.9	135	4/7/2024	15:00	1.3	135
1/7/2024	16:00	0.4	112.5	2/7/2024	16:00	0.4	90	3/7/2024	16:00	0.4	225	4/7/2024	16:00	1.3	202.5
1/7/2024	17:00	0.9	112.5	2/7/2024	17:00	0.9	45	3/7/2024	17:00	0.4	247.5	4/7/2024	17:00	1.3	270
1/7/2024	18:00	0.9	45	2/7/2024	18:00	0.9	112.5	3/7/2024	18:00	0.9	247.5	4/7/2024	18:00	0.9	112.5
1/7/2024	19:00	0.4	45	2/7/2024	19:00	0.9	292.5	3/7/2024	19:00	0.9	90	4/7/2024	19:00	1.3	67.5
1/7/2024	20:00	0.4	135	2/7/2024	20:00	0.9	112.5	3/7/2024	20:00	1.3	67.5	4/7/2024	20:00	0.9	157.5
1/7/2024	21:00	0.9	112.5	2/7/2024	21:00	1.8	90	3/7/2024	21:00	1.3	67.5	4/7/2024	21:00	0.9	112.5
1/7/2024	22:00	0.4	90	2/7/2024	22:00	1.3	90	3/7/2024	22:00	0.9	90	4/7/2024	22:00	1.8	180
1/7/2024	23:00	0.4	112.5	2/7/2024	23:00	1.8	112.5	3/7/2024	23:00	0.9	112.5	4/7/2024	23:00	0.4	180

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
5/7/2024	0:00	0.9	247.5	6/7/2024	0:00	0.9	90	7/7/2024	0:00	0.9	112.5	8/7/2024	0:00	1.3	67.5
5/7/2024	1:00	0.9	157.5	6/7/2024	1:00	0.4	90	7/7/2024	1:00	1.3	135	8/7/2024	1:00	1.3	90
5/7/2024	2:00	0.9	180	6/7/2024	2:00	0.4	90	7/7/2024	2:00	0.9	90	8/7/2024	2:00	0.9	90
5/7/2024	3:00	0.9	45	6/7/2024	3:00	0.4	67.5	7/7/2024	3:00	0.9	67.5	8/7/2024	3:00	0.9	90
5/7/2024	4:00	0.9	112.5	6/7/2024	4:00	0.4	112.5	7/7/2024	4:00	0.9	112.5	8/7/2024	4:00	0.9	67.5
5/7/2024	5:00	0.4	112.5	6/7/2024	5:00	0.4	22.5	7/7/2024	5:00	0.9	45	8/7/2024	5:00	0.9	112.5
5/7/2024	6:00	0.4	112.5	6/7/2024	6:00	0.4	270	7/7/2024	6:00	0.9	135	8/7/2024	6:00	0.9	22.5
5/7/2024	7:00	0.4	135	6/7/2024	7:00	0.4	0	7/7/2024	7:00	0.4	67.5	8/7/2024	7:00	1.8	270
5/7/2024	8:00	0.9	112.5	6/7/2024	8:00	0.4	270	7/7/2024	8:00	0	135	8/7/2024	8:00	1.3	0
5/7/2024	9:00	0.9	90	6/7/2024	9:00	1.3	337.5	7/7/2024	9:00	0.4	67.5	8/7/2024	9:00	0.9	270
5/7/2024	10:00	0.9	90	6/7/2024	10:00	0.9	270	7/7/2024	10:00	0	67.5	8/7/2024	10:00	1.8	337.5
5/7/2024	11:00	0.4	112.5	6/7/2024	11:00	0.9	247.5	7/7/2024	11:00	0.4	90	8/7/2024	11:00	1.3	270
5/7/2024	12:00	0.4	90	6/7/2024	12:00	1.3	225	7/7/2024	12:00	0.4	67.5	8/7/2024	12:00	1.8	247.5
5/7/2024	13:00	1.3	112.5	6/7/2024	13:00	0.9	67.5	7/7/2024	13:00	0.4	112.5	8/7/2024	13:00	0.9	225
5/7/2024	14:00	0.4	135	6/7/2024	14:00	1.3	135	7/7/2024	14:00	1.3	45	8/7/2024	14:00	1.8	67.5
5/7/2024	15:00	0.9	67.5	6/7/2024	15:00	0.4	67.5	7/7/2024	15:00	0.4	135	8/7/2024	15:00	0.9	135
5/7/2024	16:00	0.9	67.5	6/7/2024	16:00	0.4	67.5	7/7/2024	16:00	0.4	67.5	8/7/2024	16:00	1.3	67.5
5/7/2024	17:00	0.4	90	6/7/2024	17:00	1.3	90	7/7/2024	17:00	1.3	135	8/7/2024	17:00	1.3	67.5
5/7/2024	18:00	1.3	90	6/7/2024	18:00	0.9	90	7/7/2024	18:00	0.9	67.5	8/7/2024	18:00	0.4	90
5/7/2024	19:00	0.4	90	6/7/2024	19:00	0.9	90	7/7/2024	19:00	0.9	67.5	8/7/2024	19:00	1.3	90
5/7/2024	20:00	0.4	67.5	6/7/2024	20:00	1.3	67.5	7/7/2024	20:00	0.9	90	8/7/2024	20:00	0.9	90
5/7/2024	21:00	0.9	112.5	6/7/2024	21:00	0.9	67.5	7/7/2024	21:00	0.9	90	8/7/2024	21:00	0.9	67.5
5/7/2024	22:00	0.9	67.5	6/7/2024	22:00	1.3	67.5	7/7/2024	22:00	0.9	90	8/7/2024	22:00	0.9	67.5
5/7/2024	23:00	1.3	247.5	6/7/2024	23:00	0.9	225	7/7/2024	23:00	0.9	67.5	8/7/2024	23:00	0.9	112.5

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
9/7/2024	0:00	0.9	90	10/7/2024	0:00	0.9	225	11/7/2024	0:00	0.9	67.5	12/7/2024	0:00	0.9	112.5
9/7/2024	1:00	1.3	112.5	10/7/2024	1:00	0.9	247.5	11/7/2024	1:00	2.2	112.5	12/7/2024	1:00	0.9	45
9/7/2024	2:00	0.9	202.5	10/7/2024	2:00	0.9	247.5	11/7/2024	2:00	1.8	337.5	12/7/2024	2:00	0.4	112.5
9/7/2024	3:00	0.4	112.5	10/7/2024	3:00	1.8	247.5	11/7/2024	3:00	0.9	112.5	12/7/2024	3:00	0.9	157.5
9/7/2024	4:00	0.4	112.5	10/7/2024	4:00	1.3	247.5	11/7/2024	4:00	2.2	90	12/7/2024	4:00	0.4	292.5
9/7/2024	5:00	0.9	45	10/7/2024	5:00	0.9	157.5	11/7/2024	5:00	1.8	90	12/7/2024	5:00	0.4	112.5
9/7/2024	6:00	0.9	112.5	10/7/2024	6:00	1.3	112.5	11/7/2024	6:00	1.8	112.5	12/7/2024	6:00	0.4	247.5
9/7/2024	7:00	0.9	157.5	10/7/2024	7:00	0.9	45	11/7/2024	7:00	0.9	112.5	12/7/2024	7:00	0.9	90
9/7/2024	8:00	0.4	292.5	10/7/2024	8:00	1.3	270	11/7/2024	8:00	0.9	112.5	12/7/2024	8:00	0.9	90
9/7/2024	9:00	0.4	112.5	10/7/2024	9:00	0.9	247.5	11/7/2024	9:00	0.4	202.5	12/7/2024	9:00	0.9	157.5
9/7/2024	10:00	0.9	247.5	10/7/2024	10:00	0.9	247.5	11/7/2024	10:00	0.4	135	12/7/2024	10:00	0.4	112.5
9/7/2024	11:00	0.4	315	10/7/2024	11:00	0.9	292.5	11/7/2024	11:00	0.9	112.5	12/7/2024	11:00	0.4	90
9/7/2024	12:00	0.4	315	10/7/2024	12:00	1.8	225	11/7/2024	12:00	0.9	112.5	12/7/2024	12:00	0.9	90
9/7/2024	13:00	0.9	135	10/7/2024	13:00	1.3	247.5	11/7/2024	13:00	0.4	112.5	12/7/2024	13:00	0.9	157.5
9/7/2024	14:00	0.9	112.5	10/7/2024	14:00	0.9	247.5	11/7/2024	14:00	0.4	67.5	12/7/2024	14:00	0.4	112.5
9/7/2024	15:00	1.3	112.5	10/7/2024	15:00	1.3	247.5	11/7/2024	15:00	0.4	67.5	12/7/2024	15:00	0.4	112.5
9/7/2024	16:00	0.4	247.5	10/7/2024	16:00	0.9	157.5	11/7/2024	16:00	0.4	45	12/7/2024	16:00	0.4	112.5
9/7/2024	17:00	0.4	247.5	10/7/2024	17:00	1.3	112.5	11/7/2024	17:00	0.9	90	12/7/2024	17:00	0.4	202.5
9/7/2024	18:00	0.4	112.5	10/7/2024	18:00	1.8	45	11/7/2024	18:00	0.9	67.5	12/7/2024	18:00	0.9	135
9/7/2024	19:00	0.9	112.5	10/7/2024	19:00	1.3	270	11/7/2024	19:00	0.4	45	12/7/2024	19:00	0.9	112.5
9/7/2024	20:00	0.9	135	10/7/2024	20:00	1.3	247.5	11/7/2024	20:00	0.4	67.5	12/7/2024	20:00	0.4	202.5
9/7/2024	21:00	0.9	112.5	10/7/2024	21:00	0.9	247.5	11/7/2024	21:00	0.9	225	12/7/2024	21:00	0.4	90
9/7/2024	22:00	0.9	135	10/7/2024	22:00	0.9	292.5	11/7/2024	22:00	0.9	45	12/7/2024	22:00	0.9	67.5
9/7/2024	23:00	0.4	112.5	10/7/2024	23:00	0.4	225	11/7/2024	23:00	0.9	180	12/7/2024	23:00	1.3	157.5

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
13/7/2024	0:00	0.9	135	14/7/2024	0:00	0.4	247.5	15/7/2024	0:00	2.7	292.5	16/7/2024	0:00	1.3	247.5
13/7/2024	1:00	1.8	112.5	14/7/2024	1:00	0.9	247.5	15/7/2024	1:00	2.7	67.5	16/7/2024	1:00	0.9	225
13/7/2024	2:00	0.9	112.5	14/7/2024	2:00	0.9	67.5	15/7/2024	2:00	1.8	90	16/7/2024	2:00	2.7	225
13/7/2024	3:00	1.8	90	14/7/2024	3:00	0.9	247.5	15/7/2024	3:00	2.2	157.5	16/7/2024	3:00	1.3	247.5
13/7/2024	4:00	1.3	135	14/7/2024	4:00	1.3	225	15/7/2024	4:00	2.7	112.5	16/7/2024	4:00	1.8	225
13/7/2024	5:00	1.3	135	14/7/2024	5:00	0.9	90	15/7/2024	5:00	2.7	67.5	16/7/2024	5:00	1.3	247.5
13/7/2024	6:00	0.9	135	14/7/2024	6:00	1.3	157.5	15/7/2024	6:00	2.7	135	16/7/2024	6:00	1.3	112.5
13/7/2024	7:00	1.3	337.5	14/7/2024	7:00	0.9	112.5	15/7/2024	7:00	2.7	135	16/7/2024	7:00	0.9	112.5
13/7/2024	8:00	0.4	90	14/7/2024	8:00	1.3	135	15/7/2024	8:00	2.7	67.5	16/7/2024	8:00	1.3	45
13/7/2024	9:00	1.8	292.5	14/7/2024	9:00	2.7	135	15/7/2024	9:00	1.8	90	16/7/2024	9:00	0.9	135
13/7/2024	10:00	1.3	112.5	14/7/2024	10:00	1.8	225	15/7/2024	10:00	2.2	157.5	16/7/2024	10:00	2.7	112.5
13/7/2024	11:00	0.9	112.5	14/7/2024	11:00	1.3	90	15/7/2024	11:00	2.7	112.5	16/7/2024	11:00	1.3	90
13/7/2024	12:00	0.4	112.5	14/7/2024	12:00	1.3	157.5	15/7/2024	12:00	2.7	67.5	16/7/2024	12:00	0.9	112.5
13/7/2024	13:00	1.3	112.5	14/7/2024	13:00	1.3	112.5	15/7/2024	13:00	2.7	135	16/7/2024	13:00	0.9	112.5
13/7/2024	14:00	1.3	45	14/7/2024	14:00	1.3	135	15/7/2024	14:00	3.1	157.5	16/7/2024	14:00	0.4	112.5
13/7/2024	15:00	1.3	45	14/7/2024	15:00	1.3	135	15/7/2024	15:00	2.2	157.5	16/7/2024	15:00	1.3	90
13/7/2024	16:00	0.9	45	14/7/2024	16:00	1.8	67.5	15/7/2024	16:00	1.8	112.5	16/7/2024	16:00	1.3	90
13/7/2024	17:00	1.3	22.5	14/7/2024	17:00	0.4	45	15/7/2024	17:00	1.8	112.5	16/7/2024	17:00	0.9	90
13/7/2024	18:00	1.3	45	14/7/2024	18:00	0.4	337.5	15/7/2024	18:00	0.9	112.5	16/7/2024	18:00	0.4	112.5
13/7/2024	19:00	1.3	45	14/7/2024	19:00	0.4	67.5	15/7/2024	19:00	1.3	180	16/7/2024	19:00	0.9	135
13/7/2024	20:00	1.3	270	14/7/2024	20:00	0.4	45	15/7/2024	20:00	1.3	112.5	16/7/2024	20:00	0.9	67.5
13/7/2024	21:00	0.9	22.5	14/7/2024	21:00	0.4	112.5	15/7/2024	21:00	0.9	90	16/7/2024	21:00	0.9	45
13/7/2024	22:00	0.4	45	14/7/2024	22:00	0.4	112.5	15/7/2024	22:00	1.3	135	16/7/2024	22:00	1.3	135
13/7/2024	23:00	0.4	45	14/7/2024	23:00	0.4	112.5	15/7/2024	23:00	0.9	90	16/7/2024	23:00	1.3	247.5

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
17/7/2024	0:00	0.4	90	18/7/2024	0:00	1.3	112.5	19/7/2024	0:00	0.4	90	20/7/2024	0:00	0.9	135
17/7/2024	1:00	0.9	90	18/7/2024	1:00	1.8	67.5	19/7/2024	1:00	0.4	112.5	20/7/2024	1:00	0.9	247.5
17/7/2024	2:00	0.4	45	18/7/2024	2:00	1.3	292.5	19/7/2024	2:00	0.4	90	20/7/2024	2:00	0.9	112.5
17/7/2024	3:00	0.4	0	18/7/2024	3:00	1.3	112.5	19/7/2024	3:00	0.9	45	20/7/2024	3:00	0.4	112.5
17/7/2024	4:00	0.9	247.5	18/7/2024	4:00	1.8	135	19/7/2024	4:00	0.9	45	20/7/2024	4:00	0.4	67.5
17/7/2024	5:00	0.9	112.5	18/7/2024	5:00	1.8	112.5	19/7/2024	5:00	0.4	292.5	20/7/2024	5:00	0.4	112.5
17/7/2024	6:00	0.9	90	18/7/2024	6:00	1.3	135	19/7/2024	6:00	0.4	22.5	20/7/2024	6:00	1.3	90
17/7/2024	7:00	0.4	45	18/7/2024	7:00	1.3	45	19/7/2024	7:00	0.4	315	20/7/2024	7:00	0.9	45
17/7/2024	8:00	0.4	0	18/7/2024	8:00	1.8	337.5	19/7/2024	8:00	0.4	337.5	20/7/2024	8:00	0.4	45
17/7/2024	9:00	0.9	247.5	18/7/2024	9:00	0.9	247.5	19/7/2024	9:00	0.4	315	20/7/2024	9:00	0.4	112.5
17/7/2024	10:00	0.9	112.5	18/7/2024	10:00	0.9	112.5	19/7/2024	10:00	0.9	67.5	20/7/2024	10:00	1.3	90
17/7/2024	11:00	0.4	112.5	18/7/2024	11:00	0.9	112.5	19/7/2024	11:00	0.9	135	20/7/2024	11:00	0.9	45
17/7/2024	12:00	0.4	112.5	18/7/2024	12:00	0.9	135	19/7/2024	12:00	0.4	45	20/7/2024	12:00	0.4	45
17/7/2024	13:00	0.9	135	18/7/2024	13:00	1.8	135	19/7/2024	13:00	0.4	337.5	20/7/2024	13:00	0.4	292.5
17/7/2024	14:00	0.4	112.5	18/7/2024	14:00	1.3	135	19/7/2024	14:00	0.4	135	20/7/2024	14:00	0.9	22.5
17/7/2024	15:00	0.9	90	18/7/2024	15:00	0.9	135	19/7/2024	15:00	0.4	135	20/7/2024	15:00	1.3	315
17/7/2024	16:00	0.4	135	18/7/2024	16:00	1.8	337.5	19/7/2024	16:00	0.4	135	20/7/2024	16:00	1.8	337.5
17/7/2024	17:00	0.9	135	18/7/2024	17:00	0.9	247.5	19/7/2024	17:00	0.9	112.5	20/7/2024	17:00	1.3	315
17/7/2024	18:00	1.3	112.5	18/7/2024	18:00	0.9	112.5	19/7/2024	18:00	1.3	135	20/7/2024	18:00	1.3	67.5
17/7/2024	19:00	0.4	135	18/7/2024	19:00	0.9	112.5	19/7/2024	19:00	0.4	67.5	20/7/2024	19:00	0.9	135
17/7/2024	20:00	1.3	67.5	18/7/2024	20:00	0.9	135	19/7/2024	20:00	1.3	45	20/7/2024	20:00	0.4	45
17/7/2024	21:00	1.3	90	18/7/2024	21:00	0.4	90	19/7/2024	21:00	0.9	135	20/7/2024	21:00	0.9	337.5
17/7/2024	22:00	0.4	112.5	18/7/2024	22:00	1.3	45	19/7/2024	22:00	1.3	90	20/7/2024	22:00	0.4	135
17/7/2024	23:00	0.4	270	18/7/2024	23:00	0.4	247.5	19/7/2024	23:00	0.9	90	20/7/2024	23:00	0.9	22.5

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
21/7/2024	0:00	1.3	112.5	22/7/2024	0:00	0.4	225	23/7/2024	0:00	0.4	315	24/7/2024	0:00	0.9	90
21/7/2024	1:00	1.3	67.5	22/7/2024	1:00	1.3	135	23/7/2024	1:00	1.3	292.5	24/7/2024	1:00	0.9	112.5
21/7/2024	2:00	1.8	112.5	22/7/2024	2:00	1.8	202.5	23/7/2024	2:00	1.3	135	24/7/2024	2:00	0.9	112.5
21/7/2024	3:00	0.9	90	22/7/2024	3:00	1.3	112.5	23/7/2024	3:00	1.3	45	24/7/2024	3:00	0.9	135
21/7/2024	4:00	1.3	90	22/7/2024	4:00	1.3	90	23/7/2024	4:00	1.8	202.5	24/7/2024	4:00	1.8	90
21/7/2024	5:00	1.3	90	22/7/2024	5:00	1.3	112.5	23/7/2024	5:00	1.8	135	24/7/2024	5:00	1.3	112.5
21/7/2024	6:00	1.8	112.5	22/7/2024	6:00	1.8	45	23/7/2024	6:00	1.3	112.5	24/7/2024	6:00	0.9	112.5
21/7/2024	7:00	1.8	112.5	22/7/2024	7:00	0.4	67.5	23/7/2024	7:00	1.3	45	24/7/2024	7:00	1.3	112.5
21/7/2024	8:00	0.9	112.5	22/7/2024	8:00	0.4	67.5	23/7/2024	8:00	1.3	135	24/7/2024	8:00	1.8	90
21/7/2024	9:00	1.8	45	22/7/2024	9:00	1.3	90	23/7/2024	9:00	1.3	180	24/7/2024	9:00	1.3	90
21/7/2024	10:00	1.8	22.5	22/7/2024	10:00	1.8	135	23/7/2024	10:00	2.2	45	24/7/2024	10:00	1.3	90
21/7/2024	11:00	0.9	292.5	22/7/2024	11:00	1.3	90	23/7/2024	11:00	1.3	337.5	24/7/2024	11:00	0.9	67.5
21/7/2024	12:00	0.9	67.5	22/7/2024	12:00	1.3	135	23/7/2024	12:00	1.3	202.5	24/7/2024	12:00	1.3	112.5
21/7/2024	13:00	1.3	292.5	22/7/2024	13:00	1.3	90	23/7/2024	13:00	1.3	112.5	24/7/2024	13:00	1.3	22.5
21/7/2024	14:00	1.8	112.5	22/7/2024	14:00	1.8	90	23/7/2024	14:00	0.9	112.5	24/7/2024	14:00	1.3	270
21/7/2024	15:00	1.8	135	22/7/2024	15:00	1.8	292.5	23/7/2024	15:00	1.8	112.5	24/7/2024	15:00	0.9	0
21/7/2024	16:00	0.9	135	22/7/2024	16:00	1.3	112.5	23/7/2024	16:00	1.8	112.5	24/7/2024	16:00	0.9	270
21/7/2024	17:00	0.9	292.5	22/7/2024	17:00	1.3	67.5	23/7/2024	17:00	0.9	112.5	24/7/2024	17:00	0.4	337.5
21/7/2024	18:00	0.9	67.5	22/7/2024	18:00	1.3	90	23/7/2024	18:00	0.9	112.5	24/7/2024	18:00	0.9	112.5
21/7/2024	19:00	1.3	292.5	22/7/2024	19:00	1.3	67.5	23/7/2024	19:00	1.3	90	24/7/2024	19:00	0.9	112.5
21/7/2024	20:00	0.9	112.5	22/7/2024	20:00	2.2	112.5	23/7/2024	20:00	1.8	22.5	24/7/2024	20:00	0.9	135
21/7/2024	21:00	0.9	135	22/7/2024	21:00	1.3	90	23/7/2024	21:00	1.8	90	24/7/2024	21:00	0	247.5
21/7/2024	22:00	0.4	135	22/7/2024	22:00	1.3	112.5	23/7/2024	22:00	0.9	112.5	24/7/2024	22:00	0.4	225
21/7/2024	23:00	0.9	135	22/7/2024	23:00	1.3	112.5	23/7/2024	23:00	0.9	225	24/7/2024	23:00	0.4	180

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
25/7/2024	0:00	0.4	45	26/7/2024	0:00	1.8	67.5	27/7/2024	0:00	0.4	22.5	28/7/2024	0:00	0.9	45
25/7/2024	1:00	0.9	22.5	26/7/2024	1:00	1.8	45	27/7/2024	1:00	1.3	22.5	28/7/2024	1:00	0.4	90
25/7/2024	2:00	0.9	90	26/7/2024	2:00	1.3	112.5	27/7/2024	2:00	1.3	180	28/7/2024	2:00	0.4	112.5
25/7/2024	3:00	0.9	292.5	26/7/2024	3:00	0.9	90	27/7/2024	3:00	0.9	90	28/7/2024	3:00	0.9	112.5
25/7/2024	4:00	0.4	292.5	26/7/2024	4:00	0.9	247.5	27/7/2024	4:00	0.4	22.5	28/7/2024	4:00	0.4	112.5
25/7/2024	5:00	0.4	292.5	26/7/2024	5:00	0.9	247.5	27/7/2024	5:00	0.9	90	28/7/2024	5:00	1.3	90
25/7/2024	6:00	0.9	22.5	26/7/2024	6:00	0.4	247.5	27/7/2024	6:00	1.8	112.5	28/7/2024	6:00	0.9	45
25/7/2024	7:00	0.4	22.5	26/7/2024	7:00	1.3	247.5	27/7/2024	7:00	1.3	67.5	28/7/2024	7:00	0.4	22.5
25/7/2024	8:00	1.3	45	26/7/2024	8:00	0.4	247.5	27/7/2024	8:00	0.9	45	28/7/2024	8:00	1.3	22.5
25/7/2024	9:00	0.9	22.5	26/7/2024	9:00	1.3	112.5	27/7/2024	9:00	1.3	45	28/7/2024	9:00	1.3	180
25/7/2024	10:00	0.4	22.5	26/7/2024	10:00	0.9	112.5	27/7/2024	10:00	1.3	67.5	28/7/2024	10:00	0.9	90
25/7/2024	11:00	1.3	22.5	26/7/2024	11:00	0.9	112.5	27/7/2024	11:00	1.8	67.5	28/7/2024	11:00	0.4	22.5
25/7/2024	12:00	1.3	180	26/7/2024	12:00	0.9	135	27/7/2024	12:00	1.8	45	28/7/2024	12:00	0.9	90
25/7/2024	13:00	0.9	90	26/7/2024	13:00	0.9	45	27/7/2024	13:00	1.3	112.5	28/7/2024	13:00	1.8	112.5
25/7/2024	14:00	0.4	22.5	26/7/2024	14:00	0.4	45	27/7/2024	14:00	0.9	90	28/7/2024	14:00	1.3	67.5
25/7/2024	15:00	0.9	90	26/7/2024	15:00	0.9	67.5	27/7/2024	15:00	0.9	247.5	28/7/2024	15:00	0.9	45
25/7/2024	16:00	1.8	112.5	26/7/2024	16:00	0.9	90	27/7/2024	16:00	0.9	247.5	28/7/2024	16:00	1.3	45
25/7/2024	17:00	1.3	67.5	26/7/2024	17:00	0.4	247.5	27/7/2024	17:00	0.4	247.5	28/7/2024	17:00	0.9	90
25/7/2024	18:00	0.9	45	26/7/2024	18:00	0.4	135	27/7/2024	18:00	1.3	247.5	28/7/2024	18:00	0.9	112.5
25/7/2024	19:00	1.3	45	26/7/2024	19:00	0.9	112.5	27/7/2024	19:00	0.4	247.5	28/7/2024	19:00	0.9	112.5
25/7/2024	20:00	1.3	67.5	26/7/2024	20:00	0.4	22.5	27/7/2024	20:00	1.3	112.5	28/7/2024	20:00	0.9	112.5
25/7/2024	21:00	0.4	135	26/7/2024	21:00	1.3	135	27/7/2024	21:00	0.9	225	28/7/2024	21:00	0.4	90
25/7/2024	22:00	0.4	157.5	26/7/2024	22:00	0.9	45	27/7/2024	22:00	0.4	225	28/7/2024	22:00	0.9	45
25/7/2024	23:00	0.4	157.5	26/7/2024	23:00	0.9	22.5	27/7/2024	23:00	0.4	225	28/7/2024	23:00	0.9	45

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
29/7/2024	0:00	1.8	90	30/7/2024	0:00	0.4	247.5	31/7/2024	0:00	0.4	157.5				
29/7/2024	1:00	1.8	135	30/7/2024	1:00	0.4	90	31/7/2024	1:00	0.4	67.5				
29/7/2024	2:00	0.4	135	30/7/2024	2:00	0.4	22.5	31/7/2024	2:00	0.4	22.5				
29/7/2024	3:00	0.9	112.5	30/7/2024	3:00	0.4	112.5	31/7/2024	3:00	0.4	225				
29/7/2024	4:00	0.4	135	30/7/2024	4:00	0.9	112.5	31/7/2024	4:00	0.9	315				
29/7/2024	5:00	0.4	45	30/7/2024	5:00	0.9	112.5	31/7/2024	5:00	0.9	337.5				
29/7/2024	6:00	0.4	22.5	30/7/2024	6:00	0.4	112.5	31/7/2024	6:00	0.4	67.5				
29/7/2024	7:00	0.9	135	30/7/2024	7:00	0.4	112.5	31/7/2024	7:00	0.4	112.5				
29/7/2024	8:00	0.4	157.5	30/7/2024	8:00	0.9	135	31/7/2024	8:00	0.4	135				
29/7/2024	9:00	0.9	157.5	30/7/2024	9:00	0.4	67.5	31/7/2024	9:00	0.9	45				
29/7/2024	10:00	0.9	112.5	30/7/2024	10:00	0.4	112.5	31/7/2024	10:00	0.4	22.5				
29/7/2024	11:00	0.9	337.5	30/7/2024	11:00	0.4	135	31/7/2024	11:00	0.9	135				
29/7/2024	12:00	1.3	112.5	30/7/2024	12:00	0.9	45	31/7/2024	12:00	0.9	157.5				
29/7/2024	13:00	0.9	135	30/7/2024	13:00	0.4	22.5	31/7/2024	13:00	0.4	90				
29/7/2024	14:00	0.4	45	30/7/2024	14:00	0.9	135	31/7/2024	14:00	0.4	22.5				
29/7/2024	15:00	0.4	22.5	30/7/2024	15:00	0.9	157.5	31/7/2024	15:00	0.4	112.5				
29/7/2024	16:00	0.4	135	30/7/2024	16:00	0.9	157.5	31/7/2024	16:00	0.9	112.5				
29/7/2024	17:00	1.3	157.5	30/7/2024	17:00	1.3	112.5	31/7/2024	17:00	0.9	112.5				
29/7/2024	18:00	1.3	157.5	30/7/2024	18:00	0.9	337.5	31/7/2024	18:00	0.4	112.5				
29/7/2024	19:00	0.9	112.5	30/7/2024	19:00	0.4	337.5	31/7/2024	19:00	0.4	112.5				
29/7/2024	20:00	0.9	337.5	30/7/2024	20:00	0.4	337.5	31/7/2024	20:00	0.9	135				
29/7/2024	21:00	0.4	337.5	30/7/2024	21:00	0.4	337.5	31/7/2024	21:00	0.4	337.5				
29/7/2024	22:00	0.9	337.5	30/7/2024	22:00	0.4	135	31/7/2024	22:00	0.4	135				
29/7/2024	23:00	0.4	135	30/7/2024	23:00	0.9	337.5	31/7/2024	23:00	0.9	337.5				

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	Filter we	eight (g)	Particulate	Elapse	e Time	Sampling Time	Flow (cf		Av. Flow	Total vol.	Conc.
		(℃)	(hPa)	Initial	Final	weight (g)	Initial	Final	(min)	Initial	Final	(m³/min)	(m^3)	$(\mu g/m^3)$
5/7/2024	Sunny	33.1	1008.8	18.2873	18.3467	0.0594	2024/7/5 9:15	2024/7/6 9:15	1440	50	50	1.33	1919	31
11/7/2024	Cloudy	33.8	1006.8	18.0894	18.1444	0.0550	2024/7/11 9:10	2024/7/12 9:10	1440	50	50	1.33	1915	29
17/7/2024	Cloudy	32.6	1008.9	14.8612	14.9269	0.0657	2024/7/17 13:10	2024/7/18 13:10	1440	50	50	1.33	1921	34
23/7/2024	Sunny	35.2	1001.6	15.1948	15.2365	0.0417	2024/7/23 13:20	2024/7/24 13:20	1440	52	52	1.38	1982	21
29/7/2024	Cloudy	28.9	1006.1	18.4093	18.4391	0.0298	2024/7/29 9:10	2024/7/30 9:10	1440	52	52	1.39	2007	15

Maximum	34
Minimum	15
Average	26
Action Level	175
Limit Level	260

Location: AM3 – Sky Tower

Start Date	Weather	Air Temp.	Atmospheric Pressure	Filter we	eight (g)	Particulate	Elapse	Time	Sampling Time	Flow (cf		Av. Flow	Total vol.	Conc.
		(℃)	(hPa)	Initial	Final	weight (g)	Initial	Final	(min)	Initial	Final	(m ³ /min)	(m^3)	$(\mu g/m^3)$
5/7/2024	Sunny	33.1	1008.8	15.1076	15.2187	0.1111	2024/7/5 9:31	2024/7/6 9:31	1440	46	46	1.26	1810	61
11/7/2024	Cloudy	33.8	1006.8	15.1351	15.2824	0.1473	2024/7/11 13:26	2024/7/12 13:26	1440	48	48	1.31	1885	78
17/7/2024	Cloudy	32.6	1008.9	15.1922	15.2907	0.0985	2024/7/17 9:33	2024/7/18 9:33	1440	46	46	1.26	1811	54
23/7/2024	Sunny	35.2	1001.6	18.2391	18.3268	0.0877	2024/7/23 9:34	2024/7/24 9:34	1440	46	46	1.25	1797	49
29/7/2024	Cloudy	28.9	1006.1	17.8232	17.8809	0.0577	2024/7/29 13:25	2024/7/30 13:25	1440	46	46	1.26	1820	32
												Maxii	num	78
												Minir	num	32

55

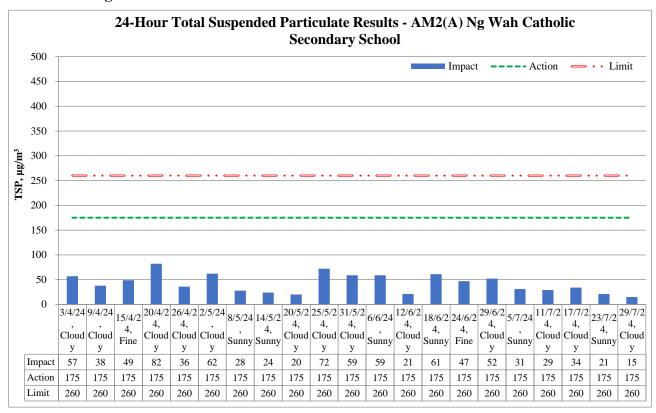
172

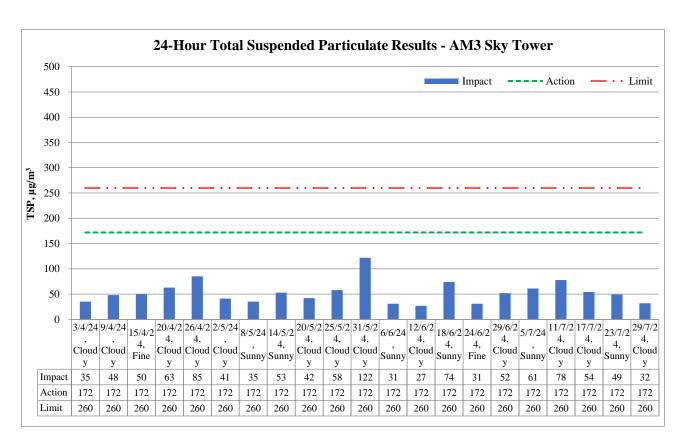
260

Average

Action Level Limit Level

24-hour average TSP





		Reportin	g Period	
Major Construction Activities	Apr	May	Jun	Jul
	2024	2024	2024	2024
Backfilling works at Launching Shaft Zone B of Subway SB-01	✓			
Construction works for DCS Chamber 2A10 and pipe laying	✓			
Construction works for DCS 2A5B, 2A10 and 2A5A		✓		
Construction works for DCS 2A5B, 2A10, 2A5A and 2A4			✓	
Construction works for DCS Chamber 2A5A, 2A4 and pipe laying				✓
Construction of Retaining Wall Type 1 for S14	✓			
Construction of LW02 structural steel roof	✓	✓	✓	✓
Construction of Parapet for S14	✓	✓	✓	✓
Construction of Bridge Deck for S14	✓			
Construction of bridge deck of S14 and portal for K73 Bridge		✓	✓	
Construction of bridge deck of S14				✓
Construction of headwall at Subway SB01 Retrieval Shaft	✓			✓
Construction of Lift Shaft for Subway SB-01				✓
Glazing installation for KS10 Lift			✓	✓
Louvre installation for KS10 lift			✓	✓
Dismantling Falsework and Portal Frame at LW-02	✓	✓		
Dismantle of temporary steel decking across Kai Tak River at LW02			✓	✓
Drainage construction and backfilling works for retaining wall of S14	✓	✓	✓	✓
Drainage construction works at PS2 and PS4	✓	✓	✓	✓
Toe grouting of sheet piles of additional staircase at SB01	✓			
Installation of glass bracket of Lift at LW02		✓		
Installation of glass bracket of Lift at LW02 and glass panels			✓	✓
Construction of Public Lighting at LW02		✓	✓	✓
SPR Retrieval Shaft Headwall RC construction		✓	✓	
RC construction works for lift and staircase of LW-02	✓	✓		
RC Construction for Kerb of Elevated Walkway LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase	✓	✓	✓	✓
Renovation works for existing subways KS10	✓	✓	✓	✓
Road and Drain Construction works for Road L16, Commercial Street and Road D1	✓	✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

		Reporting Period				
Factors might affect the monitoring results	Apr 2024	May 2024	Jun 2024	Jul 2024		
Non-project related construction activities in the adjacent construction sites were observed.	✓	√	✓	✓		

Appendix H – 1-hr TSP monitoring results and graphical p	oresentation

Location:

AM2(A)
Ng Wah Catholic

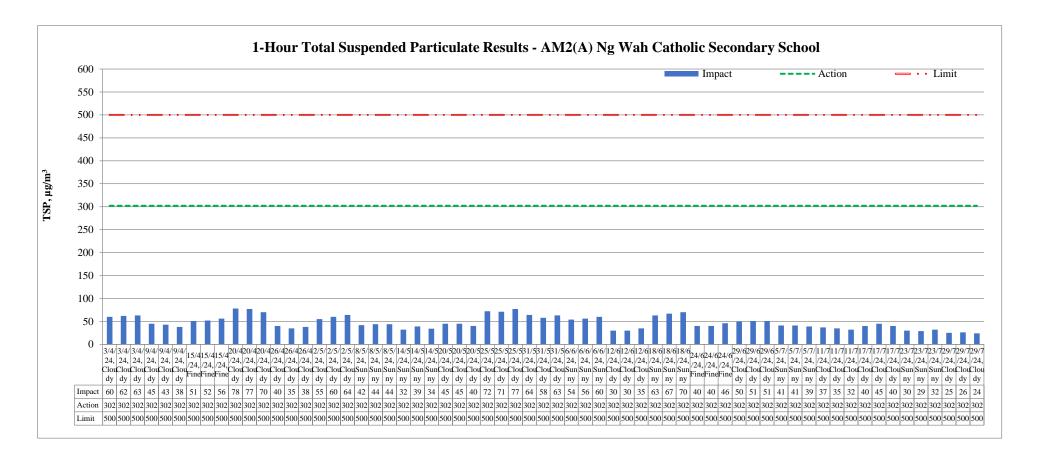
Secondary School

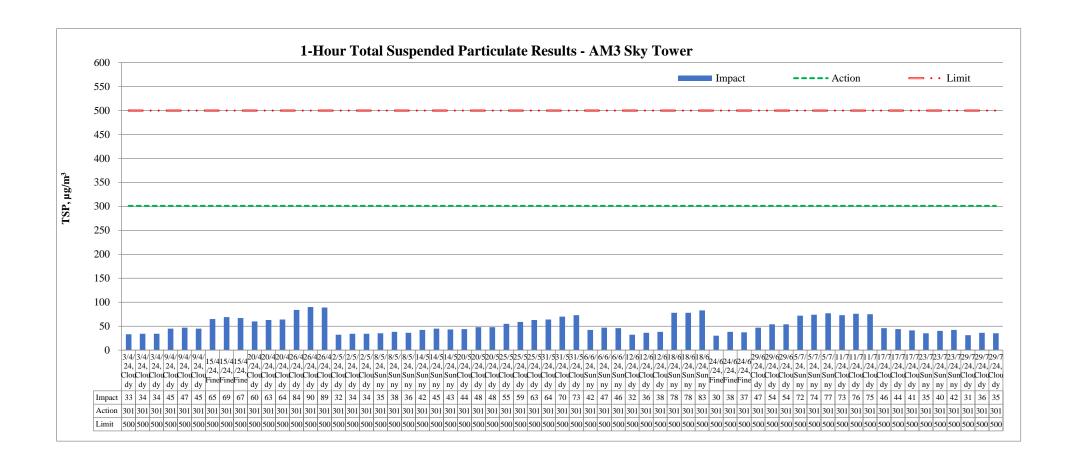
Date	Measure	emei	nt Period	1-hr TSP concentration, μg/m ³	Weather
	9:00	-	10:00	41	
5/7/2024	10:00	-	11:00	41	Sunny
	11:00	-	12:00	39	
	9:00	-	10:00	37	
11/7/2024	10:00	-	11:00	35	Cloudy
	11:00	-	12:00	32	
	13:00	-	14:00	40	
17/7/2024	14:00	-	15:00	45	Cloudy
	15:00	-	16:00	40	
	13:00	-	14:00	30	
23/7/2024	14:00	-	15:00	29	Sunny
	15:00	-	16:00	32	
	9:00	-	10:00	25	
29/7/2024	10:00	-	11:00	26	Cloudy
	11:00	-	12:00	24	
Maximum		45			
Minimum		24			
	Average		34		
	Action Level		302		
Li	mit Level			500	

Location:
AM3 Sky Tower

Date	Measure	eme	nt Period	1-hr TSP concentration, μg/m ³	Weather
	9:00	-	10:00	72	
5/7/2024	10:00	-	11:00	74	Sunny
	11:00	-	12:00	77	
	13:00	-	14:00	73	
11/7/2024	14:00	-	15:00	76	Cloudy
	15:00	-	16:00	75	
	9:00	-	10:00	46	
17/7/2024	10:00	-	11:00	44	Cloudy
	11:00	-	12:00	41	
	9:00	-	10:00	35	
23/7/2024	10:00	-	11:00	40	Sunny
	11:00	-	12:00	42	
	13:00	-	14:00	31	
29/7/2024	14:00	-	15:00	36	Cloudy
	15:00	-	16:00	35	
1	Maximum		77		
Minimum		31			
	Average		53		
	ction Leve			301	
L	imit Leve	1		500	

1-hour average TSP





Major Construction Activities		Reporting Period				
		May	Jun	Jul		
	2024	2024	2024	2024		
Backfilling works at Launching Shaft Zone B of Subway SB-01	✓					
Construction works for DCS Chamber 2A10 and pipe laying	✓					
Construction works for DCS 2A5B, 2A10 and 2A5A		✓				
Construction works for DCS 2A5B, 2A10, 2A5A and 2A4			✓			
Construction works for DCS Chamber 2A5A, 2A4 and pipe laying				✓		
Construction of Retaining Wall Type 1 for S14	✓					
Construction of LW02 structural steel roof	✓	✓	✓	✓		
Construction of Parapet for S14	✓	✓	✓	✓		
Construction of Bridge Deck for S14	✓					
Construction of bridge deck of S14 and portal for K73 Bridge		✓	✓			
Construction of bridge deck of S14				✓		
Construction of headwall at Subway SB01 Retrieval Shaft	✓			✓		
Construction of Lift Shaft for Subway SB-01				✓		
Glazing installation for KS10 Lift			✓	✓		
Louvre installation for KS10 lift			✓	✓		
Dismantling Falsework and Portal Frame at LW-02	✓	✓				
Dismantle of temporary steel decking across Kai Tak River at LW02			✓	✓		
Drainage construction and backfilling works for retaining wall of S14	✓	✓	✓	✓		
Drainage construction works at PS2 and PS4	✓	✓	✓	✓		
Toe grouting of sheet piles of additional staircase at SB01	✓					
Installation of glass bracket of Lift at LW02		✓				
Installation of glass bracket of Lift at LW02 and glass panels			✓	✓		
Construction of Public Lighting at LW02		✓	✓	✓		
SPR Retrieval Shaft Headwall RC construction		✓	✓			
RC construction works for lift and staircase of LW-02	✓	✓				
RC Construction for Kerb of Elevated Walkway LW-02	✓	✓	✓	✓		
Renovation works for Subway KS10 Lift and Staircase	✓	✓	✓	✓		
Renovation works for existing subways KS10	✓	✓	✓	✓		
Road and Drain Construction works for Road L16, Commercial Street and	√	√	√			
Road D1	•	v	v	√		
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓		

	Reporting Period				
Factors might affect the monitoring results	Apr 2024	May 2024	Jun 2024	Jul 2024	
Non-project related construction activities in the adjacent construction sites were observed.		✓	✓	√	

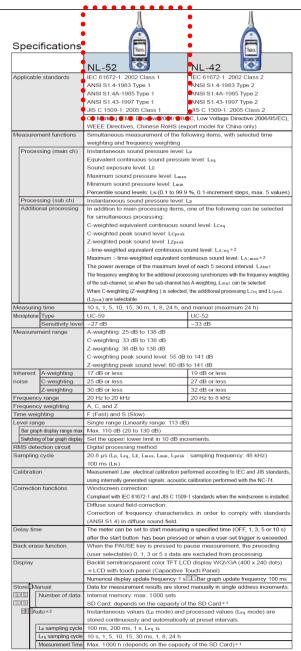
Appendix I – Event and Action Plan for air quality

F 4	Action							
Event	ET	IEC	Supervisor / ER	Contractor				
Action Level being exceeded by one sampling	 Identify source and investigate the causes of exceedance; Inform Contractor, IEC and Supervisor /ER; Repeat measurement to confirm finding. 	 Check monitoring data submitted by ET; Check Contractor's working method. 	1. Notify Contractor.	 Rectify any unacceptable practice; 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	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the Supervisor /ER on the effectiveness of the proposed remedial measures. 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; Supervise implementation of remedial measures; Conduct meeting with ET and IEC if exceedance continues. 	 Discuss with ET and IEC on proper remedial actions; Submit proposals for remedial actions to Supervisor /ER and IEC within three working day of notification; Implement the agreed proposals; Amend proposal if appropriate. 				
Limit Level being exceeded by one sampling	investigate the causes of exceedance; 2. Inform Contractor, IEC, Supervisor /ER, and EPD; 3. Repeat measurement to confirm finding;	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss possible remedial measures with ET and Contractor; Advise the Supervisor /ER 	notification of exceedance in writing; 2. Notify Contractor;	Take immediate action to avoid further exceedance; Discuss with ET and IEC on proper remedial actions; Submit proposal for remedial actions to Supervisor /ER and IEC				

F4		Act	ion	
Event	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	 Notify IEC, Supervisor /ER, Contractor and EPD; Repeat measurement to confirm findings; Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; Increase monitoring frequency to daily; Arrange meeting with IEC, Supervisor /ER and Contractor to discuss the remedial action to be taken; Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results; If exceedance stop, cease 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with Supervisor /ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. 	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;	 Take immediate action to avoid further exceedance; Discuss with ET and IEC on proper remedial actions; Submit proposal for remedial actions to Supervisor /ER and IEC within three working days of notification; Implement the agreed proposals; Submit further remedial actions if problem still not under control; Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.

 $\label{eq:continuous} \begin{tabular}{ll} Appendix \ J-Calibration \ certificates, \ catalogue \ of \ noise \ monitoring \\ equipment \end{tabular}$

Catalogue of Sound Level Meter



Dataı	ecall	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	
Wavef	orm recording *3		
File	e format	Uncompressed waveform WAVE file	
Sar	mpling frequency	Select 48 kHz, 24 kHz or 12 kHz	
Da	ta 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 ∨ (rms values) at bar graph display full scale	
	Comparator	Turns on when the open-collector output exceeds the set value	
	output*2	(max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).	
USBÜ	1.0	Allows USB to be connected to a computer and recognized as a removable dis	
50 50 E	1	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			
Typ	oe of Instantaneous value	Lp	
dat	a Processed value	Leq, Lmax, Lmin, Lpeak	
Ou	tput interval	100 ms	
Print o	out	Printing of measurement results on dedicated printer DPU-414	
Powe	r requirements	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply	
Ba	ttery 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)	
Ex	ternal power voltage	5 to 7 V (rated voltage: 6 V)	
Cu	rrent consumption	Approximately 90 mA (normal operation, rated voltage)	
Ambie	nt Temperature	-10 to +50 °C	
condit	ions Humidity	10 to 90 % RH (non-condensing)	
Dustp	roof / water-resistant	IP code: IP54 (except for microphone)	
performance *4		See precautions regarding waterproofing	
Dimer	nsions, weight	Approx. 250 (H) x 76 (W) x 33 mm(D), approx. 400 g (with batteries)	
Suppl	ied 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)	

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-60∨M
Waveform analysis software	CAT-WAVE
SD Card 512 MB	SD-512M
SD Card 2 GB	SD-2G
AC adapter (100 ∨ to 240 ∨)	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 nubber bottom cover and the battery compartment lid are firmly closed. To maintain the water and dust proof rating, internal packing replacement is required every two years (at cost)

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

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

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 E 212.P.D

RION CO., LTD.

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan Tel: +81-42-359-7888 Fax: +81-42-359-7442

Calibration Certificate of Sound Level Meter



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)

CALIBRATION CERTIFICATE

证书编号: 2HB23001488-0003 Certificate No.



Castco Testing Centre Limited 委托单位: Client Sound Level Meter 仪器名称: Description NL-52 型号规格: Model/Type RION 制造商: Manufacturer 00976204 机身号: Serial No. AAST-SLM-11 管理号: Asset No. 2023-08-07 2023-07-28 校准日期: 接收日期: Rec. Date Cal. Date 12个月(12 months) 2023-08-08 建议校准周期: 签发日期: App. Date Reference Cal. Period 所校准项目符合技术要求(The calibrated items meet the technical requirements)

校准: Calibrated by

答发:

结论:

Conclusion

赵文钰

Approved by

郑术力

印章: Stamp

Inspected by

Website: www.ceprei-cal.com

Page of

赛宝计量检测中心 总部地址:广州市增城区朱村街朱村大道西78号 实验室地址:广州市增城区朱村街朱村大道西78号 客腦电话: 020-87237633 传真: 020-87236189 投诉电话: 020:87236896 邮件: cal@ceprei.com 周址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre HO Addr: No.78.Zhucun Avenue West, Zengcheng District, Guangzhou, China Add, of the Lab: No.78, Zhucun Avenue West, Zengcheng District, Guangzhou, China Service Tel: 020-87237633 Fax: 020-87236189 Complaint Tel: 020-87236896 Email: cal@ceprei.com 第1页,共9页

DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求,获得中国合格评定国家认可委员会(CNAS) 认可, 认可证书号为: CNAS L13344。

This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

2. 本机构出具的数据均可溯源到国际单位制(SI)单位和社会公用计量标准。 The data issued by this laboratory is traceable to International system of Units (SI) and national primary standards.

3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes): * JJG 188-2017 声级计检定规程: Sound pressure level: (20~130)dB; Frequency Weighting: (20~130)dB, (10

HZ~20kHZ)。 · 详细用答请查看CNAS网络中注册编号为L13344的证书辨件,超出范围的内容未被认可,其结果结论所保護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 result/sconclusions are based are outside the scope of accreditation.)

4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration): 证书号/有效期/溯源单位 技术指标

(Description)	(Certificate No./Due Date/Traceability to)	(Specification)	(Measuring Range)
	GFJGJL1001230304187/2024-04-13/航空 304所	U=(0.05~0.20)dB (k=2)	10Hz~20kHz
正弦信号发生器(243165	4GC22000542-0057/2023-10-26/赛宝(广州)	f: ±lmHz; 失真度 Distortion: <-70dB	f: 0.001Hz~200kHz; <i>U</i> : 100µV~5Vrms
	4GC22000429-0039/2023-08-29/賽宝(广州)		10Hz~50kHz
数字多用表(MY5300648 3)	4GC22000447-0003/2023-09-26/賽宝(广州)	0.06%; DCI: ±0.05%; ACI	$\begin{array}{lll} DCV:(0\sim1000)V: & ACV \\ :(0.001\sim750)V@(3Hz\sim\\ 300kHz): & DCI:(0\sim3)A \\ : & ACI:(0\sim3)A@(3Hz\sim\\ 5kHz): & R:(0\sim100)M\Omega\\ : & f:3Hz\sim300kHz \end{array}$
TL 幸 沙 士 吸 (252(212)	4/2/22000600 0003/2023 11 30/寒空(广州)	经家响应, +IdB 牛直疳	20Hz~50kHz

: ≤0.2%
PULSE分析系统(3160-1 4GC23000001-0137/2024-01-03/賽宝(广州) 频率:Uni=0.001%_k-2;电压: 频率:0.001Hz~51.2kHz。

电压:(1×10⁻⁵~30)V 31.5Hz~16kHz

5. 校准地点(The calibration place): 广州市增城区朱村街朱村大道西78号9栋110室

6. 环境条件(Environmental conditions): 温度(Temperature): 25.3℃ 相对湿度(Relative Humidity): 65%

7. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定,由合成标 准不确定度乘以包含概率约为95%时对应的包含因子k得到。

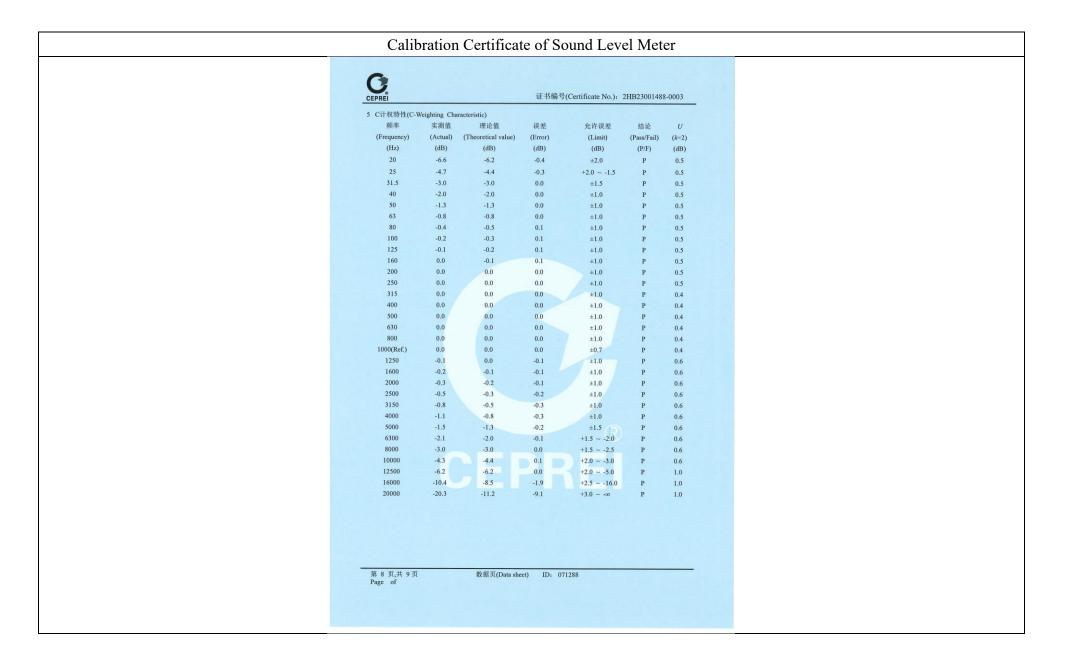
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.

8. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考,使用人员应 结合实际测量的要求合理使用,如考虑测量结果测量不确定度的影响等。

"P" and "Pass" in this certificate stand for "Low Limit the measured value 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.

> 第3页,共9页 Page of

Calibration Certificate of Sound Level Meter CEPREI 证书编号(Certificate No.): 2HB23001488-0003 证书编号(Certificate No.): 2HB23001488-0003 3.2 其它级量程 (Other Range) 频率(Frequency): 1000Hz 1 外观与工作正常性检查 (Appearance and Function Check) 标准声级 指示声级 误差 允许误差 无影响证书中测量结果准确度的因素和缺陷。 (Standard) (Indication) (Error) (Limit) (Pass/Fail) (k=2)There are no factor and defect that affect the measurement result accuracy of the certificate. (dB) (dB) (dB) (dB) (P/F) (dB) 130.0 129.9 -0.1 ±0.8 0.3 频率(Frequency)=1000Hz 2 指示声级调整 (Indication SPL Calibration) 129.0 128 9 -0.1 ±0.8 0.3 放大器编号 传声器型号 传声器编号 放大器型号 128.0 127.9 -0.1 ±0.8 0.3 (Preamplifier Type) (Preamplifier SN.) (Microphone Type) (Microphone SN.) 127.0 -0.1 0.3 ±0.8 126.0 125.9 -0.1 ±0.8 0.3 125.0 124.9 -0.1 ±0.8 0.3 标准声压级 校准后示值 U校准前示值 声校准器型号 120.0 120.0 0.0 0.3 ±0.8 (Before Calibration) (After Calibration) (k=2)(Calibrator Type) (Reference SPL) 110.0 110.0 0.0 ±0.8 0.3 (dB) (dB) (dB) 100.0 100.0 0.0 ±0.8 0.3 4226 94.0 93.8 93.8 0.2 90.0 90.0 0.0 ±0.8 0.3 80.0 80.0 0.0 +0.8 0.3 3 级线性 (Level Linearity) 70.0 70.0 0.0 ±0.8 0.3 频率(Frequency): 8000Hz 3.1 参考级量程 (Reference Range) 60.0 60.0 0.0 ±0.8 0.3 允许误差 标准声级 指示声级 误差 结论 50.0 50.0 0.0 ±0.8 0.3 (Limit) (Pass/Fail) (k=2)(Indication) (Error) (Standard) 40.0 0.0 ±0.8 0.3 (dB) (dB) (dB) (dB) (dB) (P/F) 35.0 34.9 -0.1 0.3 ±0.8 129.8 -0.2 ±0.8 0.3 130.0 34.0 33.9 -0.1 0.3 ±0.8 ±0.8 0.3 128.8 -0.2 129.0 33.0 32.9 -0.1 ±0.8 0.3 128.0 -0.2 ±0.8 0.3 32.0 31.9 -0.1 ±0.8 0.3 126.8 -0.2 ±0.8 127.0 31.0 30.9 -0.1 ±0.8 0.3 125.9 -0.1 ±0.8 0.3 126.0 30.0 -0.1 29.9 ±0.8 0.3 -0.1 +0.8 0.3 124.9 125.0 0.3 120.0 119.9 -0.1 ±0.8 ±0.8 0.3 110.0 110.0 0.0 100.0 100.0 0.0 ±0.8 0.3 90.0 0.0 ±0.8 0.3 90.0 -0.1 ±0.8 0.3 80.0 79.9 0.3 ± 0.8 70.0 69.9 -0.1 0.3 60.0 60.0 ±0.8 50.0 49.9 -0.1 ±0.8 0.3 39.9 -0.1 ±0.8 0.3 40.0 0.3 ±0.8 35.0 34.8 -0.2 0.3 ±0.8 34.0 33.8 -0.2 0.3 33.0 32.9 -0.1 ±0.8 32.0 31.8 -0.2 ±0.8 0.3 ±0.8 0.3 30.8 -0.2 31.0 0.3 29.8 -0.2 ±0.8 30.0 第 6 页,共 9 页 Page of 数据页(Data sheet) ID: 071288 数据页(Data sheet) ID: 071288 第 5 页,共 9 页 Page of



Catalogue of Sound Calibrator

For microphone calibration NC-74

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



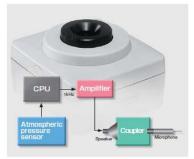
The performance of the NC-74 is suitable for calibration of high-precision sound level meters. The unit is compact, lightweight, and easy to use. Two IEC LR6 (size AA) alkaline batteries will power the unit for more than 30 hours of continuous use at room temperature.

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.



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.



Applicable standards	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 LSZaP UC-99 UC-99 UC-93A UC-92 UC-26 UC-30 UC-31 UC-31	
Nominal sound pressure level	94 dB	*	
Sound pressure level tolerance	±0.3 dB		
Nominal frequency	1 kHz		
Frequency tolerance	±1.0 % or less	The service of the se	
Power requirements	IEC LR6 (size AA) alkal	Ine battery × 2	
Dimensions, mass	Approx. 49 (H) × 80 (W) × 74 (D) mm Approx. 200 g (including balteries)		
Supplied accessories	Case X 1 IEC LR6 (size AA) alkaline battery X 2 1/2-inch microphone adapter NC-74-002 X 1		

* Specification subject to change without notice.



3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan Tel: +81-42-359-7888 Fax: +81-42-359-7442 http://www.rion.co.jp/english/



Calibration Certificate of Sound Calibrator

AAST-SLC-06 Cal 5 sep 2023



中国赛宝实验室计量检测中心(工业和信息化部电子第五研究所计量检测中心)

CALIBRATION CERTIFICATE

证书编号: 2HB23001715-0001 Certificate No.





Castco Testing Centre Limited 委托单位: Sound Level Calibrator 仪器名称: Description 型号规格: NC-74 Model/Type RION 制造商: Manufacturer 34678556 机身号: Serial No. AAST-SLC-06 管理号: Asset No. 2023-08-23 2023-09-05 接收日期: 校准日期: Cal. Date Rec. Date 2023-09-05 12个月(12 months) 签发日期: 建议校准周期: App. Date Reference Cal. Period 所校准项目符合技术要求(The calibrated items meet the technical requirements) 结论: Conclusion

Calibrated by

签发: Approved by

印章: Stamp

赛宝计量检测中心

总部地址:广州市增城区朱村街朱村大道西78号 实验室地址:广州市增城区朱村街朱村大道西78号 客服电话: 020-87237633 传真: 020-87236189 投诉由话: 020-87236896

邮件: cal@ceprei.com 网址: www.ceprei-cal.com CEPREI Calibration and Testing Centre

Inspected by

HQ Addr: No.78, Zhucun Avenue West, Zengcheng District, Guangzhou, China Add, of the Lab: No.78, Zhucun Avenue West, Zengcheng District, Guangzhou, China Service Tel: 020-87237633 Fax: 020-87236189

Complaint Tel: 020-87236896 Email: cal@ceprei.com Website: www.ceprei-cal.com

第1页共5页 Page of

Calibration Certificate of Sound Calibrator

证书编号(Certificate No.): 2HB23001715-0001

说 明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求,获得中国合格评定国家认可委员会(CNAS)认可,认可证书号为: CNAS L13344。

This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

- 2. 本机构出具的数据均可溯源到国际单位制(SI)单位和社会公用计量标准。 The data issued by this laboratory is traceable to International system of Units (SI) and national primary standards.
- 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):
 JJG 176-2022 声校准器检定规程: Sound Pressure Level: 94dB、104dB、114dB、124dB(63H2~8kHz): 94dB 、104dB、114dB,(31.5Hz~16kHz): Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0.1%~10% (20Hz~20kHz)
- 。 · 採用內容等查查CNAS网站中往前線与为L13344的证书附件,超出范围的內容未被认可,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 result/brouchtsuors are based are outside the scope of accreditation.)
- 4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration): 证书号/有效期/溯源单位 技术指标 测量范围 名 称 (Measuring Range) (Certificate No./Due Date/Traceability to) (Specification) (Description) 前置放大器(2239843) GFJGJL1001230304185/2024-03-22/航空 頻率响应: ±0.1dB (10~50000) Hz 数字多用表(MY4505167 GFJGJL1004230400378/2024-04-02/航天 DCV: ±8×10-6; DCI: ±2× DCV: 10nV~1000V; 10⁵; ACV: ±0.02%,ACI: DCI: 1pA~1A; ACV: ±0.03%,R: ±1×10⁵; f: ± : (10nV~700V) @ 1Hz~2MHz) : ACI: (100pA~1A) @ (10 Ω~1GΩ; F: 1Hz~10 PULSE分析系统(3160-1 4GC23000528-0009/2024-08-16/賽宝(广州) 頻率: Uret=0.001% k=2;电压: 频率:0.001Hz~51.2kHz, vo3-40) 実验室标准传声器(2246 GFJGJL1001230304187/2024-04-13/航空 LS級 20456 电压:(1×10-5~30)V
- 5. 校准地点(The calibration place):
- 广州市增城区朱村街朱村大道西78号9栋110室
- 6. 环境条件(Environmental conditions): 温度(Temperature): 21.2℃ 相对湿度(Relative Humidity): 60%
- 7. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定,由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。

The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 55%.

- 8. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考,使用人员应结合实际测量的要求合理使用,如考虑测量结果测量不确定度的影响等。
- "P" and "Pass" in this certificate stand for "Low Limit'≤the measured value ≤High Limit", "F" and "Fail" stand for "the measured value ≤Low Limit or the measured value ≤Low Limit or the measured value ≤Low Limit or the measured value ≤Now Limit 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 measurement in the confirmed that the confirmed the confirmed that th
- 9. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议,供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

证书编号(Certificate No.): 2HB23001715-0001 1 外观与工作正常性检查 (Appearance and Function Check) 无影响证书中测量结果准确度的因素和缺陷。 There are no factor and defect that affect the measurement result accuracy of the certificate. 2 声压级 (Sound Pressure Level) 规定声压级 测量声压级 声压级差的绝对值 接受關 结论 II (k=2)(Prescribed SPL) (Measured SPL) (Absolute value of SPL) (Limit) (Pass/Fail) (dB) (dB) (dB) (dB) (dB) 0.10 94 93.86 0.14 < 0.25 3 频率 (Frequency) 测量频率 糖率误差的绝对值 接受限 结论 Urel 柳定频率 (Pass/Fail) (k=2)(Prescribed Fre.) (Measured Fre.) (Absolute value of Fre.) (Limit) (%) (Hz) (Hz) (%) (%) 1003.7 0.37 < 0.70 0.10 1000 4 总失真+噪声 (Distortion and noise) 总失真+噪声 Urel 规定声压级 规定频率 接受限 结论 (Prescribed SPL) (Measured Fre.) (Distortion and noise) (Limit) (Pass/Fail) (k=2)(dB) (Hz) (%) (%) (%) 94 1000 0.69 ≤2.50 5.0

数据页(Data sheet) ID: 013393

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Catalogue of Air Flow Meter (TSI TA440)

Time Constant (TA430, TA440)

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

Articulating Probe Dimensions

Four AA-size batteries or AC adapter

TA410

101 6 cm (40 in)

7.0 mm (0.28 in.)

19.7 cm (7.8 in.)

+

+

*- new year-uniter compensation over an air temperature range of \$1 to 65°C, (40 to 150°P).

**The accuracy statement begins at 30 Thresh through 4000 Efforts (10.51 m/s) through 200 m/s) for the Model TA410. and 30 thresh through 50.00 for thresh 6040 TA410. and 30 thresh through 50.00 for the Model TA400 and 13440.

**Accuracy with next unenet case at 25°C (77°P), and surcest tainty of 0.09°C*C (0.65°F)*P) for change in a lost next temperature.

**Accuracy with proble at 25°C (7°P) And surcest basiney of 0.29°C (10.5°P)*P) for change in proble registration brickled by 15°C (7°P). And surcest basiney of 0.29°C (10.5°P)*P) for change in proble registration brickled by 15°C (7°P) And surcest basiney of 0.29°C (10.5°P)*P) for change in proble registration brickled by 15°C (10°P)*P).

+

13.0 mm (0.51 in.)

Meter Probe Dimensions

Probe Diameter of Tip

Articulating Section Length

Power Requirements

Diameter of Articulating Knuckle

Velocity range 0 to 30.00 m/s (0 to 6000 ft/min)

Humidity, wet bulb,

Temperature

dew point

Variable time

constant Manual data logging

Statistics

LogDat2 downloading

software

Flow

Probe

Probe Diameter of Base

User selectable

0.27 kg (0.6 lbs.)

Probe Length

SPECIFICATIONS

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)162

±5% of reading or ±0.025 m/s (±5 ft/min), whichever is greater ±3% of reading or ±0.015 m/s (±3 ft/min), whichever is greater Accuracy (TA430, TA440)160 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)

Actual range is a function of velocity, and duct size Range

Temperature

Range (TA410, TA430) -18 to 93°C (0 to 200°F) -10 to 60°C (14 to 140°F) Range (TA440) ±0.3°C(±0.5°F) Accuracy³ Resolution

Relative Humidity (TA440 only)

5 to 95% RH Range ±3% RH Resolution 0.1% RH

Wet Bulb Temperature (TA440 only)

Range Resolution 0.1°C (0.1°F)

Dew Point (TA440 only)

-15 to 49°C (5 to 120°F) Range Resolution 0.1°C (0.1°F)

Instrument Temperature Range

Operating (Electronics) Model TA410, TA430 Operating (Probe) -18 to 93°C (0 to 200°F) Model TA440 -10 to 60°C (14 to 140°F)

Data Storage Capabilities (TA430, TA440)

12,700+ samples and 100 test IDs

-20 to 60°C (-4 to 140°F)

Logging Interval (TA430, TA440)

Storage



Airflow Instruments, TSI Instruments Ltd.

Visit our website at www.airflowinstruments.co.uk for more information Tel: +44 149 4 459200 Germany Tel: +49 241 523030 Tel: +33 491 11 87 64

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Calibration Certificate of Air Flow Meter



Cal Lab Limited 校正實驗室有限公司

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Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0242312

Information provided by customer

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

Equipment identification provided by custome

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401232005	AAST-FLOW-02

Certificate Information

15 December 2023 Date of Receipt: Date of Calibration: 18 December 2023 Due Date of Calibration: N/A Calibration Procedure: SOP-112

Calibration Condition: Adjustment: Appearance: Remark:

21.3°C, 56%RH, 1014hPa N/A

Good N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Hot Wire Anemometer	9535	T95351316004	11 August 2024

Result of Calibration

Reference Reading (m/s)	Measured Reading (m/s)	Error (m/s)	Uncertainty (%)	Technical Requirement	Technical Reference Doc
0.99	0.99	0.00	3.6	±5%	Mfr's Spec.
2.02	2.03	0.01	3.6	±5%	Mfr's Spec.
5.01	4.98	-0.03	3.6	±5%	Mfr's Spec.
7.96	8.07	0.11	3.6	±5%	Mfr's Spec.

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 25 assured unitsee specificly latestic.

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. 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

Calibrated By: Top

Wing Cheng

Checked and Approved By:

Company Chop:

Warren Yeung

Lower 4e

Certificate Issue Date: 19 December 2023 CT-REG-04

*** End of Certificate ***

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Limited 2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

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Appendix K – Noise monitoring results and graph	ical presentation

M4(A) – Le Billionnaire

_	Temp	Wind	Weathe			Measured	Noise Lev	el at M4(A	A), dB(A)		
Date	(°C)	Speed m/s	r			Time		\mathcal{L}_{Aeq}	L_{A10}	L_{A90}	Limit
5/7/2024	27.9	0.7	Sunny	9:25	-	9:55	69.5	71.8	72.8	70.6	75
11/7/2024	32.7	0.9	Cloudy	9:00	-	9:30	69.5	71.6	72.5	70.8	75
17/7/2024	32.3	0.4	Cloudy	10:10	-	10:40	69.5	71.4	72.3	71.0	75
23/7/2024	29.8	0.4	Sunny	9:20	-	9:50	69.5	71.7	72.7	71.1	75
29/7/2024	32.2	0.3	Cloudy	9:30	-	10:00	69.5	71.7	72.8	70.9	75
				Maximum			71.8				

 Maximum
 71.8

 Minimum
 71.4

 Average
 71.6

M5(A) – Prince Ritz

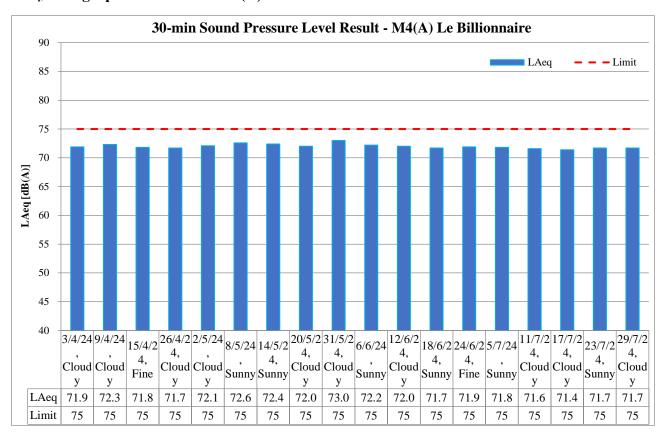
	Temp	Wind	Weathe	Measured Noise Level at M5(A), dB(A)								
Date	(°C)	Speed m/s	r	Time		Baseline	L_{Aeq}	L_{A10}	L_{A90}	Limit		
5/7/2024	27.9	0.9	Sunny	13:00	-	13:30	73.7	75.1	72.0	73.7	75	
11/7/2024	32.7	0.3	Cloudy	11:30	-	12:00	74.0	76.0	72.1	74.0	75	
17/7/2024	32.3	0.7	Cloudy	13:00	-	13:30	73.5	74.9	71.7	73.5	75	
23/7/2024	29.8	0.3	Sunny	11:30	-	12:00	73.4	74.9	72.0	73.4	75	
29/7/2024	32.2	1.1	Cloudy	13:00	-	13:30	73.9	75.4	72.2	73.9	75	

 Maximum
 74.0

 Minimum
 73.4

 Average
 73.7

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



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



		Reportin	g Period	
Major Construction Activities	Apr	May	Jun	Jul
	2024	2024	2024	2024
Backfilling works at Launching Shaft Zone B of Subway SB-01	✓			
Construction works for DCS Chamber 2A10 and pipe laying	✓			
Construction works for DCS 2A5B, 2A10 and 2A5A		✓		
Construction works for DCS 2A5B, 2A10, 2A5A and 2A4			✓	
Construction works for DCS Chamber 2A5A, 2A4 and pipe laying				✓
Construction of Retaining Wall Type 1 for S14	✓			
Construction of LW02 structural steel roof	✓	✓	✓	✓
Construction of Parapet for S14	✓	✓	✓	✓
Construction of Bridge Deck for S14	✓			
Construction of bridge deck of S14 and portal for K73 Bridge		✓	✓	
Construction of bridge deck of S14				✓
Construction of headwall at Subway SB01 Retrieval Shaft	✓			✓
Construction of Lift Shaft for Subway SB-01				✓
Glazing installation for KS10 Lift			✓	✓
Louvre installation for KS10 lift			✓	✓
Dismantling Falsework and Portal Frame at LW-02	✓	✓		
Dismantle of temporary steel decking across Kai Tak River at LW02			✓	✓
Drainage construction and backfilling works for retaining wall of S14	✓	✓	✓	✓
Drainage construction works at PS2 and PS4	✓	✓	✓	✓
Toe grouting of sheet piles of additional staircase at SB01	✓			
Installation of glass bracket of Lift at LW02		✓		
Installation of glass bracket of Lift at LW02 and glass panels			✓	✓
Construction of Public Lighting at LW02		✓	✓	✓
SPR Retrieval Shaft Headwall RC construction		✓	✓	
RC construction works for lift and staircase of LW-02	✓	✓		
RC Construction for Kerb of Elevated Walkway LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase	✓	✓	✓	✓
Renovation works for existing subways KS10	✓	✓	✓	✓
Road and Drain Construction works for Road L16, Commercial Street and Road D1	✓	✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

	Reporting Period						
Factors might affect the monitoring results		May 2024	Jun 2024	Jul 2024			
Non-project related construction activities in the adjacent construction sites were observed.		✓	✓	✓			

Appendix L – Event and Action Plan for noise

E4		Act	Action			
Event	ET	IEC	Supervisor / ER	Contractor		
Action Level being exceeded	 Notify Supervisor / ER, IEC and Contractor; Carry out investigation; Report the results of investigation to the IEC, Supervisor / ER and Contractor; Discuss with the IEC and Contractor on remedial measures required; Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is 	 Review the investigation results submitted by the ET; Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly; 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.)	 Submit noise mitigation proposal to IEC and Supervisor / ER; Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified.) 		
Limit Level being exceeded	identified.) 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	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.		

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

Appendix M – Event and Action Plan for Landscape a	and Visual Impact

E-von4	Action						
Event	ET	IEC	Supervisor / ER	Contractor			
Design Check	1. 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 Supervisor /ER. Discuss remedial actions with IEC, Supervisor /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 Supervisor /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 Supervisor /ER. Increase monitoring frequency. Discuss remedial actions with IEC, Supervisor /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 Supervisor /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 N – Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE FOR _____ (YEAR)

	Actual Quantities of Inert C&D Materials Generated Monthly Actual Quantities of O								f C&D Wastes	Generated Mo	onthly		
Month	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	2.16	0.00	2.16	0.00	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
FEB	3.17	0.50	2.67	0.00	2.67	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.01
MAR	0.22	0.22	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.01
APR	0.32	0.12	0.20	0.40	0.20	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.01
MAY	2.59	2.09	0.50	0.20	0.50	0.00	1.89	0.00	0.00	0.10	0.00	0.00	0.10
JUNE	0.47	0.14	0.33	0.00	0.04	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.05
SUB- TOTAL	8.93	3.07	5.86	0.60	5.57	0.00	3.76	0.00	0.00	0.10	0.00	0.00	0.19
JULY	0.23	0.18	0.01	0.00	0.04	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.04
AUG													
SEPT													
OCT													
NOV													
DEC													
TOTAL	9.16	3.25	5.87	0.60	5.61	0.00	3.95	0.00	0.00	0.10	0.00	0.00	0.23

Appendix O – Environmental Mitigation Implementation Schedule (EMIS)

EIA Ref	Recommended Mitigation Measures	In	npleme	entatio	n
	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	V			
S8.8	Construction site should be provided with adequately designed perimeter channel and pretreatment 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 pend. 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.	Ø			
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.	V			
S8.8	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	7			
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.	V			
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.	V			
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.	abla			
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.	\square			
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 loading 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.		V		
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.	Ī			
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.	Ø			
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.	V			
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	<u> </u>			
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	\square			

EIA Ref	Recommended Mitigation Measures	Implementation			n
	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.	V			
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.	$\overline{\square}$			
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.	V			
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.		V		
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		V		
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	V			
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.	V			
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	$\overline{\checkmark}$			
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.	V			
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		V		
Part C C	onstruction 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		V		
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.		V		
	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.	Ø			
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	$\overline{\checkmark}$			
Part D W	/aste / 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		V		
	Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures		V		
	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	V			
	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	Ø			
\$9.5	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 duety materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet 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	V			
Part E L	andscape & 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.		V		
Part F A	ir 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.		V		
S6.8	Misting for the dusty material should be carried out before being loaded into the vehicle.	$\overline{\square}$			
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.	V			
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	V			
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		V		
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.		V		
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.		$\overline{\checkmark}$		

EIA Ref	Recommended Mitigation Measures	In	nplementa	ation
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.		I	
S6.5	8 times daily watering of the work site with active dust emitting activities.		V	

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

Reporting Month: July 2024

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