Our ref: 18-12-2023

18-12-2023 By hand

Environmental Protection Department

Environmental Assessment Division

Metro Assessment Group

Kowloon Section (2)

27th floor, Southorn Centre,

130 Hennessy Road,

Wan Chai, Hong Kong

(Attn: Mr. TANG Ho Him, Matthew)

Dear Mr. TANG,

Contract No. EDO 2/2020
Environmental Monitoring Works for Contract No. ED/2018/05 – Kai Tak Development – Stage 5B Infrastructure Works at the Former North Apron Area
Submission of Monthly EM&A Report for November 2023

We refer to the Environment Permit (EP) No. EP-337/2009 for the captioned project.

Pursuant to Condition 3.3 of the EP-337/2009, please find enclosed four hard copies and one electronic copy of Monthly EM&A Report for November 2023, which has been verified by the IEC for your reference.

Thank you very much for your attention and please feel free to contact Mr. Lee at 9382 4204 should you require further information.

Yours faithfully,

For and on behalf of

Ka Shing Management Consultant Limited

AKCL

Applied knowledge center limited

Company Secretary

Encl. Monthly EM&A report for November 2023

Member of the Aurecon Group

Date: 14 December 2023
Your ref:
Our ref: PL-202312019

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

Attn.: Ms. Mavis Law, SRE

Dear Ms. Law,

Re: Agreement No. EDO 6/2019
Independent Environmental Checker for Contract No. ED/2018/05 Kai Tak Development – Stage 5B Infrastructure Works at the Former North Apron Area
Verification of Monthly EM&A Report (November 2023)

Reference is made to the Monthly EM&A Report (November 2023) (Version 1.1) issued by the Environmental Team on 14 December 2023.

Please be informed that we have no adverse comment on the captioned submission. We hereby verify the Monthly EM&A Report (November 2023) in accordance with Condition 3.3 of Environmental Permit No. EP-337/2009.

Thank you for your attention.

Yours sincerely,
For and on behalf of
Acuity Sustainability Consulting Limited

Kevin Li
Independent Environmental Checker

c.c.	CEDD	Attn.:	Mr. Albert Tse	By email
	Ka Shing	Attn.:	Mr. Chan Pang (ETL)	By email

Acuity Sustainability Consulting Limited
Flat/RM E, 12/F, Ford Glory Plaza,
Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong
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http www.acuityhk.com | www.aurecongroup.com

Environmental Monitoring and Audit Report

for

Contract No. ED/2018/05 –

Kai Tak Development – Stage 5B infrastructure works at the former north apron area

Contract No.: EDO 2/2020

November 2023

(Version 1.1)

Certified By: 

(Environmental Team Leader)

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EXECUTIVE SUMMARY

1. This is the 34th Monthly Environmental Monitoring & Audit (EM&A) report which summarises the findings of the EM&A Programme during the reporting period from 1 to 30 November 2023.

Breaches of Action and Limit Levels

2. 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

3. 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

4. Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

5. Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

Table I Non-compliance Record in the Reporting Month

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

Complaint log

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

Table II Summary of complaints in the Reporting Month

Date of complaint received	Date of compliant	Description of complaint	Recommendations / Action taken	Close-out date / Status
No complaint was received in the reporting month.	NA	NA	NA	NA

Notifications of summons and successful prosecutions

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

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

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

Report changes

8. There was no reporting change in the reporting month.

Key construction works in the reporting month

9. Major construction activities undertake during the reporting month included:
   - Erect falsework and working platform for Decking of Elevated Walkway LW-02
   - RC Construction for Decking of Elevated Walkway LW-02
   - RC Construction of LW02 Lift and Staircase
   - Installation of post tensioning anchorage system at LW-02
   - Construction of Permanent Shaft Structure of SB-01
   - Road and Drain Construction works for Road L16, Commercial Street and Road D1
   - Construction works for DCS

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

Future key issues

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

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

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

1. INTRODUCTION

Project Background

1.1 The Kai Tak Development (KTD) is located in the southern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.

1.2 Contract No. ED/2018/05 - Kai Tak Development – stage 5B infrastructure works at the former north apron area (The Project), comprises mainly the design and construction of a section of dual two-lane Road D1; single two-lane Road L9 and Road L16; a single-lane slip road S14; a pedestrian subway SB-01; an elevated walkway LW-02; renovation of the existing pedestrian subways KS9, KS10 and KS32, as well as modification of the southern end of the existing pedestrian subway KS10; associated footpaths, street lighting, traffic aids, drainage, sewerage, water mains, landscaping, electrical and mechanical works, and ancillary works. The proposed works are shown in Figure 1 and Figure 2. The proposed works and site boundary are shown in Figure 3 and Figure 4. Civil Engineering and Development Department (CEDD) had completed an Environmental Impact Assessment (EIA) and is the Permit Holder.

1.3 In accordance with the approved EIA Reports, Environmental Monitoring and Audit (EM&A) programmes are recommended to ensure compliance with the EIA study recommendations. The project proponent was the Civil Engineering and Development Department (CEDD). AECOM Asia Co. Ltd. (AECOM) was commissioned by CEDD as Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual). Acuity Sustainability Consulting Limited (Acuity) was commissioned as the Independent Environmental Checker (IEC). Build King – STEC Joint Venture (Build King) was appointed as the main Contractor for the construction works of Contract No. ED/2018/05. Ka Shing was commissioned by CEDD to undertake the role of the Environmental Team (ET) to implement the EM&A programme for The Project.

1.4 The construction work under ED/2018/05 comprises the EM&A Manual (EIA Register No. AEIAR-130/2009 for Kai Tak Development) and Environmental Permit No. EP- 337/2009.

1.5 Air quality and noise monitoring has been proposed in the EM&A Manual with EIA Register No. AEIAR-130/2009 for Kai Tak Development.

Project Organization

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

Table 1.1 Contact Information of Key Personnel

Party	Role	Contact Person	Position	Phone No.	E-mail
Civil Engineering and Development Department (CEDD)	Project Proponent	Mr. Dennis Fung	Permit Holder	3842 7087	dycfung@cedd.gov.hk
AECOM Asia Co. Ltd. (AECOM)	Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual)	Mr. Vincent Lee	Supervisor's Delegate	2798 0771	sre2@ktd-stage5.com
Acuity Sustainability Consulting Limited (Acuity)	Independent Environmental Checker (IEC)	Mr. Kevin Li	IEC	9779 2247	kevin.li@aurecongroup.com
Ka Shing Management Consultant Limited (Ka Shing)	Environmental Team (ET)	Mr. Pang Chan	ET Leader	6082 2973	stage5b@ka-shing.net
Build King – STEC Joint Venture (BK-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

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

Submission Status under the Environmental Permits

1.9 The status of required submission under Environmental Permit (EP) conditions under EP-337/2009 are summarized in Table 1.3.

Table 1.3 Summary of Status of Required Submission of EPs

EP Condition EP-337/2009	Submission	Submission Date
Condition 1.11	Notification of Commencement Date of Construction of the Project	12 Jan 2021
Condition 2.3	Management Organization of Main Construction Companies	21 Sep 2020
Condition 2.3	Updated Management Organization of Main Construction Companies	4 July 2022
Condition 2.4	Design Drawings	12 Jan 2021
Condition 2.11	Landscape Mitigation Plans	17 Dec 2020
Condition 3.2	Baseline Monitoring Report	12 Jan 2021
Condition 3.3	Monthly EM&A Report (Oct 2023)	22 Nov 2023

2. AIR QUALITY MONITORING

Monitoring Requirements

2.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), impact air quality monitoring shall be carried out during the construction phase of the Project. For regular impact monitoring, a sampling frequency of at least once in every six days will be strictly observed at all of the monitoring stations for 24-hour TSP. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days will be undertaken when the highest dust impact occurs.

Monitoring Locations

2.2 Two designated monitoring stations were selected for air quality monitoring programme. Impact air quality monitoring was conducted at two air quality monitoring stations in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in Figure 5.

Table 2.1 Locations of Air Quality Monitoring Stations

Air Quality Monitoring Locations for the Project	Location of Measurement
AM2(A) – Ng Wah Catholic Secondary School	Rooftop
AM3 – Sky Tower	Podium floor near T7

Monitoring Parameters, Frequency and Duration

2.3 The air quality monitoring locations and monitoring frequency are listed in Table 2.2.

Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration

Air Monitoring Station	Location for Measurement	Parameter	Duration	Frequency
AM2(A) – Ng Wah Catholic Secondary School	Rooftop	- 24-hour average TSP	- 24 hours	- Once every 6 days

Air Monitoring Station	Location for Measurement	Parameter	Duration	Frequency
AM3 – Sky Tower	Podium Floor near Tower 7	- 1-hour average TSP	- 1 hour	- Three times every 6 days

2.4 The monitoring schedule for reporting month and next month is presented in Appendix C.

2.5 Photographic records of the impact monitoring setup are shown in Appendix D.

Monitoring Equipment

2.6 24-hour average TSP and 1-hour average TSP levels were measured for impact monitoring. 24-hour average TSP levels were measured by the High Volume Samplers (HVS) and 1-hour average TSP levels were measured by direct reading method to indicate short-term impacts. Wind data monitoring equipment was set up at conspicuous locations for logging wind speed and wind direction near to the dust monitoring locations. Table 2.3 summarizes the equipment to be used in the air quality monitoring.

Table 2.3 Air Quality Monitoring Equipment

Equipment	Model	Quantity	Calibration Interval
HVS Sampler	TE-5170 X c/w of TSP sampling inlet	2	2 months
HVS Calibrator	TISCH TE-5025A	1	1 year
1-hour TSP Dust Meter	TSI Model AM510 SidePak Personal Aerosol Monitor	2	1 year
Weather Station	Davis Vantage Pro2 Weather Station	1	6 months

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

2.8 Calibration certificates, catalogue of equipment are given in Appendix E.

Monitoring Methodology and QA/QC Procedure

24-hour TSP Monitoring

Operating/Analytical Procedures

2.9 Setup criteria of HVS are shown as follows:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- No two samplers were placed less than 2m apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2m of separation from walls, parapets and penthouses was set for the rooftop samples.
- A minimum of 2m separation from any supporting structure, measured horizontally was set.
- No furnaces or incineration flues was nearby.
- Airflow around the sampler was unrestricted.
- Any wire fence and gate, to protect the samplers, was not caused any obstruction during monitoring.
- Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity was provided to operate the samplers.

2.10 Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m^3/min. and 1.7 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

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

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

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

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

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

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

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

Maintenance/Calibration

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

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

1-hour TSP Monitoring

Measurement Procedures

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

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

- Recorded any activities that may generate dust during measurement period.

Maintenance/Calibration

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

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

Wind Data Monitoring

2.21 Wind Anemometer was installed at the roof-top of AM2(A) – Ng Wah Catholic Secondary School with 10m above ground and clear of constructions or turbulence caused by the buildings.

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

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

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

2.25 Details of weather information during the monitoring period are shown in Appendix F.

Action and Limit Levels

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

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

Parameter	Air Monitoring Station	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
24-hour average TSP	AM2(A)	175	260
	AM3	172	260

Table 2.5 Action and Limit Levels of 1-hour average TSP for Construction Dust Monitoring

Parameter	Air Monitoring Station	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
1-hour average TSP	AM2(A)	302	500
	AM3	301	500

Impact Air Quality Monitoring results

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

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

Air Quality Monitoring Station	Average TSP Concentration, $\mu g/m^3$	Range, $\mu g/m^3$	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AM2(A)	39	32 – 51	175	260
AM3	54	45 – 71	172	260

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

Air Quality Monitoring Station	Average TSP Concentration, $\mu g/m^3$	Range, $\mu g/m^3$	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AM2(A)	46	32 – 56	302	500
AM3	54	39 – 73	301	500

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

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

2.30 The Event and Action Plan is provided in Appendix I.

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

2.32 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.

3. NOISE MONITORING

Monitoring Requirements

3.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), impact noise monitoring shall be carried out during the construction phase of the Project.

3.2 Regular monitoring, $L_{Aeq, 30\text{-minute}}$, for each station will be on a weekly basis and conduct one set of measurements between 0700 – 1900 hrs on normal weekdays.

3.3 If construction works are extended to include works during 1900 – 0700 hrs as well as public holidays and Sundays, additional weekly impact monitoring will be carried out during the respective restricted hours periods.

Monitoring Locations

3.4 Two designated monitoring stations were selected for noise monitoring programme. Impact noise monitoring was conducted at two noise monitoring stations in the reporting month. Table 3.1 describes the noise monitoring locations, which are also depicted in Figure 6.

Table 3.1 Locations of Noise Monitoring Stations

Noise Monitoring Locations for the Project	Location of Measurement
M4(A) – Le Billionnaire	Podium (Façade)
M5(A) – Prince Ritz	Podium (Façade)

Monitoring Parameters, Frequency and Duration

3.5 The noise monitoring locations and monitoring frequency are listed in Table 3.2.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Noise Monitoring Station	Location for Measurement	Parameter	Frequency and Duration
M4(A) – Le Billionnaire	Podium (Façade)	L_{Aeq}, L_{A10} and L_{A90}	30-minute measurement at each monitoring station between 0700 – 1900 hrs on normal weekdays (Monday to Saturday) at frequency of once per week.
M5(A) – Prince Ritz	Podium (Façade)		

3.6 The monitoring schedule for reporting month and next month is presented in Appendix C.

3.7 Photographic records of the monitoring setup are shown in Appendix D.

Monitoring Equipment

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

Table 3.3 Noise Monitoring Equipment

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

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

Monitoring Methodology and QA/QC Procedure

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

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

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

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

3.14 Noise level was recorded.

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

Maintenance and Calibration

3.16 The microphone of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.

3.17 The sound level meter and sound calibrator were calibrated annually by HOKLAS accredited laboratory or equivalent.

Action and Limit Levels

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

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

Time Period	Noise Monitoring Station	Baseline Noise Levels, dB (A)	Action Level	Limit Level ^

0700 – 1900 hrs on normal weekdays	M4(A)	69.5	When one documented complaint is received.	75 dB(A)
	M5(A)	72.5		

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

Impact Noise Monitoring results

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

Table 3.5 Summary of Noise Monitoring Data during the reporting month

Noise Monitoring Station	Measured $L_{Aeq, 30\text{-}min}$, Average, dB(A)	Measured $L_{Aeq, 30\text{-}min}$, Range, dB(A)	Action Level	Limit Level ^
M4(A)	70.8	70.6 – 71.0	When one documented complaint is received	75 dB(A)
M5(A)	74.2	73.9 – 74.4		

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

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

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

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

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

3.24 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

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

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

Air Quality Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 24-hour average TSP concentration		Measured 24-hr average TSP in Reporting Month (Nov 2023) $\mu g/m^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu g/m^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu g/m^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	32 – 51
AM3 - Sky Tower	A40^	106^	138^	45 – 71

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

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

Air Quality Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 1-hour average TSP concentration		Measured 1-hr average TSP in Reporting Month (Nov 2023) $\mu g/m^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu g/m^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu g/m^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	32 – 56
AM3 - Sky Tower	A40^	217^	247^	39 – 73

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

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Noise Monitoring Station	NSR No. in EIA report	Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour $L_{Aeq, 30min}$, dB(A)	Measured Noise Level in Reporting Month (Nov 2023) $L_{Aeq, 30min}$, dB(A)
M4(A) – Le Billionnaire	NA	NA	70.6 – 71.0
M5(A) – Prince Ritz	NA	NA	73.9 – 74.4

4.2 No prediction in the EIA Report for 24-hour TSP monitoring results at AM2(A).

4.3 24-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

4.4 No prediction in the EIA Report for 1-hour TSP monitoring results at AM2(A).

4.5 1-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

4.6 No prediction in the EIA Report for noise monitoring results at M4(A) and M5(A).

5. LANDSCAPE AND VISUAL MONITORING

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

Results and Observations

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

5.3 Site inspections were conducted on 2, 10, 16, 23 and 30 November 2023 in the reporting month.

5.4 The summary of site audits is attached in Table 5.1.

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

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
2 Nov 2023	NA	NA	NA
10 Nov 2023	NA	NA	NA
16 Nov 2023	NA	NA	NA
23 Nov 2023	NA	NA	NA
30 Nov 2023	NA	NA	NA

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

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

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT

Site Inspection

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

6.2 Site inspections were conducted 2, 10, 16, 23 and 30 November 2023 in the reporting month.

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

Table 6.1 Summary of site inspections observations during the reporting month

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
2 Nov 2023	 Observation: Secondary container shall be provided for the plastic chemicals to prevent soil contamination.	 Action Taken: plastic chemical has been removed.	Closed out on 10 Nov 2023
10 Nov 2023	 Observation: Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	 Action Taken: Stockpiles has been removed.	Closed out on 16 Nov 2023

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
16 Nov 2023	 Observation: Secondary container shall be provided for the plastic chemicals to prevent soil contamination.	 Action taken: plastic chemical has been removed.	Closed out on 23 Nov 2023
23 Nov 2023	 Observation: The vehicles should be restricted to maximum speed of 10 km per hour.	 Action taken: The vehicles has been restricted to maximum speed of 10 km per hour.	Closed out on 30 Nov 2023
30 Nov 2023	 Observation: Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	 Action taken: Stockpiles has been removed.	Closed out on 7 Dec 2023

Status of Waste Management

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

6.5 The Contractor was registered as a chemical waste producer for the Project. The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

Status of Environmental Licenses, Notification and Permits

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

Table 6.2 Summary of Environmental Licenses, Notifications and Permits

Environmental Licenses, Notifications and Permits	Ref. No.	Valid Form	Valid Till
Environmental Permit under EIAO	EP-337/2009	23 Apr 2009	N/A
Construction Dust Notification under APCO	HA/1826/1	29 Dec 2020	N/A
Waste Disposal Billing Account	7038086	21 Aug 2020	N/A
Registration as a Chemical Waste Producer	5111-286-B2596-01	15 Sep 2020	N/A
Wastewater Discharge License under WPCO	WT00037618-2021	29 Mar 2021	31 Mar 2026
	WT00037370-2021		
	WT00038562-2021	15 Jul 2021	31 Jul 2026
Construction Noise Permit	GW-RE0624-23	20 Jun 2023	19 Dec 2023

Implementation Status of Environmental Mitigation Measures

6.7 The Contractor has implemented environmental mitigation measures as stated in the EIA report, the EP and the EM&A Manual. The implementation status of the mitigation measures is summarized in Appendix O.

Environmental Complaint and Non-compliance

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

Table 6.3 Summary of complaints in the Reporting Month

Date of complaint received	Date of compliant	Description of complaint	Recommendations / Action taken	Close-out date / Status
No complaint was received in the reporting month.	NA	NA	NA	NA

6.9 Complaint log is shown in Appendix P.

Notifications of summons and successful prosecutions

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

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

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

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

7. FUTURE KEY ISSUES

Construction Programme in the coming month

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

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

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

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

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

- Provide sufficient mitigation measures as recommended in Approved EIA Report.

7.3 The recommended environmental measures proposed in the EM&A Manual (EIA Register No. AEIAR-130/2009) shall be effectively implemented to minimize the potential environmental impacts. The Contractor is reminded to implement the mitigation measures properly.

Environmental Site Inspection and Monitoring Schedule for next month

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

8. CONCLUSIONS

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

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

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

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

8.5 No complaint was received in the reporting month.

8.6 No notification of summons and successful prosecutions was received in the reporting month.

8.7 Based on the site inspection and audits, impact air quality and noise monitoring results, it was considered that the mitigation measures were effective to control the potential environmental impacts from the Project during the reporting period.

Figure

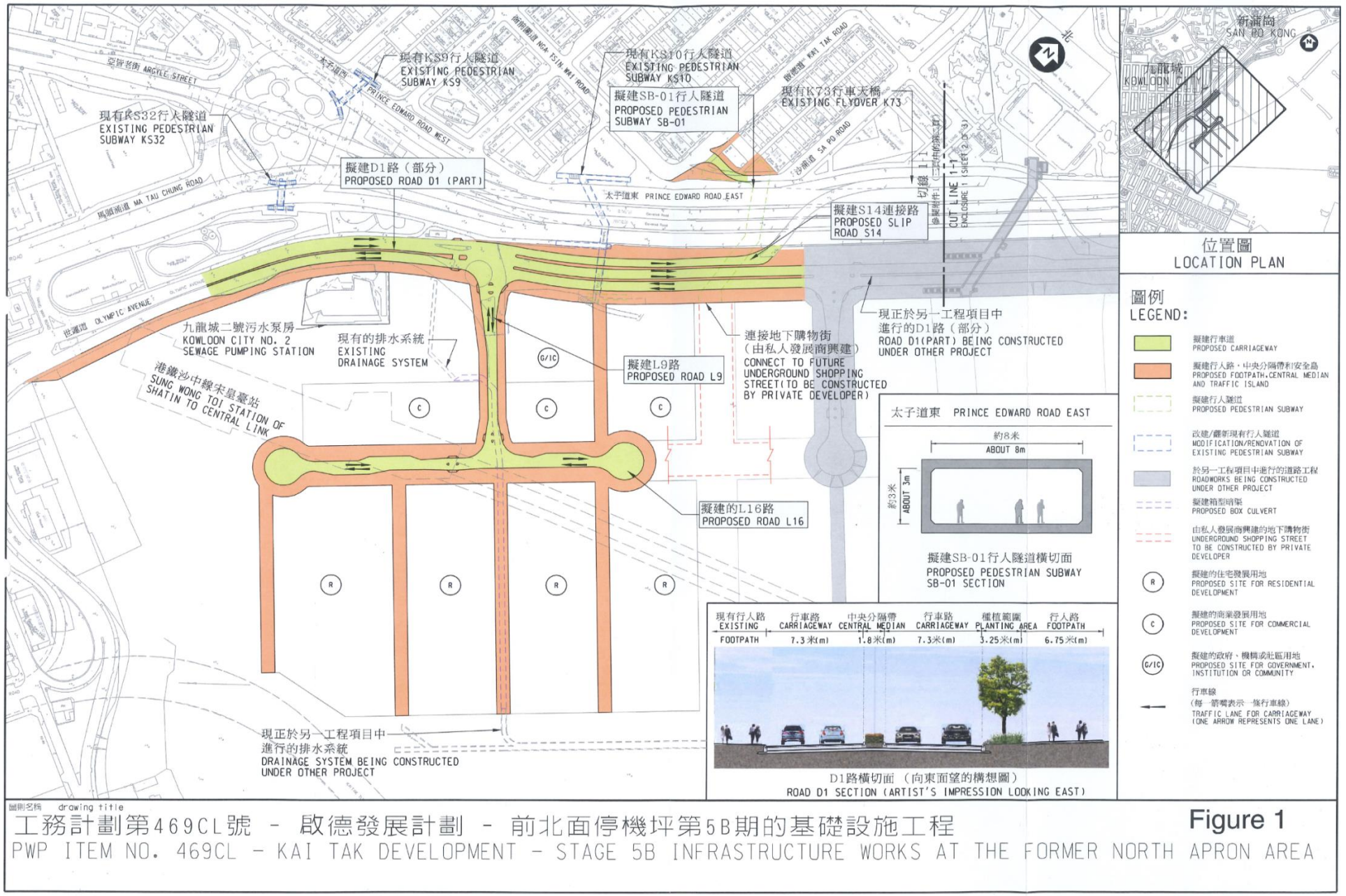


Figure 1 – Proposed works of Contract No. ED/2018/05

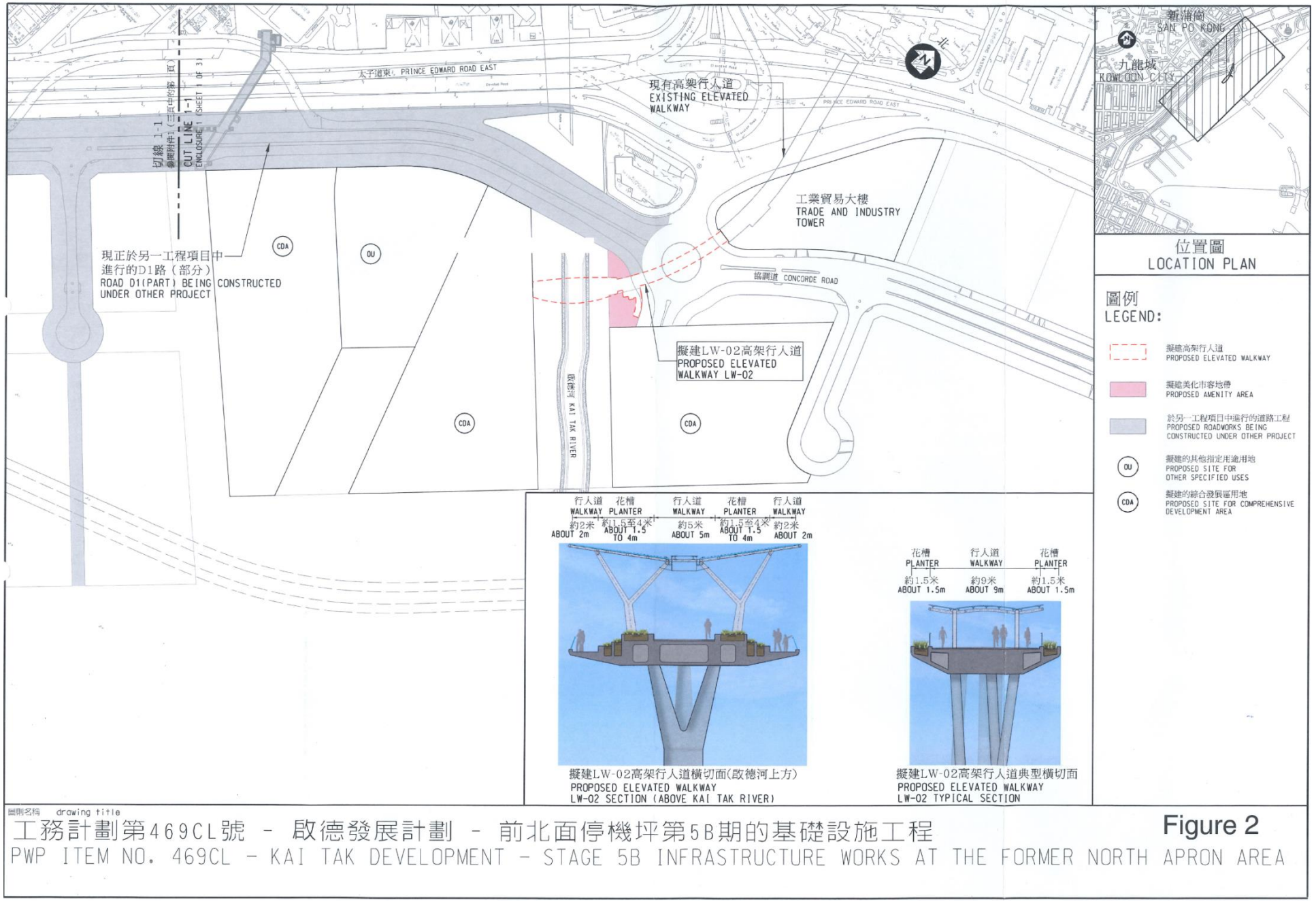


Figure 2 – Proposed works of Contract No. ED/2018/05

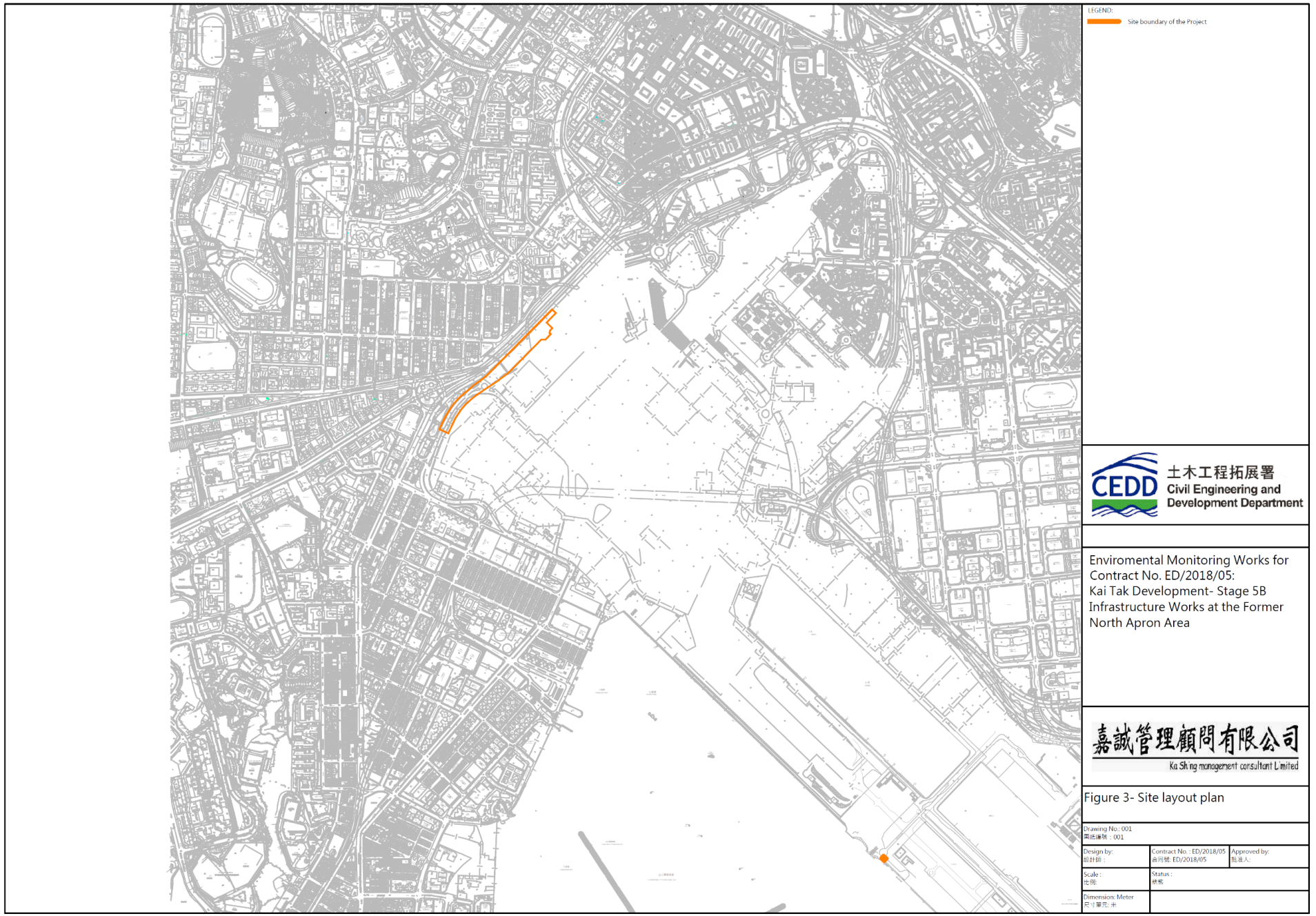


Figure 3 – D1 Road Site Layout Plan

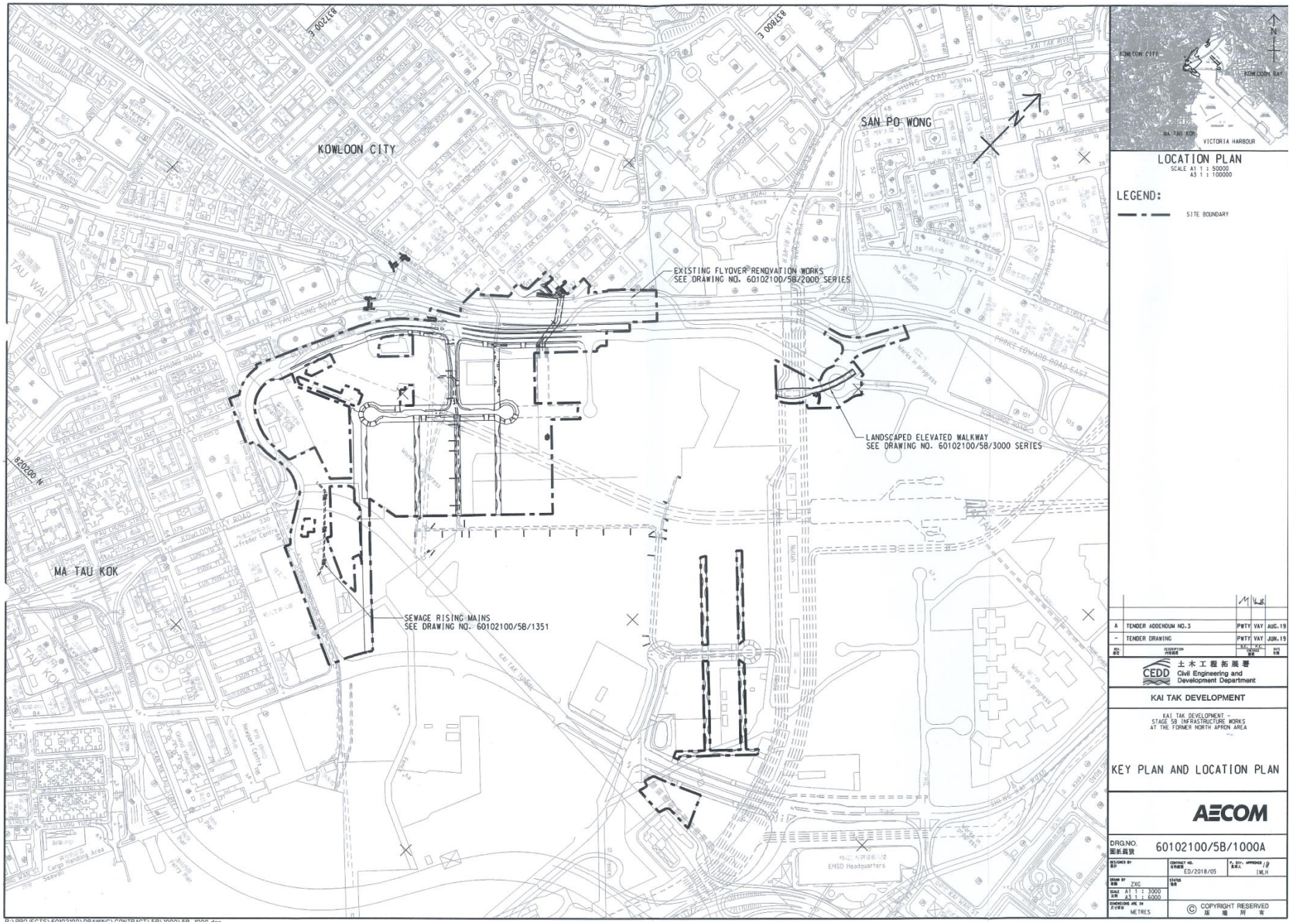


Figure 4 – Site Layout Plan

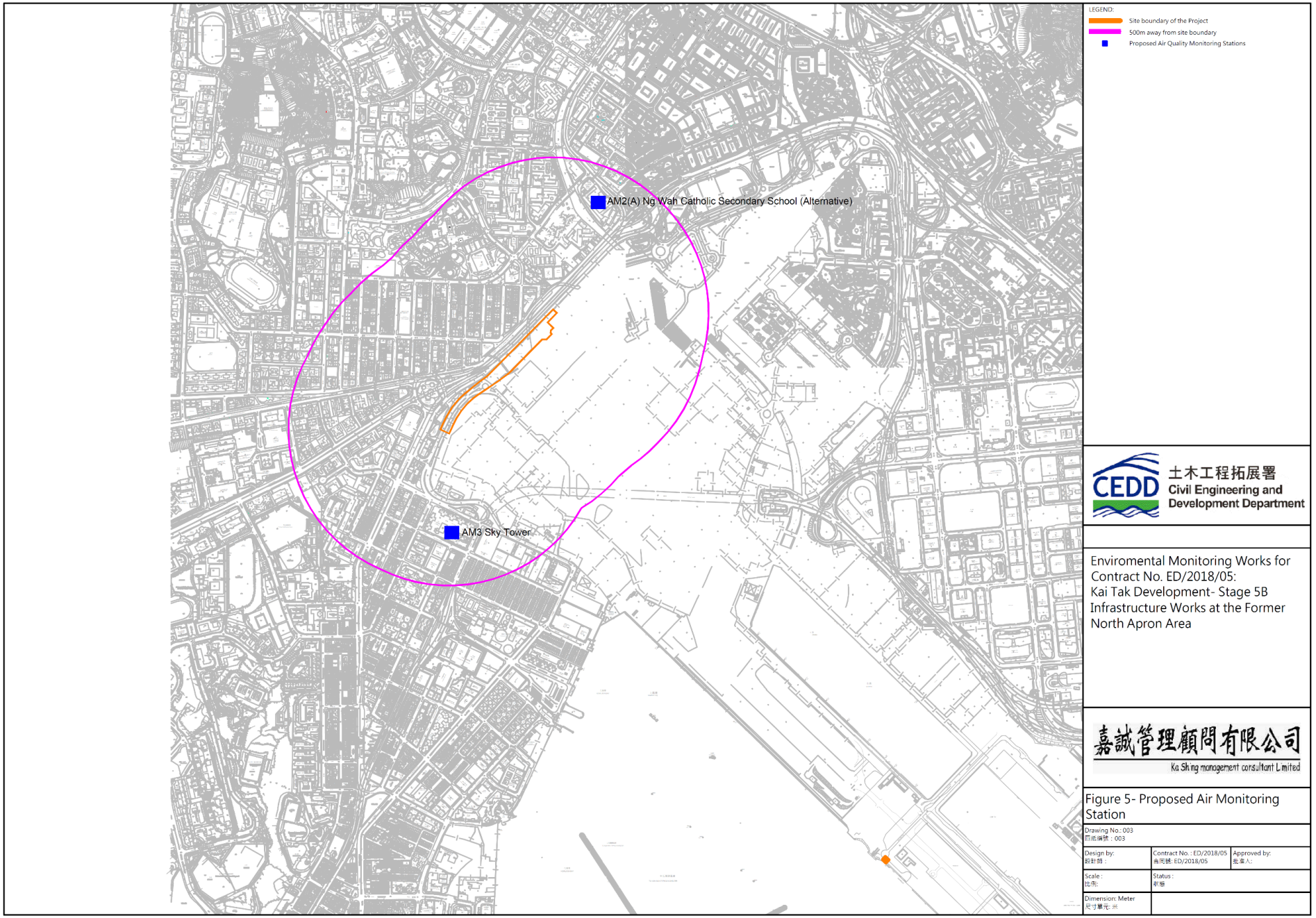


Figure 5 – Air Quality Monitoring Stations

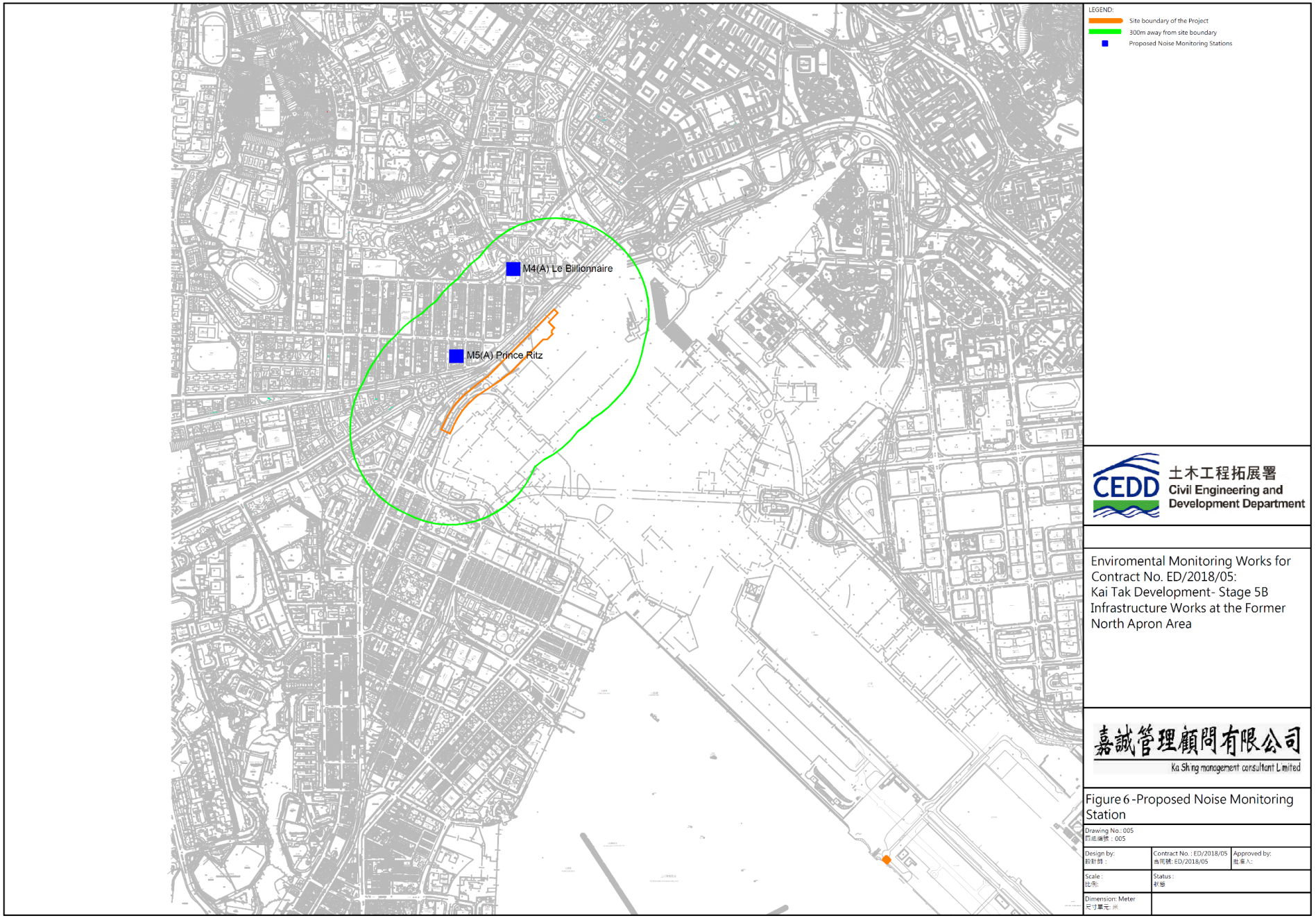
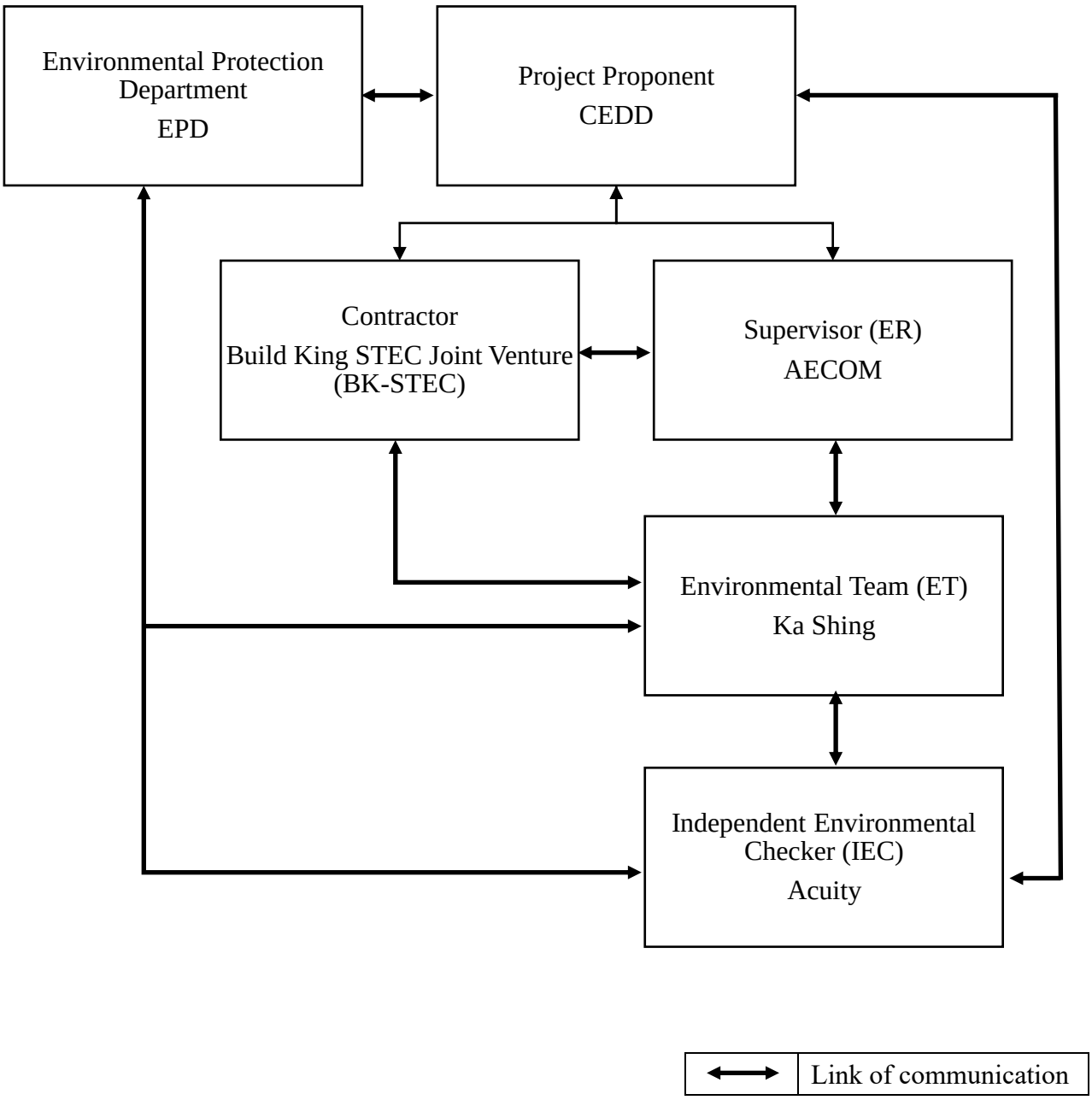


Figure 6 – Noise Monitoring Stations

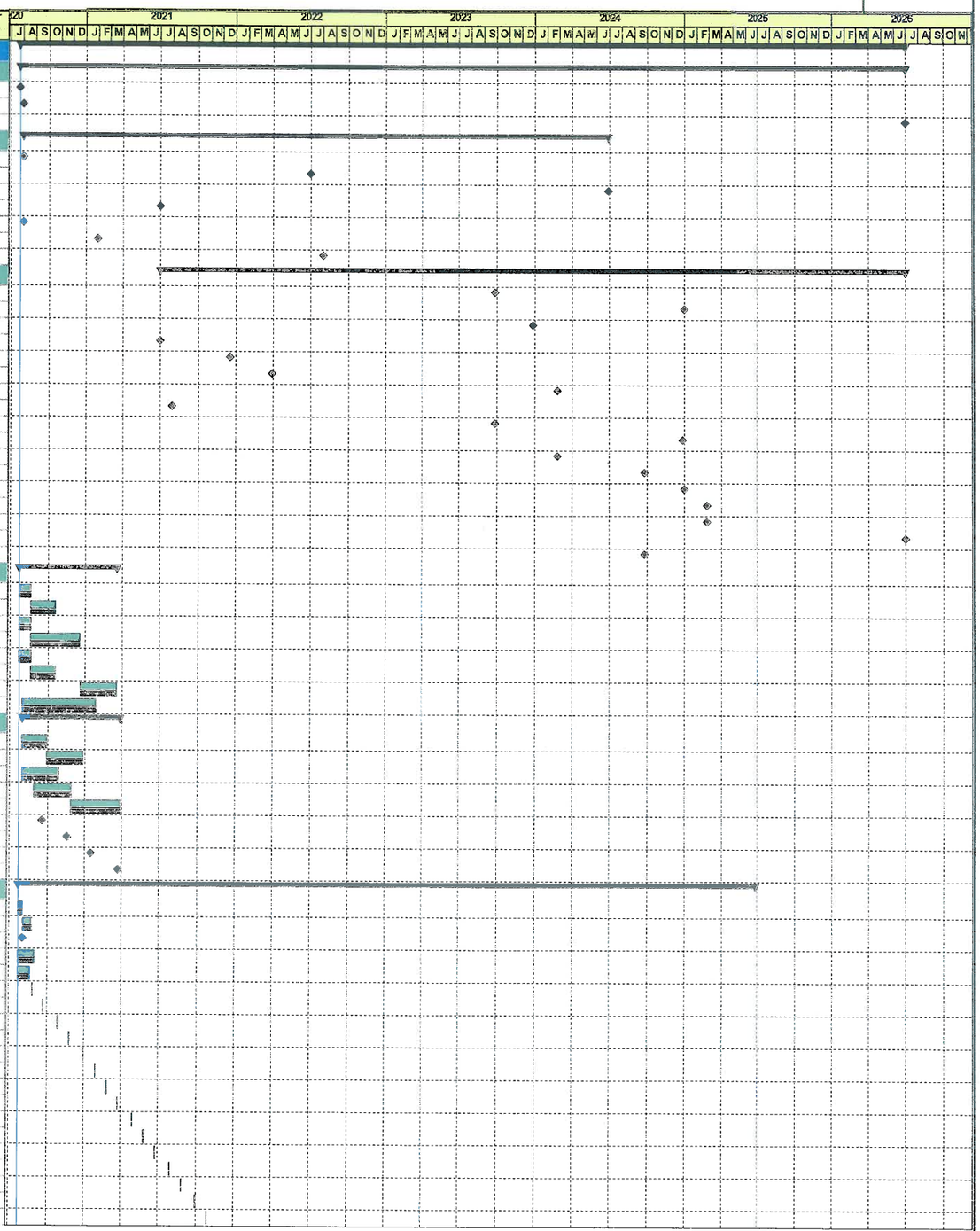
Appendix A – Organization Chart of EM&A Team


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

Appendix B – Construction Programme

WP Rev-39

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
WP_REV37 (first comments)		1762	22-Jul-20	30-Jun-26	22-Jul-20	30-Jun-26	0	
KEY DATES		2170	22-Jul-20	30-Jun-26	22-Jul-20	30-Jun-26	0	2
KTD.KD.1000	Contract date	0	22-Jul-20		22-Jul-20		0	2
KTD.KD.1010	Contract starting date	0	31-Jul-20		31-Jul-20		0	2
KTD.KD.1020	Contract completion date	0		30-Jun-26		30-Jun-26	0	2
ACCESS DATES		1429	31-Jul-20	29-Jun-24	31-Jul-20	29-Jun-24	0	2
KTD.KD.1030	Parts 1, 1A, 1B, 2, 3, 4, 7, 8 and 9	0	31-Jul-20		31-Jul-20		0	2
KTD.KD.1040	Part 5	0	30-Jun-22		30-Jun-22		0	2
KTD.KD.1050	Part 6	0	29-Jun-24		29-Jun-24		0	2
KTD.KD.1060	Part 6A	0	30-Jun-21		30-Jun-21		0	2
KTD.KD.1070	Works Areas WA1, WA2, WA3, WA4, WA5, WA6 and WA7	0	31-Jul-20		31-Jul-20		0	2
KTD.KD.1080	Part 10 and Works Area WA4A	0	29-Jan-21		29-Jan-21		0	2
KTD.KD.1090	Works Area WA8	0	31-Jul-22		31-Jul-22		0	2
CONTRACT SECTIONAL COMPLETION DATES		1826	30-Jun-21	30-Jun-26	30-Jun-21	30-Jun-26	0	2
KTD.KD.1100	Section 1:Compl of all works within Parts 1 and 8 and Elevated Landscaped Walkway LW-02	0		26-Sep-23		26-Sep-23	0	2
KTD.KD.1110	Section 2:Compl of all works within Parts 1B, 6A and 7 and remaining works of all Parts	0		31-Dec-24		30-Jun-26	546	2
KTD.KD.1120	Section 3:Compl of all works within Parts 1A and 5 and drainage and sewage works within Part 6	0		27-Dec-23		27-Dec-23	0	2
KTD.KD.1130	Section 4:Compl of all UU and services within Part 4	0		30-Jun-21		30-Jun-21	0	2
KTD.KD.1140	Section 5:Compl of all UU and services within Part 3, rising mains diversion & demolition of ext. structures	0		17-Dec-21		17-Dec-21	0	2
KTD.KD.1150	Section 6:Compl of all works within Part 2 and Part 10	0		29-Mar-22		29-Mar-22	0	2
KTD.KD.1160	Section 7:Compl of all works within Part 3 (Subj to excision within 416days from starting date)	0		25-Feb-24		25-Feb-24	0	2
KTD.KD.1170	Section 8:Compl of all Box Culvert B1 within Parts 1 and 3 and diversion and abandon works	0		29-Jul-21		29-Jul-21	0	2
KTD.KD.1180	Section 9:Compl of DCS works within Parts 1 and 1A (Subj to excision within 239days from starting date)	0		25-Sep-23		26-Sep-23	0	2
KTD.KD.1190	Section 10:Compl of establ work for all landscape works(except Sections 14, 15 and 16)	0		26-Dec-24		26-Dec-24	0	2
KTD.KD.1200	Section 11:Compl of all works within Part 4 (Subj to excision within 244days from starting date)	0		25-Feb-24		25-Feb-24	0	2
KTD.KD.1210	Section 12:Compl of all SB-01 within Part 1A	0		25-Sep-24		25-Sep-24	0	2
KTD.KD.1220	Section 13:Compl of all works within Part 6	0		31-Dec-24		30-Jun-26	546	2
KTD.KD.1230	Section 14:Compl of estab work for landscape works within Part 3 (Subj to excision within 416days from startin	0		24-Feb-25		24-Feb-25	0	2
KTD.KD.1240	Section 15:Compl of estab work for landscape works within Part 4 (Subj to excision within 244days from startin	0		24-Feb-25		24-Feb-25	0	2
KTD.KD.1250	Section 16:Compl of establ work for landscape works within Part 6	0		30-Jun-26		30-Jun-26	0	2
KTD.KD.1260	Section 17:Compl of establ work for landscape works under Section 1	0		25-Sep-24		25-Sep-24	0	2
DESIGN, SUBMISSIONS, PERMIT APPLICATION & APPROVAL		240	22-Jul-20	18-Mar-21	04-Oct-20	30-Jun-26	1930	2
KTD.KD.1270	Prepare/submission of temporary works design	30	22-Jul-20	20-Aug-20	04-Oct-20	02-Nov-20	74	2
KTD.KD.1280	Consultation/approval of temporary works design	60	21-Aug-20	19-Oct-20	03-Nov-20	01-Jan-21	74	2
KTD.KD.1290	Prepare/submit Temp Geotechnical&Structural Works to HyD/TD/CEDD/GEO and others (incl SB-01 by RTBM, e	30	22-Jul-20	20-Aug-20	03-Nov-25	02-Dec-25	1930	2
KTD.KD.1300	Consult/approve Temp Geotechnical&Structural Works by HyD/TD/CEDD/GEO and others (incl SB-01 by RTBM,	120	21-Aug-20	18-Dec-20	03-Dec-25	01-Apr-26	1930	2
KTD.KD.1310	Prepare/submission of Temporary Drainage and Sewerage Management Plan to DSD/CEDD and others	30	22-Jul-20	20-Aug-20	02-Apr-26	01-May-26	2080	2
KTD.KD.1320	Consultation/approval of Temporary Drainage and Sewerage Management Plan by DSD/CEDD and others	60	21-Aug-20	19-Oct-20	02-May-26	30-Jun-26	2080	2
KTD.KD.1330	Application/approval of CNP for night works by relevant authorities and liaison with projects nearby	90	19-Dec-20	18-Mar-21	02-Apr-26	30-Jun-26	1930	2
KTD.KD.1340	Application/approval of permits or other statutory submissions by relevant authorities (i.e. CEDD,HyD,WSD,XPM	180	31-Jul-20	26-Jan-21	02-Jan-26	30-Jun-26	1981	2
TEMPORARY TRAFFIC MANGEMENT		240	31-Jul-20	27-Mar-21	18-Sep-20	30-Jun-26	1921	2
KTD.KD.1370	Prepare/Submit/Consult/Approval of TTA for loading/unloading at Sa Po Road and Concorde Road roundabout	60	31-Jul-20	28-Sep-20	20-Aug-21	18-Oct-21	385	2
KTD.KD.1380	Prepare/Submit/Consult/Approval of TTA for working platform erection crossing Concorde Road roundabout	90	29-Sep-20	27-Dec-20	25-Jun-22	22-Sep-22	634	2
KTD.KD.1390	Prepare/Submit/Consult/Approval of TTA for GW diversion/preliminary works at PERE and Sa Po Road	90	31-Jul-20	28-Oct-20	03-Nov-25	31-Jan-26	1921	2
KTD.KD.1400	Prepare/Submit/Consult/Approval of TTA for 2-staged Sa Po Road and PERE WB diversion	90	30-Aug-20	27-Nov-20	03-Dec-25	02-Mar-26	1921	2
KTD.KD.1410	Prepare/Submit/Consult/Approval of TTA for road and drainage works along Olympic Avenue	120	28-Nov-20	27-Mar-21	03-Mar-26	30-Jun-26	1921	2
KTD.KD.2180	1st TMLG Meeting	0		18-Sep-20		18-Sep-20	0	2
KTD.KD.2220	2nd TMLG Meeting	0		19-Nov-20		19-Nov-20	0	2
KTD.KD.2230	3rd TMLG Meeting	0		15-Jan-21		14-Jan-21	0	2
KTD.KD.2240	4th TMLG Meeting	0		23-Mar-21		23-Mar-21	0	2
CONSTRUCTION HEALTH AND SAFETY MANAGEMENT		1281	22-Jul-20	26-Jun-25	23-Jul-20	26-Jun-25	0	2
KTD.KD.1420	Prepare/submit of Draft Safety Plan	13	22-Jul-20	03-Aug-20	23-Jul-20	04-Aug-20	1	2
KTD.KD.1430	Prepare/submit Safety Plan	21	04-Aug-20	24-Aug-20	05-Aug-20	25-Aug-20	1	2
KTD.KD.1440	Conduct meeting to discuss Draft Safety Plan	0		03-Aug-20		03-Aug-20	0	2
KTD.KD.1450	Prepare/submit Site Traffic Safety Management Plan	41	22-Jul-20	31-Aug-20	23-Jul-20	01-Sep-20	1	2
KTD.KD.1460	Prepare/submit Construction Health and Safety Plan	29	22-Jul-20	19-Aug-20	23-Jul-20	20-Aug-20	1	2
KTD.KD.1470	1st SSMC Meeting	1	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	0	2
KTD.KD.1480	2nd SSMC Meeting	1	23-Sep-20	23-Sep-20	23-Sep-20	23-Sep-20	0	2
KTD.KD.1490	3rd SSMC Meeting	1	29-Oct-20	29-Oct-20	29-Oct-20	29-Oct-20	0	2
KTD.KD.1500	4th SSMC Meeting	1	26-Nov-20	26-Nov-20	26-Nov-20	26-Nov-20	0	2
KTD.KD.1510	5th SSMC Meeting	1	31-Dec-20	31-Dec-20	31-Dec-20	31-Dec-20	0	2
KTD.KD.1520	6th SSMC Meeting	1	28-Jan-21	28-Jan-21	28-Jan-21	28-Jan-21	0	2
KTD.KD.1530	7th SSMC Meeting	1	25-Feb-21	25-Feb-21	25-Feb-21	25-Feb-21	0	2
KTD.KD.1540	8th SSMC Meeting	1	24-Mar-21	24-Mar-21	24-Mar-21	24-Mar-21	0	2
KTD.KD.1550	9th SSMC Meeting	1	29-Apr-21	29-Apr-21	29-Apr-21	29-Apr-21	0	2
KTD.KD.1560	10th SSMC Meeting	1	27-May-21	27-May-21	27-May-21	27-May-21	0	2
KTD.KD.1570	11th SSMC Meeting	1	24-Jun-21	24-Jun-21	24-Jun-21	24-Jun-21	0	2
KTD.KD.1580	12th SSMC Meeting	1	29-Jul-21	29-Jul-21	29-Jul-21	29-Jul-21	0	2
KTD.KD.1590	13th SSMC Meeting	1	26-Aug-21	26-Aug-21	26-Aug-21	26-Aug-21	0	2
KTD.KD.1600	14th SSMC Meeting	1	30-Sep-21	30-Sep-21	30-Sep-21	30-Sep-21	0	2
KTD.KD.1610	15th SSMC Meeting	1	28-Oct-21	28-Oct-21	28-Oct-21	28-Oct-21	0	2



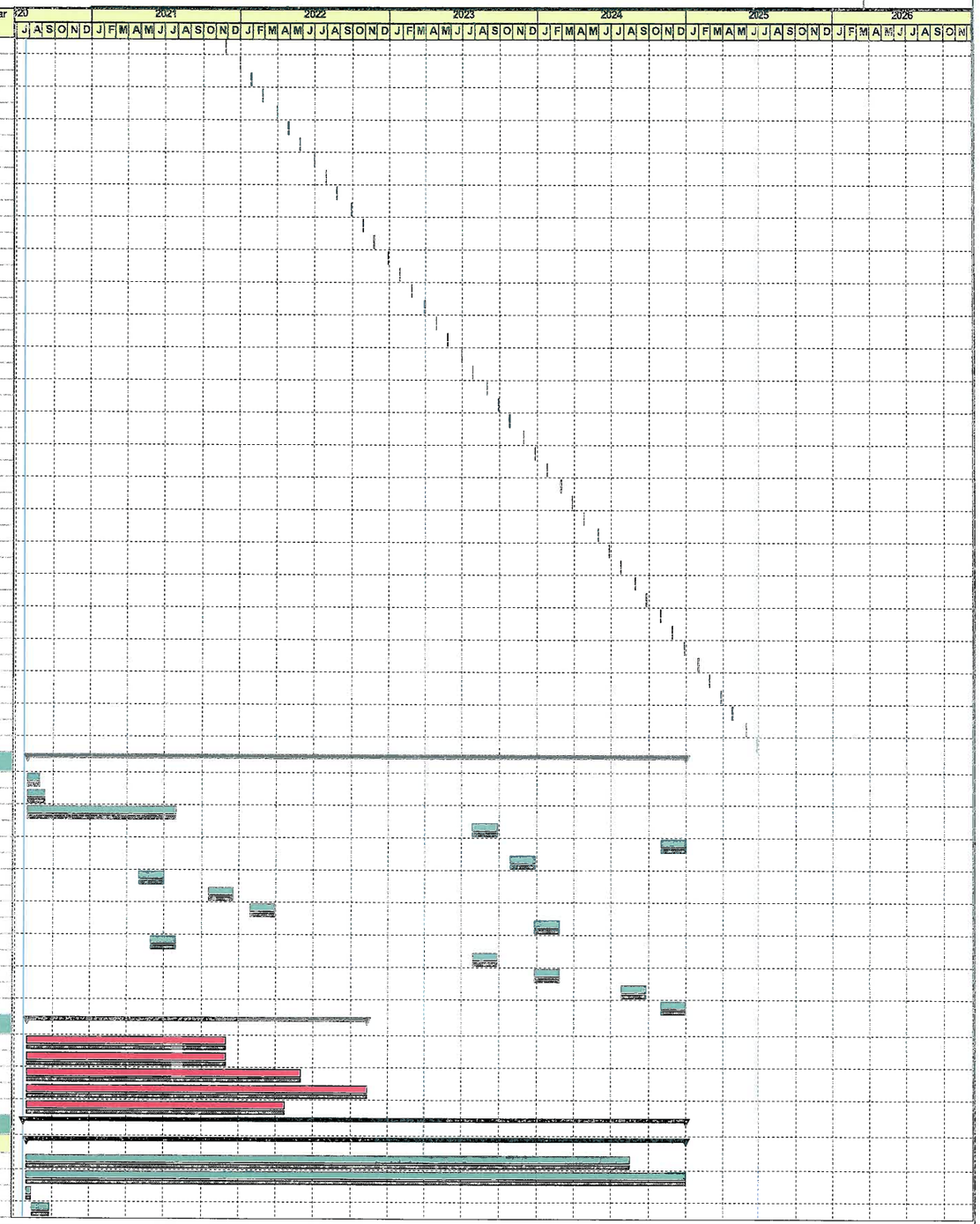
Project Baseline Bar
Remaining Work
Critical Remaining Work
Milestone
Summary

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
(Page 1 of 11)

Date	Revision	Checked	Approved
13-Oct-23	First Draft		

WP Rev-39

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.KD.1620	16th SSMC Meeting	1	25-Nov-21	25-Nov-21	25-Nov-21	25-Nov-21	0	2
KTD.KD.1630	17th SSMC Meeting	1	30-Dec-21	30-Dec-21	30-Dec-21	30-Dec-21	0	2
KTD.KD.1640	18th SSMC Meeting	1	27-Jan-22	27-Jan-22	27-Jan-22	27-Jan-22	0	2
KTD.KD.1650	19th SSMC Meeting	1	24-Feb-22	24-Feb-22	24-Feb-22	24-Feb-22	0	2
KTD.KD.1660	20th SSMC Meeting	1	31-Mar-22	31-Mar-22	31-Mar-22	31-Mar-22	0	2
KTD.KD.1670	21st SSMC Meeting	1	28-Apr-22	28-Apr-22	29-Apr-22	28-Apr-22	0	2
KTD.KD.1680	22nd SSMC Meeting	1	26-May-22	26-May-22	26-May-22	26-May-22	0	2
KTD.KD.1690	23rd SSMC Meeting	1	30-Jun-22	30-Jun-22	30-Jun-22	30-Jun-22	0	2
KTD.KD.1700	24th SSMC Meeting	1	28-Jul-22	28-Jul-22	28-Jul-22	28-Jul-22	0	2
KTD.KD.1710	25th SSMC Meeting	1	25-Aug-22	25-Aug-22	25-Aug-22	25-Aug-22	0	2
KTD.KD.1720	26th SSMC Meeting	1	29-Sep-22	29-Sep-22	29-Sep-22	29-Sep-22	0	2
KTD.KD.1730	27th SSMC Meeting	1	27-Oct-22	27-Oct-22	27-Oct-22	27-Oct-22	0	2
KTD.KD.1740	28th SSMC Meeting	1	24-Nov-22	24-Nov-22	24-Nov-22	24-Nov-22	0	2
KTD.KD.1750	29th SSMC Meeting	1	29-Dec-22	29-Dec-22	29-Dec-22	29-Dec-22	0	2
KTD.KD.1760	30th SSMC Meeting	1	26-Jan-23	26-Jan-23	26-Jan-23	26-Jan-23	0	2
KTD.KD.1770	31st SSMC Meeting	1	23-Feb-23	23-Feb-23	23-Feb-23	23-Feb-23	0	2
KTD.KD.1780	32nd SSMC Meeting	1	30-Mar-23	30-Mar-23	30-Mar-23	30-Mar-23	0	2
KTD.KD.1790	33rd SSMC Meeting	1	27-Apr-23	27-Apr-23	27-Apr-23	27-Apr-23	0	2
KTD.KD.1800	34th SSMC Meeting	1	25-May-23	25-May-23	25-May-23	25-May-23	0	2
KTD.KD.1810	35th SSMC Meeting	1	29-Jun-23	29-Jun-23	29-Jun-23	29-Jun-23	0	2
KTD.KD.1820	36th SSMC Meeting	1	27-Jul-23	27-Jul-23	27-Jul-23	27-Jul-23	0	2
KTD.KD.1830	37th SSMC Meeting	1	31-Aug-23	31-Aug-23	31-Aug-23	31-Aug-23	0	2
KTD.KD.1840	38th SSMC Meeting	1	28-Sep-23	28-Sep-23	28-Sep-23	28-Sep-23	0	2
KTD.KD.1850	39th SSMC Meeting	1	26-Oct-23	26-Oct-23	26-Oct-23	26-Oct-23	0	2
KTD.KD.1860	40th SSMC Meeting	1	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	0	2
KTD.KD.1870	41st SSMC Meeting	1	28-Dec-23	28-Dec-23	28-Dec-23	28-Dec-23	0	2
KTD.KD.1880	42nd SSMC Meeting	1	25-Jan-24	25-Jan-24	25-Jan-24	25-Jan-24	0	2
KTD.KD.1890	43rd SSMC Meeting	1	29-Feb-24	29-Feb-24	29-Feb-24	29-Feb-24	0	2
KTD.KD.1900	44th SSMC Meeting	1	28-Mar-24	28-Mar-24	28-Mar-24	28-Mar-24	0	2
KTD.KD.1910	45th SSMC Meeting	1	25-Apr-24	25-Apr-24	25-Apr-24	25-Apr-24	0	2
KTD.KD.1920	46th SSMC Meeting	1	30-May-24	30-May-24	30-May-24	30-May-24	0	2
KTD.KD.1930	47th SSMC Meeting	1	27-Jun-24	27-Jun-24	27-Jun-24	27-Jun-24	0	2
KTD.KD.1940	48th SSMC Meeting	1	25-Jul-24	25-Jul-24	25-Jul-24	25-Jul-24	0	2
KTD.KD.1950	49th SSMC Meeting	1	29-Aug-24	29-Aug-24	29-Aug-24	29-Aug-24	0	2
KTD.KD.1960	50th SSMC Meeting	1	26-Sep-24	26-Sep-24	26-Sep-24	26-Sep-24	0	2
KTD.KD.1970	51st SSMC Meeting	1	31-Oct-24	31-Oct-24	31-Oct-24	31-Oct-24	0	2
KTD.KD.1980	52nd SSMC Meeting	1	28-Nov-24	28-Nov-24	28-Nov-24	28-Nov-24	0	2
KTD.KD.1990	53rd SSMC Meeting	1	26-Dec-24	26-Dec-24	26-Dec-24	26-Dec-24	0	2
KTD.KD.2000	54th SSMC Meeting	1	30-Jan-25	30-Jan-25	30-Jan-25	30-Jan-25	0	2
KTD.KD.2010	55th SSMC Meeting	1	27-Feb-25	27-Feb-25	27-Feb-25	27-Feb-25	0	2
KTD.KD.2020	56th SSMC Meeting	1	27-Mar-25	27-Mar-25	27-Mar-25	27-Mar-25	0	2
KTD.KD.2030	57th SSMC Meeting	1	24-Apr-25	24-Apr-25	24-Apr-25	24-Apr-25	0	2
KTD.KD.2040	58th SSMC Meeting	1	29-May-25	29-May-25	29-May-25	29-May-25	0	2
KTD.KD.2050	59th SSMC Meeting	1	26-Jun-25	26-Jun-25	26-Jun-25	26-Jun-25	0	2
BIM RELATED DELIVERABLES		1515	31-Jul-20	31-Dec-24	01-Aug-20	30-Jun-25	546	2
KTD.KD.2060	Prepare/submit BIM Execution Plan	29	31-Jul-20	28-Aug-20	01-Aug-20	29-Aug-20	1	2
KTD.KD.2070	Prepare/submit Combined Services Drawings and CBWD generated from BIM	44	31-Jul-20	12-Sep-20	01-Aug-20	13-Sep-20	1	2
KTD.KD.2080	Prepare/submit proposal of asset information requirement	334	31-Jul-20	29-Jul-21	01-Aug-20	30-Jul-21	1	2
KTD.KD.2090	Prepare/submit Asset Data Deliverables for Section 1	60	29-Jul-23	26-Sep-23	02-May-26	30-Jun-26	1008	2
KTD.KD.2100	Prepare/submit Asset Data Deliverables for Section 2	60	02-Nov-24	31-Dec-24	02-May-26	30-Jun-26	546	2
KTD.KD.2110	Prepare/submit Asset Data Deliverables for Section 3	60	29-Oct-23	27-Dec-23	02-May-25	30-Jun-26	916	2
KTD.KD.2120	Prepare/submit Asset Data Deliverables for Section 4	60	02-May-21	30-Jun-21	02-May-26	30-Jun-26	1826	2
KTD.KD.2130	Prepare/submit Asset Data Deliverables for Section 5	60	19-Oct-21	17-Dec-21	02-May-26	30-Jun-26	1656	2
KTD.KD.2140	Prepare/submit Asset Data Deliverables for Section 6	60	29-Jan-22	28-Mar-22	02-May-26	30-Jun-26	1554	2
KTD.KD.2150	Prepare/submit Asset Data Deliverables for Section 7	60	28-Dec-23	25-Feb-24	02-May-26	30-Jun-26	856	2
KTD.KD.2160	Prepare/submit Asset Data Deliverables for Section 8	60	31-May-21	29-Jul-21	02-May-26	30-Jun-26	1797	2
KTD.KD.2170	Prepare/submit Asset Data Deliverables for Section 9	60	29-Jul-23	26-Sep-23	02-May-26	30-Jun-26	1008	2
KTD.KD.2190	Prepare/submit Asset Data Deliverables for Section 11	60	28-Dec-23	25-Feb-24	02-May-26	30-Jun-26	856	2
KTD.KD.2200	Prepare/submit Asset Data Deliverables for Section 12	60	28-Jul-24	25-Sep-24	02-May-26	30-Jun-26	643	2
KTD.KD.2210	Prepare/submit Asset Data Deliverables for Section 13	60	02-Nov-24	31-Dec-24	02-May-26	30-Jun-26	546	2
VALUE-ENGINEERING SHCEME DROP-OFF SCHEDULE		532	31-Jul-20	09-Nov-22	31-Jul-20	09-Nov-22	0	2
KTD.VE.1000	Review/prepare/submit VE scheme for permanent concrete segment for Pedestrian Subway SB-01	488	31-Jul-20	30-Nov-21	31-Jul-20	30-Nov-21	0	2
KTD.VE.1010	Review/prepare/submit VE scheme for alternative alignment for Pedestrian Subway SB-01	488	31-Jul-20	30-Nov-21	31-Jul-20	30-Nov-21	0	2
KTD.VE.1020	Review/prepare/submit VE scheme for piling arrangement for new pier of existing Bridge K73	671	31-Jul-20	01-Jun-22	31-Jul-20	01-Jun-22	0	2
KTD.VE.1030	Review/prepare/submit VE scheme for piling arrangement for abutment of Slip Road S14	832	31-Jul-20	09-Nov-22	31-Jul-20	09-Nov-22	0	2
KTD.VE.1050	Review/prepare/submit VE scheme for piling arrangement for lift shaft and staircase of LW-02	631	31-Jul-20	22-Apr-22	31-Jul-20	22-Apr-22	0	2
CIVIL AND STRUCTURAL WORKS		1321	22-Jul-20	31-Dec-24	01-Aug-20	30-Jun-26	441	
GENERAL AND PRELIMINARY WORKS		1313	31-Jul-20	31-Dec-24	01-Aug-20	30-Jun-26	441	
KTD.GW.1000	General and preliminary works (inclu site formation, site set-up, access, temp drain. sys, ground investigation ar	1200	31-Jul-20	15-Aug-24	15-Jun-21	30-Jun-25	257	1
KTD.GW.1010	Construction, maintenance and removal of ICA, EVA, Crowd Dispersal Route and other temporary access	1313	31-Jul-20	31-Dec-24	22-Jan-21	30-Jun-25	144	1
KTD.GW.1020	Prepare/submit site arrangement plan (inclu hoarding, project sign board and security arrangement)	13	31-Jul-20	12-Aug-20	01-Aug-20	13-Aug-20	1	2
KTD.GW.1030	Design/submit/approval site layout plan and Contractor's site accommodation using MiC method	44	13-Aug-20	25-Sep-20	14-Aug-20	26-Sep-20	1	2



Project Baseline Bar ◆ Milestone
Remaining Work Summary
Critical Remaining Work

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
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Date	Revision	Checked	Approved
13-Oct-23	First Draft		

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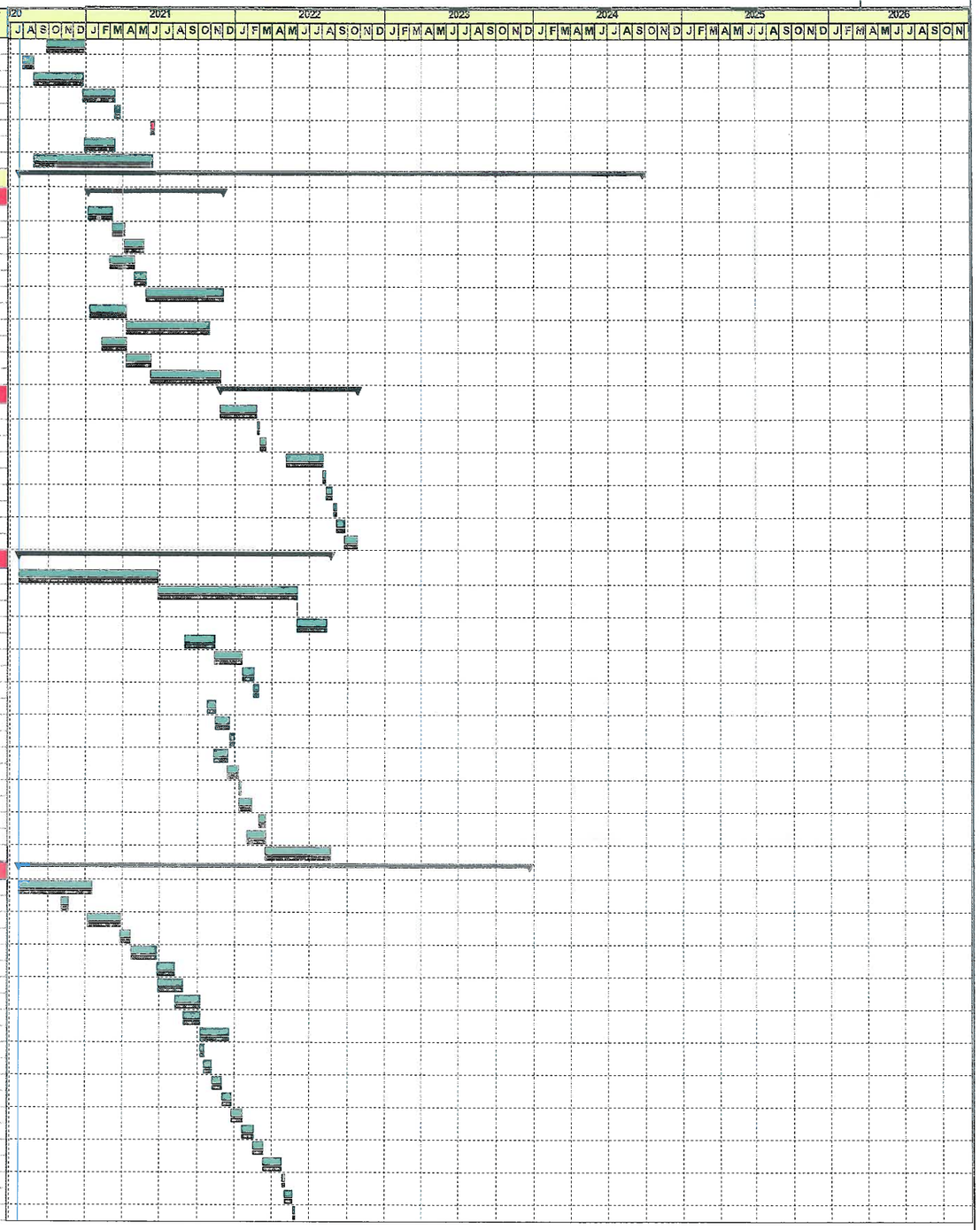
Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.GW.1040	Construct foundation and erect Contractor's site accommodation	76	26-Sep-20	29-Dec-20	27-Mar-26	30-Jun-26	1629	1
KTD.GW.1050	Tree Survey	27	31-Jul-20	26-Aug-20	01-Aug-20	27-Aug-20	1	2
KTD.GW.1055	Initial tree survey report and tree felling application	120	27-Aug-20	24-Dec-20	10-Nov-20	09-Mar-21	75	2
KTD.GW.1056	Obtain tree felling permit from relevant authorities	77	25-Dec-20	11-Mar-21	10-Mar-21	25-May-21	75	2
KTD.GW.1060	Tree felling works at Sa Po Road to facilitate construction of road diversion (Stage 1, 9 nos.)	12	12-Mar-21	25-Mar-21	26-May-21	08-Jun-21	58	1
KTD.GW.1061	Tree felling works at Sa Po Road to facilitate existing utilities diversion works (5 nos.)	7	09-Jun-21	17-Jun-21	09-Jun-21	17-Jun-21	0	1
KTD.GW.1065	Tree felling works at Kai Tak Area	60	28-Dec-20	11-Mar-21	18-Apr-26	30-Jun-26	1571	1
KTD.GW.1070	Protection to retained trees and tree transplating works	234	27-Aug-20	12-Jun-21	13-Sep-25	30-Jun-26	1497	1
CONSTRUCTION OF PEDESTRIAN SUBWAY SB-01		1242	22-Jul-20	25-Sep-24	03-Aug-20	25-Sep-24	0	
DESIGN/STATUTORY SUBMISSIONS FOR PEDESTRIAN SUBWAY SB-01		330	06-Jan-21	01-Dec-21	30-May-21	10-Jul-22	221	2
KTD.SB.SUBM.1000	Prepare ELS Design for Launching Shaft @Kai Tak Area	60	06-Jan-21	06-Mar-21	30-May-21	28-Jul-21	144	2
KTD.SB.SUBM.1010	Review/comment ELS Design for Launching Shaft @Kai Tak Area and obtain ICE certificate	30	07-Mar-21	05-Apr-21	29-Jul-21	27-Aug-21	144	2
KTD.SB.SUBM.1020	Consult/obtain approval of ELS Design for Launching Shaft @Kai Tak Area by AECOM	45	06-Apr-21	20-May-21	26-Aug-21	11-Oct-21	144	2
KTD.SB.SUBM.1030	Prepare ELS Design for Retreiving Shaft @Sa Po Road	60	28-Feb-21	28-Apr-21	23-Aug-21	21-Oct-21	176	2
KTD.SB.SUBM.1040	Review/comment ELS Design for Retreiving Shaft @Sa Po Road and obtain ICE certificate	30	29-Apr-21	28-May-21	22-Oct-21	20-Nov-21	176	2
KTD.SB.SUBM.1050	Consult/obtain approval of ELS Design for Retreiving Shaft @Sa Po Road by AECOM	187	29-May-21	01-Dec-21	21-Nov-21	26-May-22	176	2
KTD.SB.SUBM.1060	Prepare/submit GEO Submission for trenchless tunnel by RTBM to GEO/CEDD	90	10-Jan-21	09-Apr-21	21-Sep-21	19-Dec-21	254	2
KTD.SB.SUBM.1070	Consult/obtain approval of GEO Submission for trenchless tunnel by RTBM by GEO/CEDD	203	10-Apr-21	29-Oct-21	20-Dec-21	10-Jul-22	254	2
KTD.SB.SUBM.1080	Prepare/submit HyD B&S Submission for precast lining and re-alignment to HyD B&S	60	09-Feb-21	09-Apr-21	09-Jul-21	06-Sep-21	150	2
KTD.SB.SUBM.1090	Consult/obtain AIP of HyD B&S Submission for precast lining and re-alignment by HyD B&S	60	10-Apr-21	08-Jun-21	07-Sep-21	05-Nov-21	150	2
KTD.SB.SUBM.1100	Consult/obtain DDA of HyD B&S Submission for precast lining and re-alignment by HyD B&S	169	09-Jun-21	24-Nov-21	06-Nov-21	23-Apr-22	150	2
APPLICATION FOR WORKING VISA OF MAINLAND WORKERS FOR PEDESTRIAN SUBWAY SB-01		334	25-Nov-21	24-Oct-22	03-Jan-22	26-Oct-22	2	2
KTD.SB.VISA.1000	Prepare/submit/approval working visa for segment construction workers	90	25-Nov-21	22-Feb-22	03-Jan-22	02-Apr-22	39	2
KTD.SB.VISA.1010	Travel from Mainland to HK for segment construction workers	7	23-Feb-22	01-Mar-22	03-Apr-22	09-Apr-22	39	2
KTD.SB.VISA.1020	Prepare/submit/approval for HKID and obtain Green Card/Blue Card for segment construction workers	14	02-Mar-22	15-Mar-22	10-Apr-22	23-Apr-22	39	2
KTD.SB.VISA.1030	Prepare/submit/approval for Working Visa for tunneling construction workers	90	05-May-22	02-Aug-22	07-May-22	04-Aug-22	2	2
KTD.SB.VISA.1040	Travel from Mainland to HK for tunneling construction workers	7	03-Aug-22	09-Aug-22	05-Aug-22	11-Aug-22	2	2
KTD.SB.VISA.1050	Prepare/submit/approval for HKID and obtain Green Card/Blue Card for tunneling construction workers	14	10-Aug-22	23-Aug-22	12-Aug-22	25-Aug-22	2	2
KTD.SB.VISA.1060	Obtain confined space certified worker/competent person certificate for tunneling construction workers	7	28-Aug-22	03-Sep-22	30-Aug-22	05-Sep-22	2	2
KTD.SB.VISA.1070	Medical check for Form 3 and 6/receive reports for tunneling construction workers	21	04-Sep-22	24-Sep-22	06-Sep-22	26-Sep-22	2	2
KTD.SB.VISA.1080	Submit/approval for Form 3 and 6 by Labour Department for tunneling construction workers	30	25-Sep-22	24-Oct-22	27-Sep-22	26-Oct-22	2	2
PROCUREMENT, MANUFACTURING AND DELIVERY OF RTBM & FABRICATION OF PRECAST UNITS		619	22-Jul-20	22-Aug-22	06-Aug-20	30-Sep-22	33	
KTD.SB.PDF.1000	Design RTBM and associated equipment (cradle, back thrust wall and etc.)	339	22-Jul-20	25-Jun-21	06-Aug-20	10-Jul-21	15	2
KTD.SB.PDF.1010	Procurement and manufacture RTBM and associated equipment	340	26-Jun-21	31-May-22	11-Jul-21	15-Jun-22	15	2
KTD.SB.PDF.1011	Conduct FAT for RTBM and associated equipment	1	01-Jun-22	01-Jun-22	16-Jun-22	16-Jun-22	15	2
KTD.SB.PDF.1020	Complete RTBM manufacturing, packing and deliver to HK	70	02-Jun-22	10-Aug-22	17-Jun-22	25-Aug-22	15	2
KTD.SB.PDF.1030	Design/submit/approve steel mould for precast segment construction	73	01-Sep-21	12-Nov-21	06-Oct-21	17-Dec-21	35	2
KTD.SB.PDF.1040	Procurement and manufacture steel mould and associated equipment	67	13-Nov-21	18-Jan-22	18-Dec-21	22-Feb-22	35	2
KTD.SB.PDF.1050	Deliver steel mould and associated equipment to HK	28	19-Jan-22	15-Feb-22	23-Feb-22	22-Mar-22	35	2
KTD.SB.PDF.1060	Assemble steel mould on casting yard	10	16-Feb-22	28-Feb-22	23-Mar-22	02-Apr-22	30	1
KTD.SB.PDF.1070	Design/submit/approve gantry and associated equipment	20	26-Oct-21	14-Nov-21	29-Dec-21	17-Jan-22	64	2
KTD.SB.PDF.1080	Procurement and manufacture gantry and associated equipment	34	15-Nov-21	18-Dec-21	18-Jan-22	20-Feb-22	64	2
KTD.SB.PDF.1090	Pack/deliver gantry and associated equipment to HK	11	19-Dec-21	29-Dec-21	21-Feb-22	03-Mar-22	64	2
KTD.SB.PDF.1100	Excavate/compact/cast gantry footing at Casting Yard	34	10-Nov-21	13-Dec-21	05-Jan-22	08-Feb-22	57	2
KTD.SB.PDF.1110	Install gantry rail to footing and construct hard pavement for Casting Yard	20	14-Dec-21	08-Jan-22	09-Feb-22	03-Mar-22	43	1
KTD.SB.PDF.1120	Backfill and compact rockfill layer for segment storage at Casting Yard	6	10-Jan-22	15-Jan-22	14-Apr-22	23-Apr-22	77	1
KTD.SB.PDF.1130	Install gantry structure and associated equipment at Casting Yard and SAT	26	10-Jan-22	11-Feb-22	04-Mar-22	02-Apr-22	43	1
KTD.SB.PDF.1140	Cut-and-bend rebar delivery and trial fix for precast segment construction	14	28-Feb-22	15-Mar-22	04-Apr-22	23-Apr-22	30	1
KTD.SB.PDF.1150	Submit/approval for CNP for working on Sunday and Holiday for casting precast segments	45	30-Jan-22	15-Mar-22	10-Mar-22	23-Apr-22	39	2
KTD.SB.PDF.1160	Construct precast segments (49nos, 3days/unit, Working on Sunday & Holiday)	160	16-Mar-22	22-Aug-22	24-Apr-22	30-Sep-22	39	2
PEDESTRIAN SUBWAY SB-01 AT KAI TAK AREA		1016	22-Jul-20	20-Dec-23	03-Aug-20	25-Sep-24	226	
KTD.SB.1000	Liaison/coordinate with utility and service undertakings on diversion works (including CLP, DCS work and etc.)	180	22-Jul-20	17-Jan-21	03-Aug-20	29-Jan-21	12	2
KTD.SB.1010	Conduct seismic geophysical survey for PERE (Night time, lane-by-lane, 11 night shift) and Kai Tak Area (Day tir	15	04-Nov-20	20-Nov-20	26-Jul-21	11-Aug-21	212	1
KTD.SB.1020	Expose and demolish existing foundation caps and locating existing piles (1 team) and formating working area	65	06-Jan-21	26-Mar-21	11-Jan-21	31-Mar-21	4	1
KTD.SB.1030	Formate working area and install protection to 132kV and Rising Main	18	27-Mar-21	21-Apr-21	01-Apr-21	26-Apr-21	4	1
KTD.SB.1040	Remove existing piles (37 nos, using DN2500 x 27 nos, 1 team)	52	22-Apr-21	24-Jun-21	27-Apr-21	29-Jun-21	4	1
KTD.SB.1050	Compact and formate the pile removal area for existing haul road diversion and install instrumentation	36	25-Jun-21	06-Aug-21	30-Jun-21	11-Aug-21	4	1
KTD.SB.1060	Conduct diversion of existing 11kV cables by CLP	52	28-Jun-21	27-Aug-21	30-Jun-21	30-Aug-21	2	1
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
KTD.SB.1075	Install sheetpile (FSP V, remaining at Line B-A and C-D and Line B-C, 30mH, 1190m2, Team B)	34	28-Aug-21	08-Oct-21	31-Aug-21	11-Oct-21	2	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
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
KTD.SB.1110	Install Strut 2 and Excavate (Strut 2@+3.0mPD to Strut 3@+0.0mPD, 1300m3 exca)	20	08-Nov-21	30-Nov-21	10-Nov-21	02-Dec-21	2	1
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	03-Dec-21	28-Dec-21	2	1
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
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
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
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
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
KTD.SB.1180	Construct RC structure of wall 1 (up to -5.0mPD, 250m3 conc)	15	04-May-22	21-May-22	06-May-22	24-May-22	2	1
KTD.SB.1190	Backfill and remove strut 5@-4.5mPD	6	23-May-22	28-May-22	25-May-22	31-May-22	2	1



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Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
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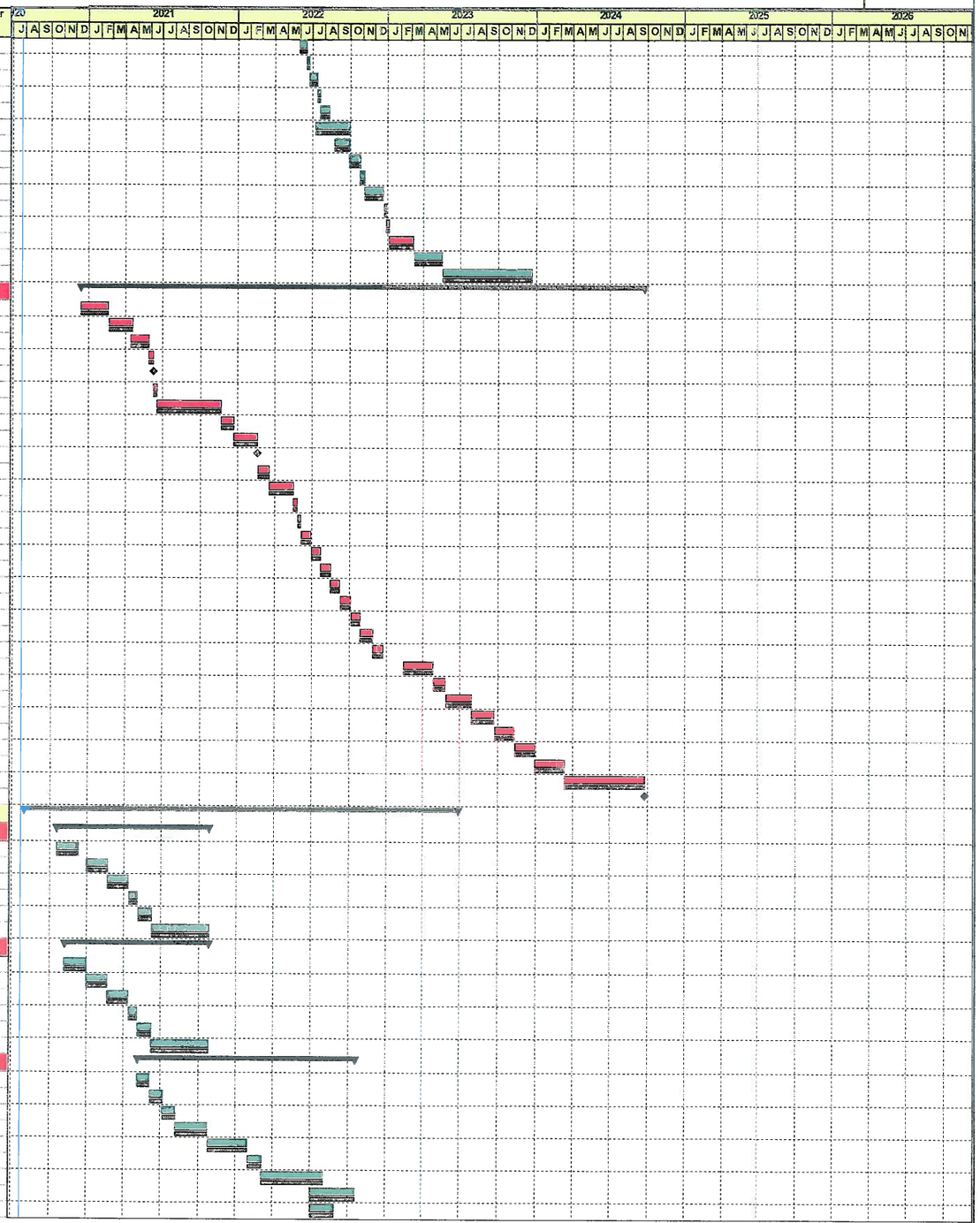
Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.SB.1200	Construct RC structure of wall 2 (up to -2.5mPD, 200m3 conc)	15	30-May-22	16-Jun-22	01-Jun-22	18-Jun-22	2	1
KTD.SB.1210	Backfill and remove strut 4@-2.0mPD	6	17-Jun-22	23-Jun-22	20-Jun-22	25-Jun-22	2	1
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
KTD.SB.1240	Construct RC structure of wall and top slab with opening for RTBM Launching Works (up to 1.8mPD, 450m3 cc	20	20-Jul-22	11-Aug-22	22-Jul-22	13-Aug-22	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	11-Jul-22	30-Sep-22	2	1
KTD.SB.1260	Assembly RTBM and associated equipment (install cradle, back thrust wall pad, RTBM and associates) and SA	30	24-Aug-22	28-Sep-22	26-Aug-22	30-Sep-22	2	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
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
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
KTD.SB.1300	RTBM Breakthrough into Retrieving Shaft @Sa Po Road	5	23-Dec-22	27-Dec-22	23-Dec-22	27-Dec-22	0	2
KTD.SB.1310	Replacement grout along trenchless tunnel area	5	28-Dec-22	03-Jan-23	28-Dec-22	03-Jan-23	0	1
KTD.SB.1320	Remove RTBM and associated equipment (cradle, jacks, back thrust wall pad and etc.)	50	04-Jan-23	04-Mar-23	04-Jan-23	04-Mar-23	0	1
KTD.SB.1330	Construct remaining RC structure of top slab and lift shaft and backfill	58	06-Mar-23	17-May-23	07-Dec-23	17-Feb-24	226	1
KTD.SB.1340	Install steelwork, ABWF, other facilities, lift and other E&M works	180	18-May-23	20-Dec-23	19-Feb-24	25-Sep-24	226	1
PEDESTRIAN SUBWAY SB-01 AT SA PO ROAD		1121	14-Dec-20	25-Sep-24	14-Dec-20	25-Sep-24	0	
KTD.SB.2000	Trial pit/trench excavation to identify existing underground utilities and services and ground investigation works	52	14-Dec-20	18-Feb-21	14-Dec-20	18-Feb-21	0	1
KTD.SB.2010	Construct road diversion for Sa Po Road (Stage 1, incl carriageway and footpath)	46	19-Feb-21	17-Apr-21	19-Feb-21	17-Apr-21	0	1
KTD.SB.2011	Exposed existing shallow covered watermain and conducting diversion works (NCE032/CE025)	44	15-Apr-21	28-May-21	15-Apr-21	28-May-21	0	2
KTD.SB.2012	Construction of remaining works after watermain diversion works for implement road diversion of Sa Po Road (	11	29-May-21	08-Jun-21	29-May-21	08-Jun-21	0	2
KTD.SB.2020	Implement TTA for Sa Po Road diversion (Stage 1)	0		08-Jun-21		08-Jun-21	0	1
KTD.SB.2030	Site clearance and excavation for trial pits to identify existing UU along Sa Po Road	7	09-Jun-21	17-Jun-21	09-Jun-21	17-Jun-21	0	1
KTD.SB.2040	Diversion of existing DN1800 stormwater drain pipe and underground utilities/services	130	18-Jun-21	20-Nov-21	18-Jun-21	20-Nov-21	0	1
KTD.SB.2050	Install sheetpile for Retrieving Shaft (Stage 1, FSP V, 88nos, 24m-H, 1 team)	26	22-Nov-21	21-Dec-21	22-Nov-21	21-Dec-21	0	1
KTD.SB.2060	Construct road diversion for Sa Po Road (Stage 2, incl traffic deck, carriageway and footpath)	45	22-Dec-21	18-Feb-22	22-Dec-21	18-Feb-22	0	1
KTD.SB.2070	Implement TTA for Sa Po Road diversion (Stage 2)	0		18-Feb-22		18-Feb-22	0	1
KTD.SB.2080	Install sheetpile for Retrieving Shaft (Stage 2A, FSP V, 46 nos, 24m-H, 1 team)	23	19-Feb-22	17-Mar-22	19-Feb-22	17-Mar-22	0	1
KTD.SB.2090	Diversion to existing underground utilities/services for remaining sheetpil installation	45	18-Mar-22	16-May-22	18-Mar-22	16-May-22	0	1
KTD.SB.2100	Install remaining sheetpile for Retrieving Shaft (Stage 2B, FSP V, 20 nos, 24m-H, 1 team)	9	17-May-22	26-May-22	17-May-22	26-May-22	0	1
KTD.SB.2110	Excavate and install ELS (GL@+6.0mPD to Strut 1@+5.0mPD, 270m3 exca)	7	27-May-22	04-Jun-22	27-May-22	04-Jun-22	0	1
KTD.SB.2120	Excavate and install ELS (Strut 1@+5.0mPD to Strut 2@+2.0mPD, 810m3 exca)	20	06-Jun-22	28-Jun-22	06-Jun-22	28-Jun-22	0	1
KTD.SB.2130	Excavate and install ELS (Strut 2@+2.0mPD to Strut 3@-0.5mPD, 675m3 exca)	20	29-Jun-22	22-Jul-22	29-Jun-22	22-Jul-22	0	1
KTD.SB.2140	Excavate and install ELS (Strut 3@-0.5mPD to Strut 4@-3.0mPD, 675m3 exca)	20	23-Jul-22	15-Aug-22	23-Jul-22	15-Aug-22	0	1
KTD.SB.2150	Excavate and install ELS (Strut 4@-3.0mPD to Strut 5@-5.5mPD, 675m3 exca)	20	16-Aug-22	07-Sep-22	16-Aug-22	07-Sep-22	0	1
KTD.SB.2160	Excavate and install ELS (Strut 5@-5.5mPD to Strut 6@-8.3mPD, 756m3 exca)	20	08-Sep-22	03-Oct-22	08-Sep-22	03-Oct-22	0	1
KTD.SB.2170	Excavate and install ELS (Strut 6@-8.3mPD to FEL@-10.3mPD, 540m3 exca)	20	05-Oct-22	27-Oct-22	05-Oct-22	27-Oct-22	0	1
KTD.SB.2180	Ground improvement works for breakthrough (Horizontal) and post-coring tests	26	28-Oct-22	26-Nov-22	28-Oct-22	26-Nov-22	0	1
KTD.SB.2190	Construct tunnel portal for RTBM breakthrough	22	28-Nov-22	22-Dec-22	28-Nov-22	22-Dec-22	0	1
KTD.SB.2200	Remove tunnel portal and RTBM shield for RC structure connection works	50	10-Feb-23	25-Apr-23	10-Feb-23	25-Apr-23	0	1
KTD.SB.2210	Construct RC structure of base slab (xxx m3 conc)	25	26-Apr-23	25-May-23	26-Apr-23	25-May-23	0	1
KTD.SB.2220	Construct RC structure of walls (xxx m3 conc)	52	27-May-23	26-Jul-23	27-May-23	28-Jul-23	0	1
KTD.SB.2230	Construct RC structure of roof slab and lift shaft (xxx m3 conc)	48	29-Jul-23	22-Sep-23	29-Jul-23	22-Sep-23	0	1
KTD.SB.2240	Backfill Retrieving Shaft up to ground level	39	23-Sep-23	10-Nov-23	23-Sep-23	10-Nov-23	0	1
KTD.SB.2250	Install ELS and excavate for remaining staircase and escalator trough structure	40	11-Nov-23	29-Dec-23	11-Nov-23	29-Dec-23	0	1
KTD.SB.2260	Construct RC structure of remaining staircase and escalator trough structure and backfill	60	30-Dec-23	12-Mar-24	30-Dec-23	12-Mar-24	0	1
KTD.SB.2270	Install steelwork, ABWF, other facilities and other E&M works	160	13-Mar-24	25-Sep-24	13-Mar-24	25-Sep-24	0	1
KTD.SB.2280	Planned Completion of Pedestrian Subway SB-01 (Related to Section 12)	0		25-Sep-24		25-Sep-24	0	2
CONSTRUCTION OF ELEVATED WALKWAY LW-02		861	31-Jul-20	27-Jun-23	08-Feb-21	26-Sep-23	77	
PIER 9		300	20-Oct-20	25-Oct-21	08-Feb-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
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
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
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
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
PIER 10		285	07-Nov-20	25-Oct-21	09-Feb-21	26-Jan-22	77	
KTD.LW.1060	Pre-drilling works (2 nos, 1 rig)	44	07-Nov-20	30-Dec-20	09-Feb-21	08-Apr-21	77	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	77	1
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	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
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
FOOTBRIDGE (PIER 9 TO PIER 10)		433	05-May-21	18-Oct-22	09-Aug-21	26-Sep-23	281	
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	05-May-21	04-Jun-21	09-Aug-21	07-Sep-21	79	1
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
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
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
KTD.LW.1170	Prestressing works and remaining RC works	26	31-Jan-22	04-Mar-22	13-Jan-23	14-Feb-23	281	1
KTD.LW.1173	Install steel roof structure and associated steel facilities from Pier 9 to Pier 10	120	05-Mar-22	01-Aug-22	15-Feb-23	13-Jul-23	281	1
KTD.LW.1176	Install E&M works, testing and commissioning from Pier 9 to Pier 10	90	02-Jul-22	18-Oct-22	12-Jun-23	26-Sep-23	281	1
KTD.LW.1179	Construct landscaping, ABWF works and other facilities from Pier 9 to Pier 10	50	02-Jul-22	29-Aug-22	31-Jul-23	26-Sep-23	321	1



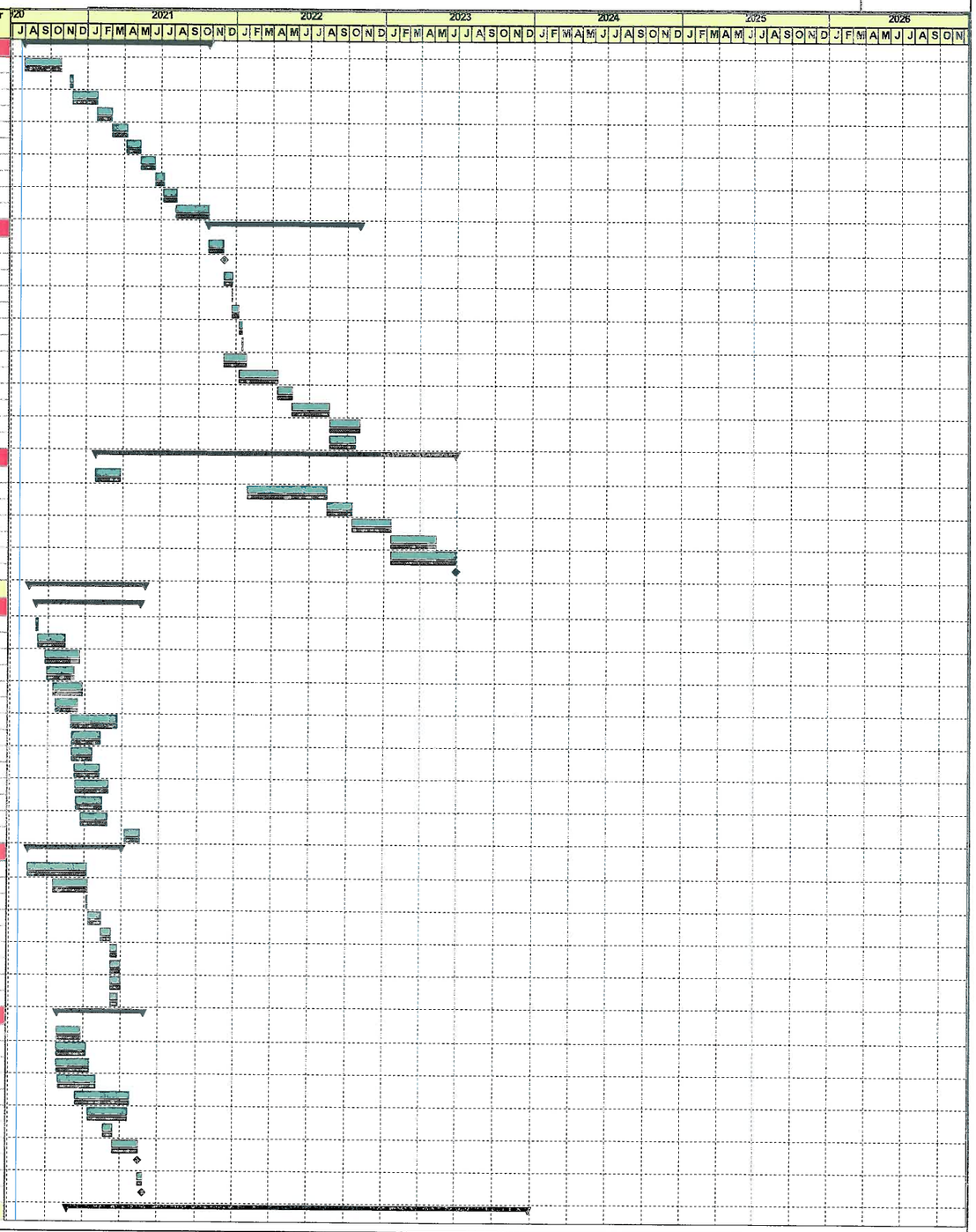
Project Baseline Bar
Remaining Work
Critical Remaining Work
Milestone
Summary

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
(Page 4 of 11)

Date	Revision	Checked	Approved
13-Oct-23	First Draft		

WP Rev-39

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
PIER 11		367	31-Jul-20	25-Oct-21	29-Jul-21	22-Sep-22	270	
KTD.LW.1180	Liaison/coordinate with adjacent project for TTA arrangement	90	31-Jul-20	28-Oct-20	29-Jul-21	26-Oct-21	363	2
KTD.LW.1190	Implementation of TTA	7	18-Nov-20	25-Nov-20	19-Oct-21	26-Oct-21	270	1
KTD.LW.1200	Pre-drilling works (4 nos, 1 rig)	48	26-Nov-20	23-Jan-21	27-Oct-21	21-Dec-21	270	1
KTD.LW.1210	Piling works for bored pile (PC11-A1, 1800dia x 78m)	28	25-Jan-21	01-Mar-21	22-Dec-21	26-Jan-22	270	1
KTD.LW.1220	Piling works for bored pile (PC11-A4, 1800dia x 78m)	28	02-Mar-21	07-Apr-21	27-Jan-22	03-Mar-22	270	1
KTD.LW.1230	Piling works for bored pile (PC11-A2, 1800dia x 78m)	28	08-Apr-21	11-May-21	04-Mar-22	06-Apr-22	270	1
KTD.LW.1240	Piling works for bored pile (PC11-A3, 1800dia x 78m)	28	12-May-21	15-Jun-21	07-Apr-22	14-May-22	270	1
KTD.LW.1250	Testing for completed bored piles (Sonic Test & Interface Core) and site clearance	18	16-Jun-21	07-Jul-21	16-May-22	06-Jun-22	270	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	07-Jun-22	07-Jul-22	270	1
KTD.LW.1270	Construction of RC structure (pile cap & pier column) (138m3, 1 team)	65	07-Aug-21	25-Oct-21	08-Jul-22	22-Sep-22	270	1
FOOTBRIDGE (PIER 10 TO PIER 12)		301	26-Oct-21	31-Oct-22	23-Sep-22	26-Sep-23	270	
KTD.LW.1280	Remove ELS and formating roundabout for portal and falsework erection from CH93 to CH138	31	26-Oct-21	30-Nov-21	23-Sep-22	31-Oct-22	270	1
KTD.LW.1281	Implement TTA for erecting portal across carriageway near CH84 to CH93 (Stage 2)	0	01-Dec-21		08-Nov-22		276	1
KTD.LW.1282	Construct and erect portal across carriageway near CH84 to CH93	18	01-Dec-21	21-Dec-21	08-Nov-22	28-Nov-22	276	1
KTD.LW.1283	Implement TTA for erecting portal across carriageway near CH138 to CH147 (Stage 3)	0	22-Dec-21	22-Dec-21	28-Nov-22	28-Nov-22	276	1
KTD.LW.1284	Construct and erect portal across carriageway near CH138 to CH147 (Except secondary beams)	12	22-Dec-21	07-Jan-22	29-Nov-22	12-Dec-22	276	1
KTD.LW.1285	Implement TTA for erecting secondary beams across carriageway near CH138 to CH147 (night time, approx 3 r	6	08-Jan-22	14-Jan-22	13-Dec-22	19-Dec-22	276	1
KTD.LW.1286	Implement TTA for RC bridge structure construction (Stage 4)	3	15-Jan-22	18-Jan-22	20-Dec-22	22-Dec-22	276	1
KTD.LW.1290	Erect falsework and working platform from CH93 to CH138	45	01-Dec-21	25-Jan-22	01-Nov-22	22-Dec-22	270	1
KTD.LW.1300	Construction of RC bridge structure (745m3, 1 teams)	78	08-Jan-22	13-Apr-22	06-Dec-22	11-Mar-23	270	1
KTD.LW.1310	Prestressing works and remaining RC works	26	14-Apr-22	19-May-22	13-Mar-23	15-Apr-23	270	1
KTD.LW.1313	Install steel roof structure and associated steel facilities from Pier 10 to Pier 12	76	20-May-22	18-Aug-22	17-Apr-23	18-Jul-23	270	1
KTD.LW.1316	Install E&M works, testing and commissioning from Pier 10 to Pier 12	60	19-Aug-22	31-Oct-22	19-Jul-23	26-Sep-23	270	1
KTD.LW.1319	Construct landscapiung, ABWF works and other facilities from Pier 10 to Pier 12	52	19-Aug-22	21-Oct-22	28-Jul-23	26-Sep-23	278	1
LIFT TOWER, STAIRCASE, SOFT LANDSCAPING & OTHER WORKS		715	25-Jan-21	27-Jun-23	09-Mar-22	26-Sep-23	77	
KTD.LW.1320	Pre-drilling works (6 nos, 2 rig)	48	25-Jan-21	24-Mar-21	09-Mar-22	10-May-22	330	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
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
KTD.LW.1360	Lift and other E&M installation, testing and commissioning	90	17-Jan-23	09-May-23	12-Jun-23	26-Sep-23	117	1
KTD.LW.1370	Construction of roof, planter, landscape softworks, other facilities and ABWF works for whole walkway	130	17-Jan-23	27-Jun-23	24-Apr-23	26-Sep-23	77	1
KTD.LW.1380	Planned Completion of Landscaped Elevated Walkway LW-02 (Related to Section 1)	0		27-Jun-23		26-Sep-23	91	2
CONSTRUCTION OF BOX CULVERT B1		229	15-Aug-20	26-May-21	24-Oct-20	29-Jul-21	53	
BOX CULVERT B1 (BAY0 CH364 TO BAY11 CH216)		205	02-Sep-20	14-May-21	24-Nov-20	19-Jul-21	53	1
KTD.B1.A.1000	Trial pit excavation to expose the existing box culvert near Bay0 CH364	5	02-Sep-20	07-Sep-20	24-Nov-20	28-Nov-20	68	1
KTD.B1.A.1010	Construction of Bay 0 include ELS/exca/rock fill/RC structure (CH364 to CH350, 14.3m, except roof opening for	53	08-Sep-20	11-Nov-20	30-Nov-20	02-Feb-21	68	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	12-Mar-21	08-Jun-21	135	1
KTD.B1.A.1030	Construction of Bay 2 include ELS/excavation/rock fill/RC structure (CH338 to CH326, 12.2m)	55	29-Sep-20	04-Dec-20	16-Mar-21	25-May-21	135	1
KTD.B1.A.1040	Construction of Bay 3 include ELS/excavation/rock fill/RC structure (CH326 to CH313, 12.2m)	59	15-Oct-20	23-Dec-20	30-Mar-21	12-Jun-21	135	1
KTD.B1.A.1050	Construction of Bay 4 include ELS/excavation/rock fill/RC structure (CH313 to CH301, 12.2m)	45	21-Oct-20	12-Dec-20	20-Apr-21	12-Jun-21	144	1
KTD.B1.A.1060	Construction of Bay 5 include ELS/excavation/rock fill/RC structure (CH301 to CH289, 12.2m)	90	27-Nov-20	18-Mar-21	22-Feb-21	12-Jun-21	68	1
KTD.B1.A.1070	Construction of Bay 6 include ELS/excavation/rock fill/RC structure (CH289 to CH277, 12.2m)	57	30-Nov-20	06-Feb-21	16-Mar-21	27-May-21	85	1
KTD.B1.A.1080	Construction of Bay 7 include ELS/excavation/rock fill/RC structure (CH277 to CH265, 12.2m)	40	30-Nov-20	18-Jan-21	16-Mar-21	06-May-21	85	1
KTD.B1.A.1090	Construction of Bay 8 include ELS/excavation/rock fill/RC structure (CH265 to CH252, 12.2m)	49	07-Dec-20	04-Feb-21	23-Mar-21	25-May-21	85	1
KTD.B1.A.1100	Construction of Bay 9 include ELS/excavation/rock fill/RC structure (CH252 to CH240, 12.2m)	62	10-Dec-20	26-Feb-21	25-Mar-21	12-Jun-21	85	1
KTD.B1.A.1110	Construction of Bay 10 include ELS/excavation/rock fill/RC structure (CH240 to CH228, 12.2m)	50	12-Dec-20	11-Feb-21	31-Mar-21	03-Jun-21	87	1
KTD.B1.A.1120	Construction of Bay 11 include ELS/excavation/rock fill/RC structure (CH228 to CH216, 12.2m)	49	23-Dec-20	24-Feb-21	15-Apr-21	12-Jun-21	87	1
KTD.B1.A.1130	Remove existing bulk wall near Bay 0 CH364 and complete connection at Bay 0	28	10-Apr-21	14-May-21	15-Jun-21	19-Jul-21	53	1
BOX CULVERT B1 (BAY12 CH216 TO BAY15 CH167)		187	15-Aug-20	31-Mar-21	24-Oct-20	12-Jun-21	57	
KTD.B1.A.1140	Submission of method statement/temporary works design to MTRC and relevant authorities	145	15-Aug-20	06-Jan-21	24-Oct-20	17-Mar-21	70	2
KTD.B1.A.1150	Submission and construction of diversion of existing EVA for Bay 12 to Bay 15 works	70	16-Oct-20	09-Jan-21	23-Dec-20	20-Mar-21	57	1
KTD.B1.A.1160	Mobilization of plant/equipment for Bay 12 to Bay 15 sheetpile installation and TAM grouting works	3	07-Jan-21	09-Jan-21	18-Mar-21	20-Mar-21	57	1
KTD.B1.A.1170	Install sheetpile by silent piler and TAM grouting works	27	11-Jan-21	10-Feb-21	22-Mar-21	26-Apr-21	57	1
KTD.B1.A.1180	Excavation and ELS installation for Bay 12 to Bay 15	18	11-Feb-21	08-Mar-21	27-Apr-21	18-May-21	57	1
KTD.B1.A.1190	Construction of Bay 12 include rock fill/RC structure (CH216 to CH204, 12.2m)	13	08-Mar-21	22-Mar-21	29-May-21	12-Jun-21	65	1
KTD.B1.A.1200	Construction of Bay 13 include rock fill/RC structure (CH204 to CH192, 12.2m)	19	08-Mar-21	29-Mar-21	22-May-21	12-Jun-21	59	1
KTD.B1.A.1210	Construction of Bay 14 include rock fill/RC structure (CH192 to CH180, 12.2m)	21	08-Mar-21	31-Mar-21	20-May-21	12-Jun-21	57	1
KTD.B1.A.1220	Construction of Bay 15 include rock fill/RC structure (CH180 to CH167, 12.2m)	18	08-Mar-21	25-Mar-21	26-May-21	12-Jun-21	62	1
BOX CULVERT B1 (BAY16 CH167 TO BAY21 CH86)		170	27-Oct-20	26-May-21	30-Dec-20	29-Jul-21	53	
KTD.B1.A.1230	Construction of Bay 16 include ELS/exca/rock fill/RC structure (CH167 to CH155, 12.2m)	51	27-Oct-20	24-Dec-20	30-Dec-20	03-Mar-21	53	1
KTD.B1.A.1240	Construction of Bay 17 include ELS/exca/rock fill/RC structure (CH155 to CH143, 12.2m)	60	27-Oct-20	07-Jan-21	30-Dec-20	13-Mar-21	53	1
KTD.B1.A.1250	Construction of Bay 18 include ELS/exca/rock fill/RC structure (CH143 to CH131, 12.2m)	66	27-Oct-20	14-Jan-21	30-Dec-20	20-Mar-21	53	1
KTD.B1.A.1260	Construction of Bay 19 include ELS/exca/rock fill/RC structure (CH131 to CH118, 12.2m)	75	02-Nov-20	30-Jan-21	06-Jan-21	10-Apr-21	53	1
KTD.B1.A.1270	Construction of Bay 20 include ELS/exca/rock fill/RC structure (CH118 to CH106, 12.2m)	102	14-Dec-20	22-Apr-21	20-Feb-21	26-Jun-21	53	1
KTD.B1.A.1280	Construction of Bay 21 include ELS/exca/rock fill/RC structure (CH106 to CH94, 12.2m)	75	13-Jan-21	17-Apr-21	19-Mar-21	22-Jun-21	53	1
KTD.B1.A.1290	Install ELS and excavate for expose existing box culvert for connection	20	19-Feb-21	13-Mar-21	27-Apr-21	21-May-21	53	1
KTD.B1.A.1300	Demolish existing box culvert for connection and modification of existing box culvert for connection	48	15-Mar-21	14-May-21	22-May-21	19-Jul-21	53	1
KTD.B1.A.1310	Diversion of existing flow into Box Culvert B1	0		14-May-21		19-Jul-21	53	1
KTD.B1.A.1320	Construction of remaining modification works (incl wall, top slab and bulk wall for abadon existing box culvert)	9	15-May-21	26-May-21	20-Jul-21	29-Jul-21	53	1
KTD.B1.A.1330	Acutal Advanced Completion of Box Culvert B1 (Related to Section 8)	0		26-May-21		29-Jul-21	64	2
MODIFICATION OF EXISTING SUBWAY KS10		916	24-Nov-20	27-Dec-23	24-Nov-20	27-Dec-23	0	



Project Baseline Bar ◆ Milestone
Remaining Work Summary
Critical Remaining Work

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
(Page 5 of 11)

Date	Revision	Checked	Approved
13-Oct-23	First Draft		

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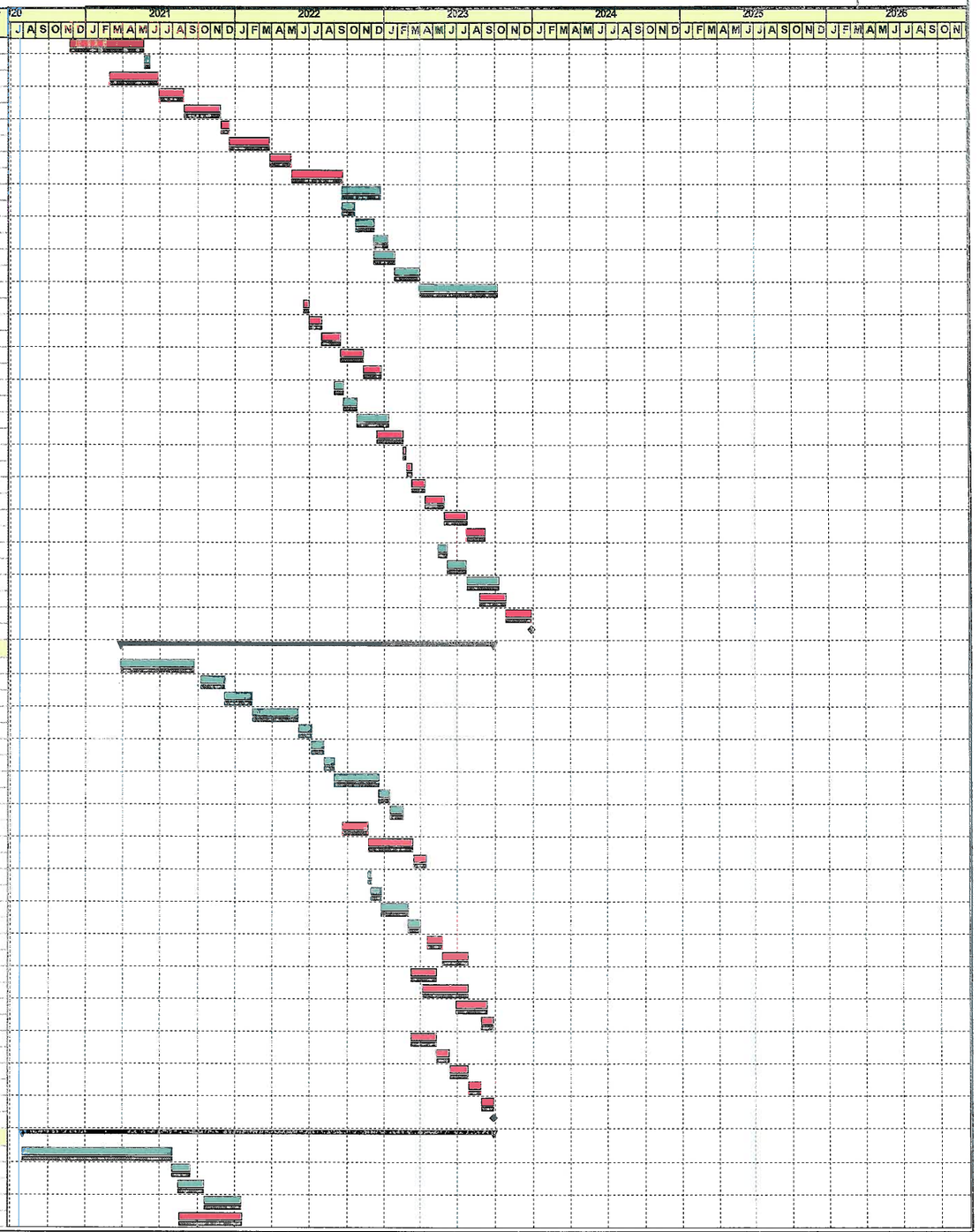
Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.MS.0000	Liaison/coordinate with HyD structure/HyD lighting/EMSD and other utility and service undertakings	180	24-Nov-20	22-May-21	24-Nov-20	22-May-21	0	2
KTD.MS.1010	Pre-drilling works (1 no, 1 rig)	12	24-May-21	05-Jun-21	14-Aug-21	27-Aug-21	69	1
KTD.MS.1014	Liaison/coordinate with CLP for diversion of existing 11kV cables	95	01-Mar-21	26-Jun-21	01-Mar-21	26-Jun-21	0	1
KTD.MS.1015	Construct diversion of existing 11kV cables by CLP	52	28-Jun-21	27-Aug-21	28-Jun-21	27-Aug-21	0	1
KTD.MS.1020	Piling works for pre-bored H-piles (4 nos, 610dia x 75m, 1 rig)	75	28-Aug-21	26-Nov-21	28-Aug-21	26-Nov-21	0	1
KTD.MS.1021	Post-piling works tests (proof-drilling and load test)	18	27-Nov-21	17-Dec-21	27-Nov-21	17-Dec-21	0	1
KTD.MS.1027	Demolition of existing subway structures (inclu. staircase and partial ramp)	78	18-Dec-21	25-Mar-22	18-Dec-21	25-Mar-22	0	1
KTD.MS.1030	Installation of ELS for construction of entrance at Road D1 (77m ELS, 900m3 exca, 1 teams)	39	26-Mar-22	17-May-22	26-Mar-22	17-May-22	0	1
KTD.MS.1040	Construction of RC structures (inclu. lift shaft, staircase, pump house and etc.) (365m3, 1 team)	104	18-May-22	19-Sep-22	18-May-22	19-Sep-22	0	1
KTD.MS.1045	Backfilling of ELS to ground level	78	20-Sep-22	21-Dec-22	27-Jan-23	03-May-23	104	1
KTD.MS.1060	Site clearance and demolition of remaining existing furnitures at existing subway under Road D1	26	20-Sep-22	21-Oct-22	08-Dec-22	10-Jan-23	66	1
KTD.MS.1070	Construct roof and floor finishes along existing subway under Road D1	39	22-Oct-22	06-Dec-22	11-Jan-23	27-Feb-23	66	1
KTD.MS.1080	Install VE panels and its sub-frame along existing subway under Road D1	26	07-Dec-22	09-Jan-23	20-May-23	20-Jun-23	131	1
KTD.MS.1090	Install steel frame of shelter for new staircase and lift shaft	39	07-Dec-22	26-Jan-23	28-Feb-23	18-Apr-23	66	1
KTD.MS.1100	Construct wall/floor finishes for new staircase	52	27-Jan-23	28-Mar-23	19-Apr-23	20-Jun-23	66	1
KTD.MS.1110	Lift and other E&M installation, testing and commissioning	156	29-Mar-23	07-Oct-23	21-Jun-23	27-Dec-23	66	1
KTD.MS.2000	Implement TTA (Phase 1) for closing half Ramp 2, existing staircase@TKL Rd and LHS of subway part	12	16-Jun-22	29-Jun-22	16-Jun-22	29-Jun-22	0	1
KTD.MS.2010	Demolition of existing wall tiles at staircases, floor finishes and furnitures, incl handrail/guardrail/lighings	26	30-Jun-22	30-Jul-22	30-Jun-22	30-Jul-22	0	1
KTD.MS.2020	Construct wall/floor finishes for half Ramp 2 and existing staircase@TKL Rd	39	01-Aug-22	15-Sep-22	01-Aug-22	15-Sep-22	0	1
KTD.MS.2030	Construct roof and floor finishes along LHS of subway part	45	16-Sep-22	09-Nov-22	16-Sep-22	09-Nov-22	0	1
KTD.MS.2040	Install VE panels and its sub-frame along LHS of subway part	39	10-Nov-22	24-Dec-22	10-Nov-22	24-Dec-22	0	1
KTD.MS.2050	Advance works for installing steel shelter for existing staircase@TKL Rd	18	31-Aug-22	21-Sep-22	13-Oct-22	02-Nov-22	34	1
KTD.MS.2060	Implement TTA for lift and install main steel frame of shelter for existing staircase@TKL Rd (Nightwork maybe re	26	22-Sep-22	24-Oct-22	03-Nov-22	02-Dec-22	34	1
KTD.MS.2070	Install remaining steel members, glass balustrade, shelter roof top and ancillary facilities	65	25-Oct-22	11-Jan-23	03-Dec-22	22-Feb-23	34	1
KTD.MS.2080	Install partial E&M works inclu lighting and drainage system and steel light trough for LHS subway part	52	12-Dec-22	15-Feb-23	12-Dec-22	15-Feb-23	0	1
KTD.MS.2090	Site clearance for open the completed part to public	8	16-Feb-23	22-Feb-23	16-Feb-23	22-Feb-23	0	1
KTD.MS.2100	Implement TTA (Phase 2) for closing 2nd half Ramp 2, full Ramp 1 and RHS of subway part	12	23-Feb-23	08-Mar-23	23-Feb-23	08-Mar-23	0	1
KTD.MS.2110	Demolition of existing wall tiles at staircases, floor finishes and furnitures, incl handrail/guardrail/lightings	26	09-Mar-23	12-Apr-23	09-Mar-23	12-Apr-23	0	1
KTD.MS.2120	Construct wall/floor finishes for 2nd half Ramp 2 and full Ramp 1	39	13-Apr-23	30-May-23	13-Apr-23	30-May-23	0	1
KTD.MS.2130	Construct roof and floor finishes along RHS of subway part	45	31-May-23	24-Jul-23	31-May-23	24-Jul-23	0	1
KTD.MS.2140	Install VE panels and its sub-frame along RHS of subway part	39	25-Jul-23	07-Sep-23	25-Jul-23	07-Sep-23	0	1
KTD.MS.2150	Advance works for installing steel shelters for Ramp 2 and Ramp 1	18	15-May-23	05-Jun-23	02-Aug-23	22-Aug-23	65	1
KTD.MS.2160	Implement TTA for lift and install main steel frame of shelter for Ramp 2 and Ramp 1 (Nightwork maybe require	39	06-Jun-23	22-Jul-23	23-Aug-23	09-Oct-23	65	1
KTD.MS.2170	Install remaining steel members, glass balustrade, shelter roof top and ancillary facilities	65	24-Jul-23	09-Oct-23	10-Oct-23	27-Dec-23	65	1
KTD.MS.2180	Install remaining E&M works inclu lighting and drainage system and steel light trough for RHS subway part	52	25-Aug-23	27-Oct-23	25-Aug-23	27-Oct-23	0	1
KTD.MS.9000	Advanced Completion of modification of existing Subway KS10	61	28-Oct-23	27-Dec-23	28-Oct-23	27-Dec-23	0	2
KTD.MS.9999	Planned Completion of modification of existing Subway KS10 (Related to Section 3)	0		27-Dec-23		27-Dec-23	0	2
CONSTRUCTION OF DISTRICT COOLING SYSTEM WORKS		742	27-Mar-21	26-Sep-23	19-Jul-21	26-Sep-23	0	
KTD.DCS.1000	Liaison/coordinate with utility and service undertakings on connection works of DCS works	180	27-Mar-21	22-Sep-21	19-Jul-21	14-Jan-22	114	2
KTD.DCS.1010	Allow time frame for CLP new 132kV cable laying works at Road L9 (Refer to Programme provided by CLP on	48	11-Oct-21	06-Dec-21	15-Jan-22	15-Mar-22	79	1
KTD.DCS.1020	Install ELS and excavate from SV-S-2A5B to CH280	52	07-Dec-21	11-Feb-22	16-Mar-22	21-May-22	79	1
KTD.DCS.1030	Construct chamber and install pipe&fitting of SV-S-2A5B	90	12-Feb-22	04-Jun-22	23-May-22	05-Sep-22	79	1
KTD.DCS.1040	Install pipeline from SV-S-2A5B to CH280 (52mL, 14 joints)	26	06-Jun-22	06-Jul-22	07-Sep-22	10-Oct-22	79	1
KTD.DCS.1050	Backfilling for trench from SV-S-2A5B to CH280	26	07-Jul-22	05-Aug-22	11-Oct-22	09-Nov-22	79	1
KTD.DCS.1060	Install ELS and excavate from CH310 to SV-S-2A10/CH334	21	05-Aug-22	30-Aug-22	10-Nov-22	03-Dec-22	79	1
KTD.DCS.1070	Construct chamber and install pipe&fitting of SV-S-2A10	90	31-Aug-22	16-Dec-22	05-Dec-22	24-Mar-23	79	1
KTD.DCS.1080	Backfilling for trench from CH310 to SV-S-2A10	21	17-Dec-22	13-Jan-23	25-Mar-23	22-Apr-23	79	1
KTD.DCS.1090	Construct ducting and drawpits from SV-S-2A5B/SV-S-2A10 to CH280	28	14-Jan-23	15-Feb-23	24-Apr-23	24-May-23	79	1
KTD.DCS.1100	Install ELS and excavate from SV-S-2A5A/CH190 to CH220	52	20-Sep-22	21-Nov-22	20-Sep-22	21-Nov-22	0	1
KTD.DCS.1110	Construct chamber and install pipe&fitting of SV-S-2A5A	90	22-Nov-22	11-Mar-23	22-Nov-22	11-Mar-23	0	1
KTD.DCS.1120	Install pipeline from SV-S-2A5A to CH220	26	13-Mar-23	15-Apr-23	13-Mar-23	15-Apr-23	0	1
KTD.DCS.1130	Implementation of TTA for existing roundabout at Olympic Avenue	7	22-Nov-22	28-Nov-22	03-Dec-22	10-Dec-22	10	1
KTD.DCS.1140	Site clearance, cable detection and trial pit excavation at existing public road at Olympic Avenue	21	30-Nov-22	23-Dec-22	12-Dec-22	07-Jan-23	10	1
KTD.DCS.1150	Install ELS and excavate from CH220 to CH280	52	24-Dec-22	28-Feb-23	09-Jan-23	11-Mar-23	10	1
KTD.DCS.1160	Install pipeline from CH220 to CH280	26	01-Mar-23	30-Mar-23	13-Mar-23	15-Apr-23	10	1
KTD.DCS.1170	Backfilling for trench from SV-S-2A5A to CH280	32	17-Apr-23	24-May-23	17-Apr-23	24-May-23	0	1
KTD.DCS.1180	Construct ducting and drawpits from CHV-S2A5A to CH100	52	25-May-23	27-Jul-23	25-May-23	27-Jul-23	0	1
KTD.DCS.1190	Install ELS and excavate from SV-S-2A4/CH100 to CH190	52	06-Mar-23	10-May-23	06-Mar-23	10-May-23	0	1
KTD.DCS.1200	Construct chamber and install pipe&fitting of SV-S-2A4	90	06-Apr-23	27-Jul-23	06-Apr-23	27-Jul-23	0	1
KTD.DCS.1210	Install pipeline from SV-S-2A4 to CH190	65	27-Jun-23	11-Sep-23	27-Jun-23	11-Sep-23	0	1
KTD.DCS.1220	Backfilling for trench from SV-S-2A4 to CH190	26	28-Aug-23	26-Sep-23	28-Aug-23	26-Sep-23	0	1
KTD.DCS.1230	Install ELS and excavate from CH0 to CH100	52	06-Mar-23	10-May-23	06-Mar-23	10-May-23	0	1
KTD.DCS.1240	Install pipeline from CH0 to CH100	26	11-May-23	10-Jun-23	11-May-23	10-Jun-23	0	1
KTD.DCS.1250	Backfill for trench from CH0 to CH100	38	12-Jun-23	27-Jul-23	12-Jun-23	27-Jul-23	0	1
KTD.DCS.1260	Construct ducting and drawpits from CH100 to CH0 and existing drawpit	26	28-Jul-23	28-Aug-23	28-Jul-23	28-Aug-23	0	1
KTD.DCS.1270	T&C of the installed DCS pipes before connection to existing DCS system	26	28-Aug-23	26-Sep-23	28-Aug-23	26-Sep-23	0	1
KTD.DCS.1280	Planned Completion of DCS works within Parts 1 and 1A (Related to Section 9)	0		26-Sep-23		26-Sep-23	0	2
RENOVATION OF EXISTING SUBWAYS KS9 AND KS32		938	31-Jul-20	26-Sep-23	03-Nov-20	26-Sep-23	0	
KTD.RS.1000	Liasion with UAP project and relevant departments for possession approval/consent	366	31-Jul-20	31-Jul-21	03-Nov-20	03-Nov-21	95	2
KTD.RS.1001	Prepare/submisstion of TTA for KS9 and KS32	45	01-Aug-21	14-Sep-21	04-Nov-21	18-Dec-21	95	2
KTD.RS.1002	Submission for MS/Shop Drawings/Material for shelter for KS9 and KS32	63	16-Aug-21	17-Oct-21	19-Nov-21	20-Jan-22	95	2
KTD.RS.1003	Off-site fabrication of shelter for KS9 and KS32	90	18-Oct-21	15-Jan-22	13-Mar-22	10-Jun-22	146	2
KTD.RS.1010	Application of XP for renovation works of existing subway KS9 and KS32	153	18-Aug-21	17-Jan-22	18-Aug-21	17-Jan-22	0	2



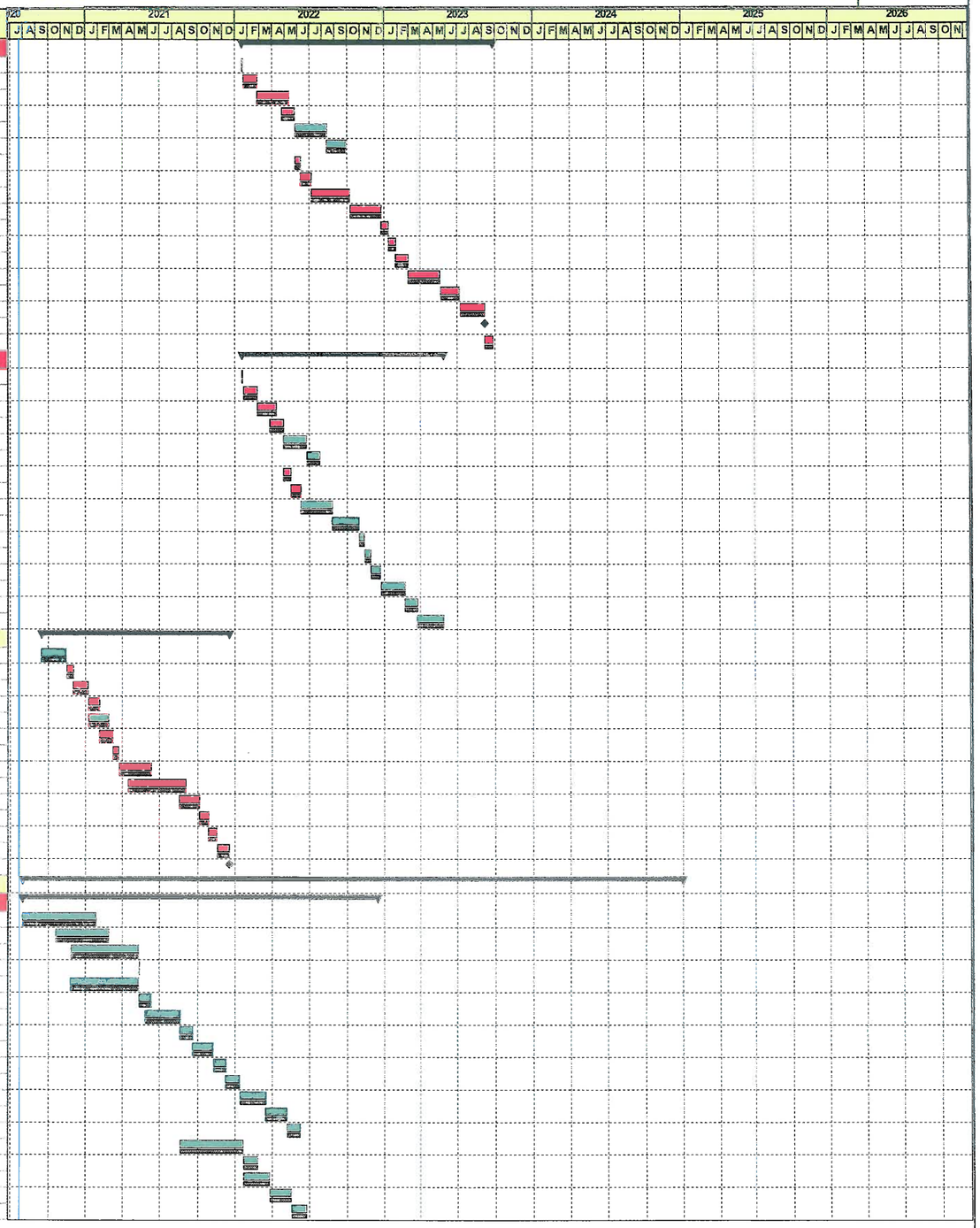
Project Baseline Bar
Remaining Work
Critical Remaining Work
Milestone
Summary

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
(Page 6 of 11)

Date	Revision	Checked	Approved
13-Oct-23	First Draft		

WP Rev-39

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
RENOVATION OF EXISTING SUBWAY KS32		502	18-Jan-22	26-Sep-23	18-Jan-22	26-Sep-23	0	
KTD.KS32.1000	Implement TTA (Phase 1) for closing staircases at both sides and one side of Subway KS32	3	18-Jan-22	20-Jan-22	18-Jan-22	20-Jan-22	0	1
KTD.KS32.1010	Site clearance and erect temporary partition along Subway KS9 for working area	26	21-Jan-22	23-Feb-22	21-Jan-22	23-Feb-22	0	1
KTD.KS32.1020	Demolition of existing wall tiles at both side staircases, floor finishes and furnitures, incl handrail/guardrail/lights	60	24-Feb-22	11-May-22	24-Feb-22	11-May-22	0	1
KTD.KS32.1025	Construct wall and floor finishes at both staircases	26	25-Apr-22	26-May-22	25-Apr-22	26-May-22	0	1
KTD.KS32.1030	Construct roof and floor finishes along LHS of subway part	65	27-May-22	12-Aug-22	06-Jun-22	20-Aug-22	7	1
KTD.KS32.1040	Install VE panel and its sub-frame along LHS of subway part	39	13-Aug-22	28-Sep-22	22-Aug-22	08-Oct-22	7	1
KTD.KS32.1050	Advance works for installing steel shelters for both sides staircases	12	27-May-22	10-Jun-22	27-May-22	10-Jun-22	0	1
KTD.KS32.1060	Implement TTA for lifting and install main steel frame of shelters for both sides staircases (Nightwork maybe req	21	11-Jun-22	06-Jul-22	11-Jun-22	06-Jul-22	0	1
KTD.KS32.1070	Install remaining steel members, glass balustrade, shelter roof top and ancillary facilities for both sides staircase	78	07-Jul-22	08-Oct-22	07-Jul-22	08-Oct-22	0	1
KTD.KS32.1080	Install partial E&M works inclu lighting and drainage system and steel light trough for LHS of subway part	65	10-Oct-22	23-Dec-22	10-Oct-22	23-Dec-22	0	1
KTD.KS32.1090	Implement TTA (Phase 2) for closing RHS of subway part	12	24-Dec-22	10-Jan-23	24-Dec-22	10-Jan-23	0	1
KTD.KS32.1100	Site clearance and erect temporary partition along subway part for working area	13	11-Jan-23	27-Jan-23	11-Jan-23	27-Jan-23	0	1
KTD.KS32.1110	Demolition of existing floor finishes and furnitures, incl lighting	26	28-Jan-23	27-Feb-23	28-Jan-23	27-Feb-23	0	1
KTD.KS32.1120	Construct roof and floor finishes along RHS of subway part	65	28-Feb-23	19-May-23	28-Feb-23	19-May-23	0	1
KTD.KS32.1130	Install VE panels along RHS of subway part	39	20-May-23	07-Jul-23	20-May-23	07-Jul-23	0	1
KTD.KS32.1140	Install remaining E&M works inclu lighting and drainage system and steel light trough at Subway KS9	52	08-Jul-23	06-Sep-23	08-Jul-23	06-Sep-23	0	1
KTD.RS.1030	Planned Completion of renovation of existing Subways KS9 and KS32 (Related to Section 1)	0		06-Sep-23		06-Sep-23	0	2
KTD.RS.1040	Advance Completion of renovation of existing Subways KS9 and KS32 to Specific Contract Completion Date (S	20	07-Sep-23	26-Sep-23	07-Sep-23	26-Sep-23	0	2
RENOVATION OF EXISTING SUBWAY KS9		400	18-Jan-22	27-May-23	18-Jan-22	06-Sep-23	85	1
KTD.KS9.1000	Implement TTA (Phase 1) for closing staircases at both sides and LHS of subway part	3	18-Jan-22	20-Jan-22	18-Jan-22	20-Jan-22	0	1
KTD.KS9.1010	Site clearance and erect temporary partition along subway part for working area	26	21-Jan-22	23-Feb-22	21-Jan-22	23-Feb-22	0	1
KTD.KS9.1020	Demolition of existing wall tiles at both side staircases, floor finishes and furnitures, incl handrail/guardrail/lights	39	24-Feb-22	11-Apr-22	24-Feb-22	11-Apr-22	0	1
KTD.KS9.1025	Construct wall and floor finishes at both staircases	26	26-Mar-22	29-Apr-22	26-Mar-22	29-Apr-22	0	1
KTD.KS9.1030	Construct roof and floor finishes along LHS of subway part	45	30-Apr-22	24-Jun-22	14-Sep-22	07-Nov-22	112	1
KTD.KS9.1040	Install VE panels and its sub-frame along LHS of subway part	26	25-Jun-22	26-Jul-22	08-Nov-22	07-Dec-22	112	1
KTD.KS9.1050	Advance works for installing steel shelters for both sides staircases	12	30-Apr-22	16-May-22	30-Apr-22	16-May-22	0	1
KTD.KS9.1055	Implement TTA for lifting and install main steel frame of shelters for both sides staircases (Nightwork maybe req	21	17-May-22	10-Jun-22	17-May-22	10-Jun-22	0	1
KTD.KS9.1060	Install remaining steel members, glass balustrade, shelter roof top and ancillary facilities	65	11-Jun-22	26-Aug-22	21-Sep-22	07-Dec-22	85	1
KTD.KS9.1070	Install partial E&M works inclu lighting and drainage system and steel light trough for LHS of subway part	52	27-Aug-22	29-Oct-22	08-Dec-22	11-Feb-23	85	1
KTD.KS9.1080	Implement TTA (Phase 2) for closing RHS of subway part	12	31-Oct-22	12-Nov-22	13-Feb-23	25-Feb-23	85	1
KTD.KS9.1090	Site clearance and erect temporary partition along subway part for working area	13	14-Nov-22	28-Nov-22	27-Feb-23	13-Mar-23	85	1
KTD.KS9.1100	Demolition of existing floor finishes and furnitures, incl lighting	21	29-Nov-22	22-Dec-22	14-Mar-23	11-Apr-23	85	1
KTD.KS9.1110	Construct roof and floor finishes along RHS of subway part	45	23-Dec-22	18-Feb-23	12-Apr-23	05-Jun-23	85	1
KTD.KS9.1120	Install VE panels along RHS of subway part	26	20-Feb-23	21-Mar-23	06-Jun-23	07-Jul-23	85	1
KTD.KS9.1130	Install remaining E&M works inclu lighting and drainage system and steel light trough at Subway KS9	52	22-Mar-23	27-May-23	08-Jul-23	06-Sep-23	85	1
DIVERSION OF EXISTING RISING MAIN AND DEMOLITION OF EXISTING STRUCTURES AT SITE 2C2 & 2C3		373	16-Sep-20	17-Dec-21	17-Sep-20	17-Dec-21	0	
KTD.RM.1000	Liasion with relevant departments for removal of abandoned motorcycles under existing structures at Site 2C2 a	60	16-Sep-20	14-Nov-20	17-Sep-20	15-Nov-20	1	2
KTD.RM.1001	Removal of abandoned motorcycles and clearance for demolition works	14	16-Nov-20	01-Dec-20	16-Nov-20	01-Dec-20	0	1
KTD.RM.1002	Conduct asbestos survey and submission of AIR/AAP to EPD for approval	37	02-Dec-20	07-Jan-21	02-Dec-20	07-Jan-21	0	2
KTD.RM.1003	Submit notification of commencement of removal works of asbestos at existing cottage at Site 2C2 and 2C3	27	08-Jan-21	03-Feb-21	08-Jan-21	03-Feb-21	0	2
KTD.RM.1004	Erect scaffold and demolition of existing RC structure at Site 2C2 and 2C3	39	08-Jan-21	25-Feb-21	20-Jan-21	09-Mar-21	10	1
KTD.RM.1005	Erect protection, removal of asbestos and demolition of existing cottage at Site 2C2 and 2C3	26	04-Feb-21	08-Mar-21	04-Feb-21	08-Mar-21	0	1
KTD.RM.1011	Trial pit excavation to locate existing twin rising main at CH0 and CH184 (1 team)	12	10-Mar-21	23-Mar-21	10-Mar-21	23-Mar-21	0	1
KTD.RM.1012	Open-cut excavation for construction of twin rising main from CH0 to CH184 (175mL,3500m3 exca, 1 team)	83	24-Mar-21	11-Jun-21	24-Mar-21	11-Jun-21	0	1
KTD.RM.1020	Lay and install pipeworks and cast thrust blocks for twin rising main from CH0 to CH184 (184mL)	115	17-Apr-21	02-Sep-21	17-Apr-21	02-Sep-21	0	1
KTD.RM.1021	Install ELS and excavate for connection pit for twin rising main at CH0 and CH184 (20mL, 960m3 exca, 1 team	39	19-Aug-21	05-Oct-21	19-Aug-21	05-Oct-21	0	1
KTD.RM.1025	Cut existing rising main, lay and install pipeworks and cast thrust blocks for connection of Pipeline 1	18	06-Oct-21	27-Oct-21	06-Oct-21	27-Oct-21	0	1
KTD.RM.1027	Cut existing rising main, lay and install pipeworks and cast thrust blocks for connection of Pipeline 2	18	28-Oct-21	17-Nov-21	28-Oct-21	17-Nov-21	0	1
KTD.RM.1030	Backfilling works and abandon the existing sewage rising main	26	18-Nov-21	17-Dec-21	18-Nov-21	17-Dec-21	0	1
KTD.RM.1040	Planned Completion of diversion and demolition of existing structures at Site 2C2 and 2C3 (Related to Section	0		17-Dec-21		17-Dec-21	0	2
CONSTRUCTION OF ROAD WORKS		1313	31-Jul-20	31-Dec-24	01-Sep-20	30-Jun-26	441	
CONSTRUCTION OF SLIP ROAD S14		707	31-Jul-20	15-Dec-22	06-Aug-21	30-Jun-26	1047	
KTD.SR.1000	Liaison/coordinate with utility and service undertakings on diversion works (including CLP, DCS work and etc.)	180	31-Jul-20	26-Jan-21	06-Aug-21	01-Feb-22	371	2
KTD.SR.1010	Expose and install protect/support system for existing underground utilities and services (incl 132kV and 400kV	104	21-Oct-20	26-Feb-21	27-Oct-21	03-Mar-22	300	1
KTD.SR.1020	Pre-drilling works for pile caps PC1, PC2 and south side of PC3 to PC7 (14 nos, 2 rigs)	131	27-Nov-20	11-May-21	06-Sep-21	15-Feb-22	228	1
KTD.SR.1030-CSD2	Pre-drilling works for pile caps north side of PC3 to PC7 (10 nos, 2 rigs)	1	12-May-21	12-May-21	15-Feb-22	16-Feb-22	228	1
KTD.SR.1031-CSD2	Submission/approval for CSD Proposal and Detail Design Report by the Employer/relevant authorities	132	26-Nov-20	12-May-21	04-Sep-21	15-Feb-22	226	1
KTD.SR.1032-CSD2	Expose existing 132kV and 400kV cables, remove existing abandoned chamber and install protection to existin	26	12-May-21	11-Jun-21	16-Feb-22	17-Mar-22	226	1
KTD.SR.1040-CSD2	Piling works of pre-bored H-piles (14 nos, 610dia x 70m, 1 rig)	70	29-May-21	20-Aug-21	04-Mar-22	31-May-22	226	1
KTD.SR.1050	Installation of ELS and excavation and construction for pile cap PC1 (60m3 exca, 30m3 conc, 1 team)	26	21-Aug-21	20-Sep-21	01-Jun-22	02-Jul-22	226	1
KTD.SR.1060	Construction of temporary supporting system for existing bridge K73	39	21-Sep-21	08-Nov-21	19-Apr-23	05-Jun-23	464	1
KTD.SR.1070	Demolition of existing bearing wall	26	09-Nov-21	08-Dec-21	08-Jun-23	07-Jul-23	464	1
KTD.SR.1080	Installation of ELS and excavation and construction for pile cap PC2 (60m3 exca, 30m3 conc, 1 team)	26	09-Dec-21	11-Jan-22	08-Jul-23	07-Aug-23	464	1
KTD.SR.1090	Construction of remaining foundation and pier structures (incl. columns, portal beams and etc.) (169m3, 1 team	52	12-Jan-22	16-Mar-22	08-Aug-23	09-Oct-23	464	1
KTD.SR.1100	Construction of cantilever slab extended from ext. bridge K73 (150m3, 1 team)	39	17-Mar-22	06-May-22	10-Oct-23	24-Nov-23	464	1
KTD.SR.1110	Backfilling for pile caps (PC1 and PC2)	26	07-May-22	08-Jun-22	25-Nov-23	27-Dec-23	464	1
KTD.SR.2000-CSD2	Piling works of pre-bored H-piles (31 nos, 610dia x 80m, 1 rig)	125	21-Aug-21	20-Jan-22	29-Jun-22	25-Nov-22	251	1
KTD.SR.2001-CSD2	Site clearance, post-piling tests and proof drilling works for pre-bored H-piles (3 tests and 2 proof drills)	26	21-Jan-22	23-Feb-22	30-May-26	30-Jun-26	1289	1
KTD.SR.2010	Installation of ELS and excavation and construction for pile caps (P3-P7,1110m3 exca, 800m3 conc, 2 teams)	52	21-Jan-22	25-Mar-22	26-Nov-22	31-Jan-23	251	1
KTD.SR.2020	Construction of Retaining Wall S14 (Bay1-4, 460m3, 2 teams)	39	26-Mar-22	17-May-22	01-Feb-23	17-Mar-23	251	1
KTD.SR.2030	Construction of bridge S14 decking structures (320m3, 1 teams)	32	18-May-22	24-Jun-22	18-Mar-23	28-Apr-23	251	1



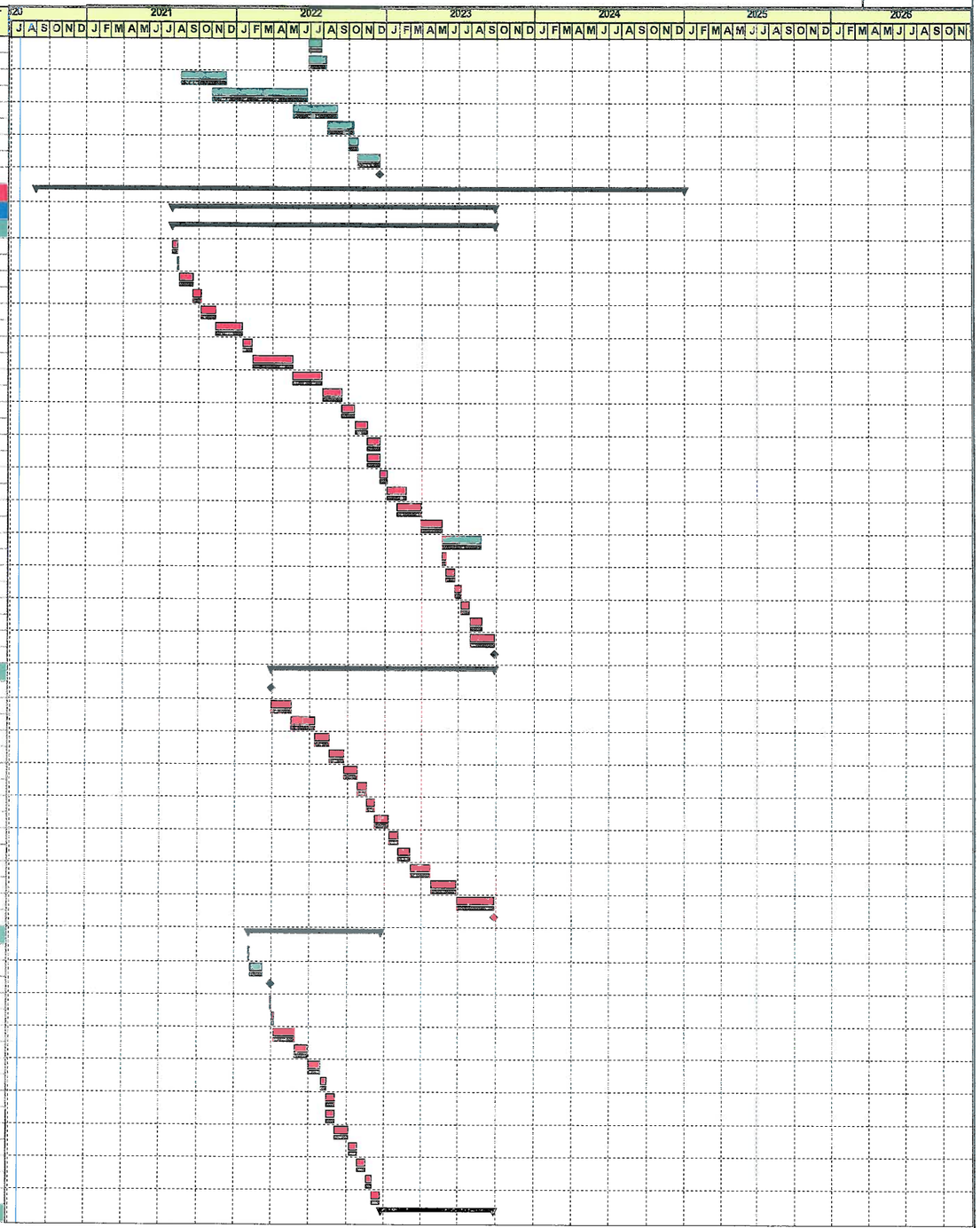
Project Baseline Bar
Remaining Work
Critical Remaining Work
Milestone
Summary

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
(Page 7 of 11)

Date	Revision	Checked	Approved
13-Oct-23	First Draft		

WP Rev-39

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.SR.2040	Prestressing works and bearing installation works	26	25-Jun-22	26-Jul-22	12-May-23	12-Jun-23	261	1
KTD.SR.2050	Backfilling for Retaining Wall S14 (Bay 1-7, 1800m3, 2 teams)	36	25-Jun-22	06-Aug-22	29-Apr-23	12-Jun-23	251	1
KTD.SR.3000	Installation of ELS and excavation for Retaining Wall S14 (Bay5-11, 3600m3 exca, 2 team)	90	21-Aug-21	07-Dec-21	01-Jun-22	16-Sep-22	228	1
KTD.SR.3010	Construction of Retaining Wall S14 (Bay5-11, 800m3, 2 teams)	184	04-Nov-21	21-Jun-22	13-Aug-22	24-Mar-23	228	1
KTD.SR.3020	Backfilling for Retaining Wall S14 (Bay8-11, 1100m3, 2 teams)	90	18-May-22	01-Sep-22	20-Feb-23	10-Jun-23	228	1
KTD.SR.3030	Excavate and construct stormwater drain from SMH1062 to SMH1066 and associated gullies	52	10-Aug-22	12-Oct-22	18-May-23	20-Jul-23	228	1
KTD.SR.3050	Backfill and compact sub-base from CH336 to CH124	18	30-Sep-22	22-Oct-22	11-Jul-23	31-Jul-23	228	1
KTD.SR.3060	Construction of road pavement, road marking, street and other facilities	46	24-Oct-22	15-Dec-22	02-Nov-23	27-Dec-23	305	1
KTD.SR.9999	Planned Completion of Slip Road S14 (Related to Section 3)	0		15-Dec-22		27-Dec-23	377	2
CONSTRUCTION OF ROADS D1, L9, L16, PEDESTRIAN STREETS AND OPEN SPACES		1286	01-Sep-20	31-Dec-24	01-Sep-20	30-Jun-26	441	
CONSTRUCTION OF ROADS L9 & L16 AND OLYMPIC AVENUE WITHIN PART 1		643	30-Jul-21	26-Sep-23	30-Jul-21	26-Sep-23	0	
CONSTRUCTION OF UNDERGROUND UTILITIES AND ROADWORKS AT ROAD L16 WITHIN PART 1 (NON-XP ARE/		643	30-Jul-21	26-Sep-23	30-Jul-21	26-Sep-23	0	
KTD.L16.1000	Excavate and construct stormwater drainage from SMH904 to SMH911 and associated drain pits	11	30-Jul-21	11-Aug-21	30-Jul-21	11-Aug-21	0	1
KTD.L16.1010	Backfill and compact the excavated trench from SMH904 to SMH911	3	12-Aug-21	14-Aug-21	12-Aug-21	14-Aug-21	0	1
KTD.L16.1014	Excavate and construct stormwater drainage from SMH909 to SMH911 and associated drain pits	29	16-Aug-21	17-Sep-21	16-Aug-21	17-Sep-21	0	1
KTD.L16.1017	Backfill and compact the excavated trench from SMH909 to SMH911	15	18-Sep-21	07-Oct-21	18-Sep-21	07-Oct-21	0	1
KTD.L16.1020	Excavate and demolish the existing box culvert and backfill at Road L16	30	08-Oct-21	12-Nov-21	08-Oct-21	12-Nov-21	0	1
KTD.L16.1030	Excavate and construct stormwater drainage frn SMH911 to SMH916 and associated drain pits	52	13-Nov-21	15-Jan-22	13-Nov-21	15-Jan-22	0	1
KTD.L16.1040	Backfill and compact the excavated trench from SMH911 to SMH916	18	17-Jan-22	09-Feb-22	17-Jan-22	09-Feb-22	0	1
KTD.L16.1050	Excavate and construct sewerage from SWTP1_1 to FMH10_40 (182mL pipeline and manholes)	78	10-Feb-22	18-May-22	10-Feb-22	18-May-22	0	1
KTD.L16.1060	Excavate and install fresh watermain from CHC0 to CHC180 and associated tees with chambers	60	19-May-22	29-Jul-22	19-May-22	29-Jul-22	0	1
KTD.L16.1070	Excavate and install salt watermain from CHC0 to CHC180 and associated tees with chambers	39	30-Jul-22	14-Sep-22	30-Jul-22	14-Sep-22	0	1
KTD.L16.1080	Excavate and install irregation pipeline at Road L16 within Part 1	26	15-Sep-22	17-Oct-22	15-Sep-22	17-Oct-22	0	1
KTD.L16.1090	Install and construct gully and associated drain pipes at Road L16 within Part 1	26	18-Oct-22	16-Nov-22	18-Oct-22	16-Nov-22	0	1
KTD.L16.1100	Install and construct road lighting and drawpits civil provisions at Road L16 within Part 1	26	17-Nov-22	16-Dec-22	17-Nov-22	16-Dec-22	0	1
KTD.L16.1110	Allowable time frame for UU undertakings to install their ducts/pits/chambers at Road L16 within Part 1	26	17-Nov-22	16-Dec-22	17-Nov-22	16-Dec-22	0	1
KTD.L16.1120	Backfill and compact to roadwork formation level at Road L16 within Part 1	12	17-Dec-22	03-Jan-23	17-Dec-22	03-Jan-23	0	1
KTD.L16.1130	Construct road kerb and planter at Road L16 within Part 1	39	04-Jan-23	20-Feb-23	04-Jan-23	20-Feb-23	0	1
KTD.L16.1140	Backfill and compact sub-base material for road work at Road L16 within Part 1	52	28-Jan-23	29-Mar-23	28-Jan-23	29-Mar-23	0	1
KTD.L16.1150	Construct carriagway pavement (Bitumen and concrete pavement) at Road L16 within Part 1	40	30-Mar-23	20-May-23	30-Mar-23	20-May-23	0	1
KTD.L16.1160	Lay paving blocks for pedestrian access at Road L16 within Part 1	78	22-May-23	23-Aug-23	27-Jun-23	26-Sep-23	29	1
KTD.L16.1170	TTA diversion for MTR SWT Station EVA (Stage 3, divert to newly constructed L16 as EVA)	7	22-May-23	30-May-23	22-May-23	30-May-23	0	1
KTD.L16.1180	Excavate and construct remaining stormwater drainage and watermain connection	18	31-May-23	20-Jun-23	31-May-23	20-Jun-23	0	1
KTD.L16.1190	Construct remaining road kerb/planter at Road L16 within Part 1	12	21-Jun-23	06-Jul-23	21-Jun-23	06-Jul-23	0	1
KTD.L16.1200	Allowable time frame for UU undertakings to install remaining ducts/pits/chambers at Road L16 within Part 1	18	07-Jul-23	27-Jul-23	07-Jul-23	27-Jul-23	0	1
KTD.L16.1210	Lay paving blocks for remaining pedestrian access at Road L16 within Part 1	26	28-Jul-23	26-Aug-23	28-Jul-23	26-Aug-23	0	1
KTD.L16.1220	Install road furnitures, road markings and landscaping works at Road L16 within Part 1	52	28-Jul-23	26-Sep-23	28-Jul-23	26-Sep-23	0	1
KTD.L16.1230	Planned completion of underground utilities and roadworks at Road L16 within Part 1 (related to Section 1)	0		26-Sep-23		26-Sep-23	0	2
CONSTRUCTION OF UNDERGROUND UTILITIES AND ROADWORKS AT ROAD L9 WITHIN PART 1 (NON-XP AREA		444	29-Mar-22	26-Sep-23	29-Mar-22	26-Sep-23	0	
KTD.L9.1000	TTA diversion for MTRC SWT Station EVA (Stage 2, divert to Sung Wong Toi Road and Crowd Dispersal Route)	0		29-Mar-22		29-Mar-22	0	1
KTD.L9.1010	Excavate and demolish the existing box culvert and backfill at Road L9	35	30-Mar-22	16-May-22	30-Mar-22	16-May-22	0	1
KTD.L9.1020	Excavate and construct stormwater drainage from SMH1026 to SMH454 and associated drain pits	48	17-May-22	13-Jul-22	17-May-22	13-Jul-22	0	1
KTD.L9.1030	Excavate and install fresh watermain from CHB126 to CHB50 at Road L9 within Part 1	50	14-Jul-22	17-Aug-22	14-Jul-22	17-Aug-22	0	1
KTD.L9.1040	Excavate and install salt watermain from CHB125 to CHB50 at Road L9 within Part 1	50	18-Aug-22	22-Sep-22	18-Aug-22	22-Sep-22	0	1
KTD.L9.1050	Excavate and install irregation pipeline at Road L9 within Part 1	26	23-Sep-22	25-Oct-22	23-Sep-22	25-Oct-22	0	1
KTD.L9.1060	Install and construct gully and associated drain pipes at Road L9 within Part 1	18	26-Oct-22	15-Nov-22	26-Oct-22	15-Nov-22	0	1
KTD.L9.1070	Install and construct road lighting and drawpits civil provisions at Road L9 within Part 1	18	16-Nov-22	06-Dec-22	16-Nov-22	06-Dec-22	0	1
KTD.L9.1080	Allowable time frame for UU undertakings to install ducts/pits/chambers at Road L9 within Part 1 (non-XP area)	26	07-Dec-22	09-Jan-23	07-Dec-22	09-Jan-23	0	1
KTD.L9.1090	Backfill and compact to roadwork formation level at Road L9 within Part 1	18	10-Jan-23	01-Feb-23	10-Jan-23	01-Feb-23	0	1
KTD.L9.1100	Construct road kerb and planter at Road L9 within Part 1	26	02-Feb-23	03-Mar-23	02-Feb-23	03-Mar-23	0	1
KTD.L9.1110	Backfill and compact sub-base material for road work at Road L9 within Part 1	39	04-Mar-23	22-Apr-23	04-Mar-23	22-Apr-23	0	1
KTD.L9.1120	Construct carriageway pavement (Bitumen pavement) at Road L9 within Part 1	52	24-Apr-23	26-Jun-23	24-Apr-23	26-Jun-23	0	1
KTD.L9.1130	Lay paving blocks for pedestrian access at Road L9 within Part 1	78	27-Jun-23	26-Sep-23	27-Jun-23	26-Sep-23	0	1
KTD.L9.1140	Planned completion of underground utilities and roadworks at Road L9 within Part 1 (non-XP area, related to S	0		26-Sep-23		26-Sep-23	0	2
CONSTRUCTION OF UNDERGROUND UTILITIES AND ROADWORKS AT JUNCTION OF L9 & OLYMPIC AVENUE W/		265	04-Feb-22	22-Dec-22	24-Feb-22	22-Dec-22	0	1
KTD.L9.2000	Implement TTA for construct preliminary works for Olympic Avenue roundabout closure	3	04-Feb-22	07-Feb-22	24-Feb-22	26-Feb-22	17	1
KTD.L9.2010	Preliminary works for Olympic Avenue roundabout closure (incl demolish central divider, construct pavement an	28	08-Feb-22	09-Mar-22	26-Feb-22	29-Mar-22	17	1
KTD.L9.2020	TTA diversion for MTR SWT Station EVA (Stage 2, divert to Sung Wong Toi Road and Crowd Dispersal Route)	0		29-Mar-22		29-Mar-22	0	1
KTD.L9.2030	Setup and implement TTA for Olympic Avenue roundabout closure	3	30-Mar-22	01-Apr-22	30-Mar-22	01-Apr-22	0	1
KTD.L9.2040	UU detection and trial pit excavation	3	02-Apr-22	05-Apr-22	02-Apr-22	05-Apr-22	0	1
KTD.L9.2050	Excavate and construct stormwater drainage from SMH1026 to SMH1042	39	07-Apr-22	27-May-22	07-Apr-22	27-May-22	0	1
KTD.L9.2060	Excavate and construct sewerage from 2A8_1 to FMH23_2	26	28-May-22	26-Jun-22	28-May-22	28-Jun-22	0	1
KTD.L9.2070	Excavate and construct FWM/SWM from CHB50 to CHB0 and CHA450 to CHA360 and associated tees with ch	26	29-Jun-22	29-Jul-22	29-Jun-22	29-Jul-22	0	1
KTD.L9.2080	Excavate and install irregation pipeline at Junction of Road L9 & Olympic Avenue within Part 1	12	30-Jul-22	12-Aug-22	30-Jul-22	12-Aug-22	0	1
KTD.L9.2090	Install and construct gully and associated drain pipes at Junction of Road L9 & Olympic Avenue within Part 1	18	13-Aug-22	02-Sep-22	13-Aug-22	02-Sep-22	0	1
KTD.L9.2100	Install and construct road lighting and drawpits civil provisions at Junction of Road L9 & Olympic Avenue within	18	13-Aug-22	02-Sep-22	13-Aug-22	02-Sep-22	0	1
KTD.L9.2110	Allowable time frame for UU undertakings to install ducts/pits/chambers at Junction of L9 & Olympic Avenue w/i	26	03-Sep-22	06-Oct-22	03-Sep-22	06-Oct-22	0	1
KTD.L9.2120	Backfill and compact to formation level for roadworks at Junction of Road L9 & Olympic Avenue within Part 1	18	07-Oct-22	27-Oct-22	07-Oct-22	27-Oct-22	0	1
KTD.L9.2130	Construct road kerb, central divider and planter at Junction of Road L9 & Olympic Avenue within Part 1	18	28-Oct-22	17-Nov-22	28-Oct-22	17-Nov-22	0	1
KTD.L9.2140	Backfill and compact sub-base material for road work at Junction of Road L9 & Olympic Avenue within Part 1	12	18-Nov-22	01-Dec-22	18-Nov-22	01-Dec-22	0	1
KTD.L9.2150	Construct carriageway pavement (Bitumen pavement) at Junction of Road L9 & Olympic Avenue within Part 1	18	02-Dec-22	22-Dec-22	02-Dec-22	22-Dec-22	0	1
CONSTRUCTION OF UNDERGROUND UTILITIES AND ROADWORKS AT OLYMPIC AVENUE WITHIN PART 1 (XP AF		225	23-Dec-22	26-Sep-23	23-Dec-22	26-Sep-23	0	



Project Baseline Bar ◆ Milestone
Remaining Work Summary
Critical Remaining Work

Kai Tak Development - Stage 5B Infrastructure Works at the Former North Apron Area
WORKS PROGRAMME
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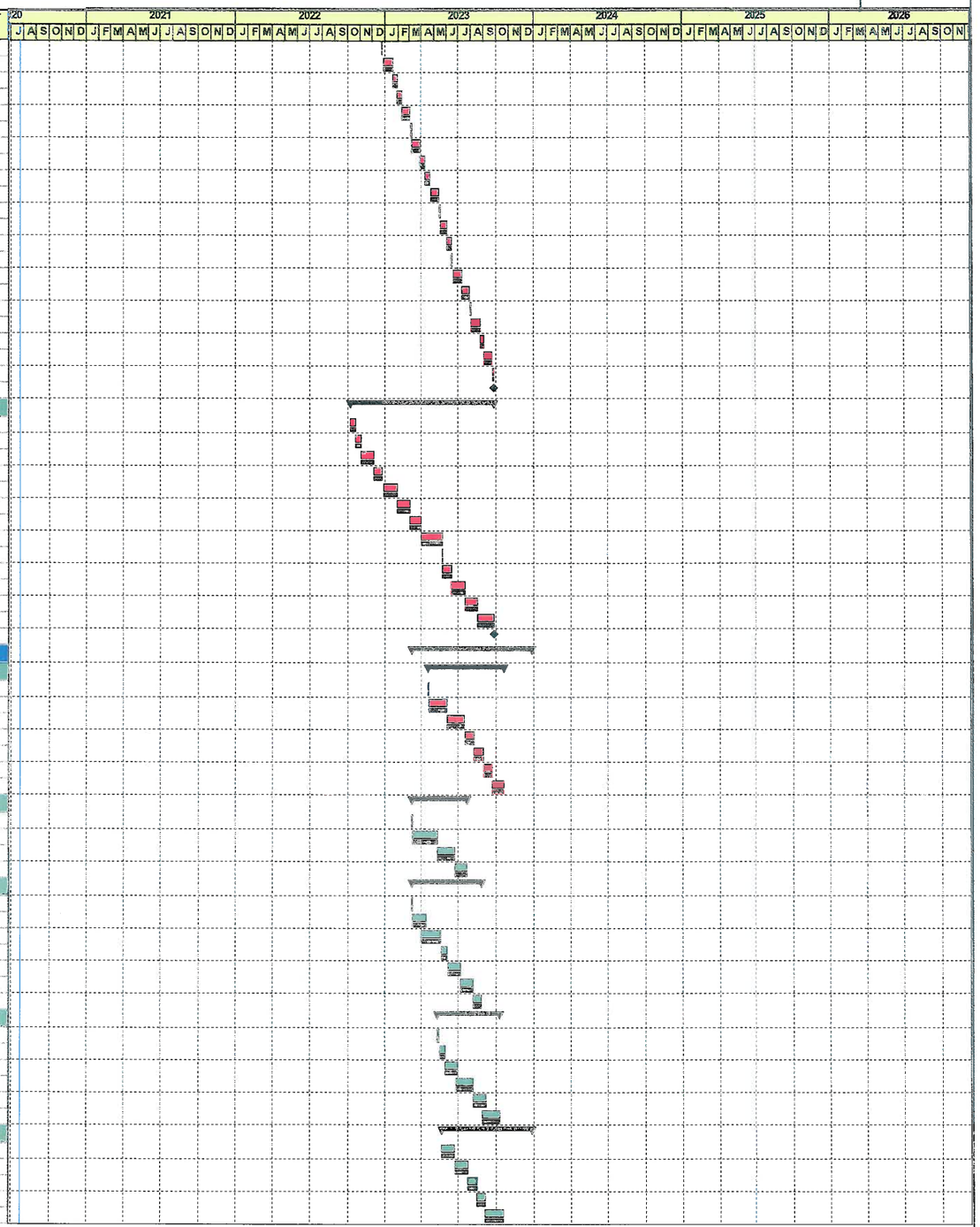
Date	Revision	Checked	Approved
13-Oct-23	First Draft		

WP Rev-39

Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.OLY.2000	Implement TTA for stormwater drainage works at Oly Ave E/B and W/B (Phase 1) and UU detection	2	23-Dec-22	24-Dec-22	23-Dec-22	24-Dec-22	0	1
KTD.OLY.2010	Excavate and construct stormwater drainage from SMH1035 to SMH1031 and SMH1042 to SMH100B and as	18	28-Dec-22	18-Jan-23	28-Dec-22	18-Jan-23	0	1
KTD.OLY.2020	Install and construct gully and associated drain pipes at Oly Ave E/B and W/B (Phase 1)	8	19-Jan-23	30-Jan-23	19-Jan-23	30-Jan-23	0	1
KTD.OLY.2030	Construct road kerb and central divider at Oly Ave E/B and W/B (Phase 1)	10	31-Jan-23	10-Feb-23	31-Jan-23	10-Feb-23	0	1
KTD.OLY.2040	Construct carriageway pavement (Bitumen pavement) at Oly Ave E/B and W/B (Phase 1)	18	11-Feb-23	03-Mar-23	11-Feb-23	03-Mar-23	0	1
KTD.OLY.2050	Remove TTA and implement TTA for stormwater drainage works at Oly Ave E/B and W/B (Phase 2) and UU det	3	04-Mar-23	07-Mar-23	04-Mar-23	07-Mar-23	0	1
KTD.OLY.2060	Excavate and construct stormwater drainage from SMH1031 to SMH1030A and SMH100B to SMH100 and as	18	08-Mar-23	28-Mar-23	08-Mar-23	28-Mar-23	0	1
KTD.OLY.2070	Install and construct gully and associated drain pipes at Oly Ave E/B and W/B (Phase 2)	8	29-Mar-23	11-Apr-23	29-Mar-23	11-Apr-23	0	1
KTD.OLY.2080	Construct road kerb and central divider at Oly Ave E/B and W/B (Phase 2)	10	12-Apr-23	22-Apr-23	12-Apr-23	22-Apr-23	0	1
KTD.OLY.2090	Construct carriageway pavement (Bitumen pavement) at Oly Ave E/B and W/B (Phase 2)	18	24-Apr-23	15-May-23	24-Apr-23	15-May-23	0	1
KTD.OLY.2100	Remove TTA and implement TTA for FWM/SWM at Oly Ave W/B (Phase 3) and UU detection	3	16-May-23	18-May-23	16-May-23	18-May-23	0	1
KTD.OLY.2110	Excavate and construct FWM/SWM from CHA360 to CHA300 and associated tees with chambers	12	19-May-23	02-Jun-23	19-May-23	02-Jun-23	0	1
KTD.OLY.2120	Backfill and construct carriageway pavement (Bitumen pavement) at Oly Ave W/B (Phase 3)	10	03-Jun-23	14-Jun-23	03-Jun-23	14-Jun-23	0	1
KTD.OLY.2130	Remove TTA and implement TTA for FWM/SWM at Oly Ave W/B and E/B (Phase 4) and UU detection	3	15-Jun-23	17-Jun-23	15-Jun-23	17-Jun-23	0	1
KTD.OLY.2140	Excavate and construct FWM/SWM from CHA300 to CHA100 and associated tees with chambers	18	19-Jun-23	11-Jul-23	19-Jun-23	11-Jul-23	0	1
KTD.OLY.2150	Backfill and construct carriageway pavement (Bitumen pavement) at Oly Ave W/B and E/B (Phase 4)	16	12-Jul-23	29-Jul-23	12-Jul-23	29-Jul-23	0	1
KTD.OLY.2160	Remove TTA and implement TTA for FWM/SWM at Sung Wong Toi Road S/B (Phase 5) and UU detection	3	31-Jul-23	02-Aug-23	31-Jul-23	02-Aug-23	0	1
KTD.OLY.2170	Excavate and construct FWM/SWM from CHA100 to CHA0 and associated tees with chambers	18	03-Aug-23	23-Aug-23	03-Aug-23	23-Aug-23	0	1
KTD.OLY.2180	FWM/SWM pipeline washing and testing for connection	8	24-Aug-23	01-Sep-23	24-Aug-23	01-Sep-23	0	1
KTD.OLY.2190	Backfill and construct carriageway pavement (Bitumen pavement) at Sung Wong Toi Road S/B (Phase 5)	18	02-Sep-23	22-Sep-23	02-Sep-23	22-Sep-23	0	1
KTD.OLY.2200	Site clearance and remove TTA to resume traffic	3	23-Sep-23	26-Sep-23	23-Sep-23	26-Sep-23	0	1
KTD.OLY.2210	Planned completion of underground utilities and roadworks at Olympic Avenue within Part 1 (related to Section	0		26-Sep-23		26-Sep-23	0	2
CONSTRUCTION OF PEDESTRIAN ACCESS FROM L9 TO OLYMPIC AVENUE WITHIN PART 1 (XP AREA)		291	07-Oct-22	26-Sep-23	07-Oct-22	26-Sep-23	0	
KTD.OLY.2220	Demolish and remove site hoarding from Road L9 to Olympic Avenue within Part 1	12	07-Oct-22	20-Oct-22	07-Oct-22	20-Oct-22	0	1
KTD.OLY.2230	Site clearance and relocate construction material stockpile at Storage Yard	12	21-Oct-22	03-Nov-22	21-Oct-22	03-Nov-22	0	1
KTD.OLY.2240	Excavate and construct u-channels and connect to stormwater drainage system	26	04-Nov-22	03-Dec-22	04-Nov-22	03-Dec-22	0	1
KTD.OLY.2250	Install and construct road lighting and drawpits civil provisions from Road L9 to Olympic Avenue within Part 1	18	05-Dec-22	24-Dec-22	05-Dec-22	24-Dec-22	0	1
KTD.OLY.2260	Allowable time frame for UU undertakings to install ducts/pits/chambers from Road L9 to Olympic Avenue withir	26	28-Dec-22	30-Jan-23	28-Dec-22	30-Jan-23	0	1
KTD.OLY.2270	Backfill and compact to formation level for road works	26	31-Jan-23	01-Mar-23	31-Jan-23	01-Mar-23	0	1
KTD.OLY.2280	Backfill and compact sub-base material for road works	26	02-Mar-23	31-Mar-23	02-Mar-23	31-Mar-23	0	1
KTD.OLY.2290	Lay paving blocks for pedestrian access from Road L9 to Olympic Avenue within Part 1	39	01-Apr-23	22-May-23	01-Apr-23	22-May-23	0	1
KTD.OLY.2300	Implement TTA for closing existing pedestrian access from Road L9 to Oly Ave w/in Part 1 and divert to new ac	1	23-May-23	23-May-23	23-May-23	23-May-23	0	1
KTD.OLY.2310	Remove existing paving blocks, excavate and install irregation pipeline from Road L9 to Olympic Avenue within	18	24-May-23	14-Jun-23	24-May-23	14-Jun-23	0	1
KTD.OLY.2320	Construct road kerb and planter frn Road L9 to Olympic Avenue within Part 1	26	15-Jun-23	17-Jul-23	15-Jun-23	17-Jul-23	0	1
KTD.OLY.2330	Laying paving blocks for pedestrian access frn Road L9 to Olympic Avenue within Part 1	26	18-Jul-23	16-Aug-23	18-Jul-23	16-Aug-23	0	1
KTD.OLY.2340	Install road furnitures, road markings and landscaping works from Road L9 to Olympic Avenue within Part 1	35	17-Aug-23	26-Sep-23	17-Aug-23	26-Sep-23	0	1
KTD.OLY.2350	Planned completion of pedestrian access from Road L9 to Olympic Avenue within Part 1 (XP area, related to S	0		26-Sep-23		26-Sep-23	0	2
CONSTRUCTION OF ROAD D1 WITHIN PART 1A		242	06-Mar-23	27-Dec-23	17-Apr-23	27-Dec-23	0	
CONSTRUCTION OF PORTION 1 (ROAD D1 E/B & W/B CH170 TO CH230)		156	17-Apr-23	21-Oct-23	17-Apr-23	21-Oct-23	0	1
KTD.D1.1000	Site clearance, haul road diversion, formation and fence off working area	4	17-Apr-23	20-Apr-23	17-Apr-23	20-Apr-23	0	1
KTD.D1.1010	Excavate and construct stormwater drain from SMH1023 to SMH1021 and associated gullies	35	21-Apr-23	02-Jun-23	21-Apr-23	02-Jun-23	0	1
KTD.D1.1020	Excavate and construct stormwater drain from SMH1054 to SMH1051 and associated gullies	35	03-Jun-23	15-Jul-23	03-Jun-23	15-Jul-23	0	1
KTD.D1.1030	Excavate and construct sewerage from FMH25_1 to FMH25_2a	20	17-Jul-23	08-Aug-23	17-Jul-23	08-Aug-23	0	1
KTD.D1.1040	Excavate and construct FWM/SWM from CH450 to CH500	20	09-Aug-23	31-Aug-23	09-Aug-23	31-Aug-23	0	1
KTD.D1.1050	Backfill and construct road kerb/central divider from Road D1 E/B & W/B CH170 to CH230 for road works	18	01-Sep-23	21-Sep-23	01-Sep-23	21-Sep-23	0	1
KTD.D1.1060	Backfill and compact sub-base from Road D1 E/B & W/B CH170 to CH230 for road works	24	22-Sep-23	21-Oct-23	22-Sep-23	21-Oct-23	0	1
CONSTRUCTION OF PORTION 2 (ROAD D1 E/B CH230 TO CH396)		111	06-Mar-23	21-Jul-23	18-May-23	25-Oct-23	79	1
KTD.D1.2000	Site clearance, haul road diversion, formation and fence off working area	4	06-Mar-23	09-Mar-23	18-May-23	22-May-23	58	1
KTD.D1.2010	Excavate and construct stormwater drain from SMH1101B to SMH1201C	48	10-Mar-23	10-May-23	23-May-23	20-Jul-23	58	1
KTD.D1.2020	Backfill and construct road kerb/central divider from Road D1 E/B CH230 to CH396	35	11-May-23	21-Jun-23	21-Jul-23	30-Aug-23	58	1
KTD.D1.2030	Backfill and compact sub-base from Road D1 E/B CH230 to CH396	24	23-Jun-23	21-Jul-23	25-Sep-23	25-Oct-23	79	1
CONSTRUCTION OF PORTION 3 (ROAD D1 W/B CH230 TO CH300)		142	06-Mar-23	26-Aug-23	04-May-23	21-Oct-23	46	1
KTD.D1.3000	Site clearance, haul road diversion, formation and fence off working area	4	06-Mar-23	09-Mar-23	04-May-23	08-May-23	46	1
KTD.D1.3010	Excavate and construct stormwater drain from SMH1120 to SMH1123 and associated gullies	26	10-Mar-23	13-Apr-23	09-May-23	08-Jun-23	46	1
KTD.D1.3020	Excavate and construct stormwater drain from SMH1001 to SMH1107 and associated gullies	37	01-Apr-23	19-May-23	01-Jun-23	15-Jul-23	46	1
KTD.D1.3030	Excavate and construct sewerage from FMH25_2a to FMH25_4	12	20-May-23	03-Jun-23	17-Jul-23	28-Jul-23	46	1
KTD.D1.3040	Excavate and construct FWM/SWM from CH500 to CH570	26	05-Jun-23	06-Jul-23	31-Jul-23	29-Aug-23	46	1
KTD.D1.3050	Backfill and construct road kerb/central divider from Road D1 W/B CH230 to CH300	26	07-Jul-23	05-Aug-23	30-Aug-23	28-Sep-23	46	1
KTD.D1.3060	Backfill and compact sub-base from Road D1 W/B CH230 to CH300	18	07-Aug-23	26-Aug-23	29-Sep-23	21-Oct-23	46	1
CONSTRUCTION OF PORTION 4 (ROAD D1 W/B CH300 TO CH396)		137	11-May-23	09-Oct-23	17-Jul-23	12-Dec-23	54	1
KTD.D1.4000	Site clearance, haul road diversion, formation and fence off working area	4	11-May-23	15-May-23	17-Jul-23	20-Jul-23	54	1
KTD.D1.4010	Excavate and construct stormwater drain from SMH1108 to SMH1108A	12	16-May-23	30-May-23	21-Jul-23	03-Aug-23	54	1
KTD.D1.4020	Excavate and construct stormwater drain from SMH1107 to 1271 and associated gullies	26	31-May-23	30-Jun-23	04-Aug-23	02-Sep-23	54	1
KTD.D1.4030	Excavate and construct FWM/SWM from CH570 to CH870	35	26-Jun-23	05-Aug-23	29-Aug-23	10-Oct-23	54	1
KTD.D1.4040	Backfill and construct road kerb/central divider from Road D1 W/B CH300 to CH396	26	07-Aug-23	05-Sep-23	11-Oct-23	10-Nov-23	54	1
KTD.D1.4050	Backfill and construct sub-base from Road D1 W/B CH300 to CH396	35	28-Aug-23	09-Oct-23	01-Nov-23	12-Dec-23	54	1
CONSTRUCTION OF PORTION 5 (PEDESTRIAN ACCESS AND CARRIAGEWAY PAVEMENT AT ROAD D1)		181	27-May-23	27-Dec-23	01-Aug-23	27-Dec-23	0	
KTD.D1.5000	Demolition and removal of existing site hoarding or boundary fence at Road D1 E/B Pedestrian Access	26	22-May-23	21-Jun-23	01-Aug-23	30-Aug-23	58	1
KTD.D1.5010	Construct u-channel/lighting duct and drawpits at Road D1 E/B Pedestrian Access	26	23-Jun-23	24-Jul-23	31-Aug-23	29-Sep-23	58	1
KTD.D1.5020	Construct planter kerb at Road D1 E/B Pedestrian Access	18	25-Jul-23	14-Aug-23	03-Oct-23	24-Oct-23	58	1
KTD.D1.5030	Allowable time frame for UU undertakings to install ducts/pits/chambers at Road D1 E/B Pedestrian Access	18	15-Aug-23	04-Sep-23	25-Oct-23	14-Nov-23	58	1
KTD.D1.5040	Lay paving blocks and install street furnitures/facilities for Road D1 E/B Pedestrian Access	35	05-Sep-23	17-Oct-23	15-Nov-23	27-Dec-23	58	1



Project Baseline Bar ◆ Milestone
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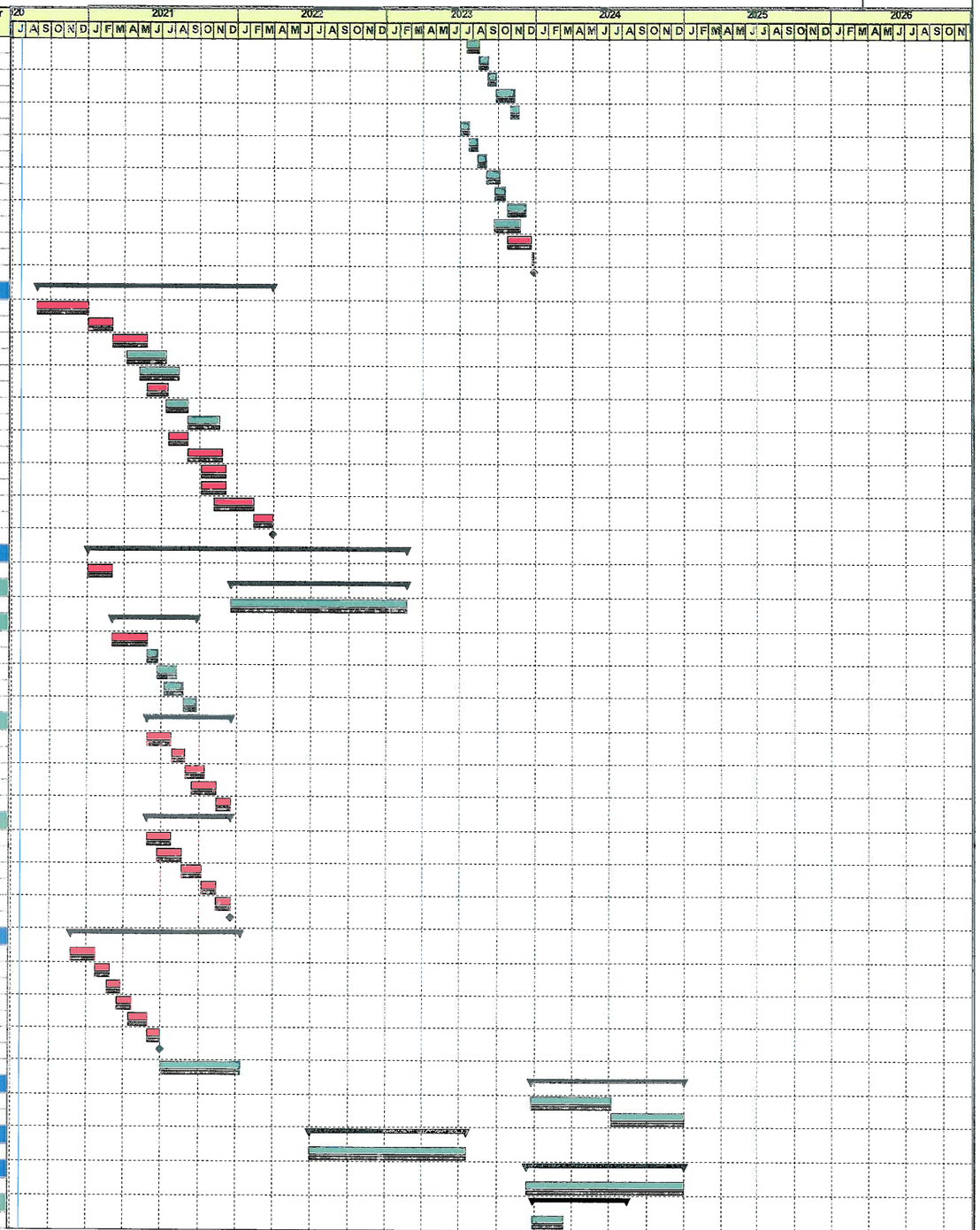
Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.D1.6000	Construct u-channel/lighting duct and drawpits at Road D1 W/B Pedestrian Access from CH170 to CH300	26	17-Jul-23	15-Aug-23	19-Aug-23	18-Sep-23	29	1
KTD.D1.6010	Construct planter kerb at Road D1 W/B Pedestrian Access from CH170 to CH300	18	16-Aug-23	05-Sep-23	19-Sep-23	11-Oct-23	29	1
KTD.D1.6020	Allowable time frame for UU undertakings to install ducts/pits/chambers at Road D1 W/B Pedestrian Access CH	18	06-Sep-23	26-Sep-23	12-Oct-23	02-Nov-23	29	1
KTD.D1.6030	Lay paving blocks and install street furnitures/facilities for Road D1 W/B Pedestrian Access CH170 to CH300	35	27-Sep-23	09-Nov-23	03-Nov-23	13-Dec-23	29	1
KTD.D1.6040	Construct landscaping softworks for Road D1 W/B Pedestrian Access CH170 to CH300	18	01-Nov-23	21-Nov-23	05-Dec-23	27-Dec-23	29	1
KTD.D1.7000	Construct u-channel/lighting duct and drawpits at Road D1 W/B Pedestrian Access CH300 to CH396	18	03-Jul-23	22-Jul-23	08-Sep-23	28-Sep-23	58	1
KTD.D1.7010	Construct planter kerb at Road D1 W/B Pedestrian Access CH300 to CH396	18	24-Jul-23	12-Aug-23	29-Sep-23	21-Oct-23	58	1
KTD.D1.7020	Allable time frame for UU undertakings to install ducts/pits/chambers at Road D1 W/B Pedestrian Access CH30	18	14-Aug-23	02-Sep-23	24-Oct-23	13-Nov-23	58	1
KTD.D1.7030	Lay paving blocks and install street furnitures/facilities for Road D1 W/B Pedestrian Access CH300 to CH396	26	04-Sep-23	05-Oct-23	14-Nov-23	13-Dec-23	58	1
KTD.D1.7040	Construct landscaping softworks for Road D1 W/B Pedestrian Access CH300 to CH396	18	25-Sep-23	17-Oct-23	05-Dec-23	27-Dec-23	58	1
KTD.D1.8000	Construct carriageway pavement for Road D1 W/B CH170 to CH230 (12d for each layer test result, exclu weath	40	24-Oct-23	08-Dec-23	07-Nov-23	22-Dec-23	12	1
KTD.D1.8010	Construct carriageway pavement and road marking for Road D1 E/B (12d for each layer test result, 3 layers)	52	22-Sep-23	24-Nov-23	26-Oct-23	27-Dec-23	26	1
KTD.D1.8020	Construct carriageway pavement and road marking for Road D1 W/B (12d for each layer test result, 3 layers)	52	24-Oct-23	22-Dec-23	24-Oct-23	22-Dec-23	0	1
KTD.D1.9000	Advanced Completion of Road D1 within Part 1A	5	23-Dec-23	27-Dec-23	23-Dec-23	27-Dec-23	0	2
KTD.D1.9999	Planned Completion of Road D1 within Part 1A (Related to Section 3)	0		27-Dec-23		27-Dec-23	0	2
CONSTRUCTION OF CROWD DISPERSAL ROUTE (CDR) WITHIN PARTS 2 AND 10		467	01-Sep-20	29-Mar-22	01-Sep-20	29-Mar-22	0	
KTD.CDR.1000	Liaison/coordinate with CLP for new 132kV and 11kV cable laying at Road L16, Part 3 and Crowd Dispersal Rc	123	01-Sep-20	01-Jan-21	01-Sep-20	01-Jan-21	0	2
KTD.CDR.1010	Excavate and construct storm drain pipework (40mL)/catchpit fm CH0 to CH20	48	02-Jan-21	02-Mar-21	02-Jan-21	02-Mar-21	0	1
KTD.CDR.1020	Backfill pipeline area fm CH0 to CH20 and excavate and construct u-channel fm CH0 to CH180	66	03-Mar-21	25-May-21	03-Mar-21	25-May-21	0	1
KTD.CDR.1030	Excavate and construct lighting drawpits and lay cable ducts fm CH0 to CH180	78	07-Apr-21	10-Jul-21	25-Jun-21	25-Sep-21	65	1
KTD.CDR.1040	Backfill and compact sub-base and construct road pavement fm CH0 to CH180	78	08-May-21	10-Aug-21	18-Aug-21	19-Nov-21	84	1
KTD.CDR.1050	Excavate and construct u-channel fm CH180 to CH292	43	26-May-21	16-Jul-21	26-May-21	16-Jul-21	0	1
KTD.CDR.1060	Excavate and construct lighting drawpits and lay cable ducts fm CH180 to CH292	45	12-Jul-21	01-Sep-21	27-Sep-21	19-Nov-21	65	1
KTD.CDR.1070	Backfill and compact sub-base and construct road pavement fm CH180 to CH292	65	02-Sep-21	19-Nov-21	20-Nov-21	10-Feb-22	65	1
KTD.CDR.1080	Excavate and construct storm drain pipework/manhole SMH119	40	17-Jul-21	01-Sep-21	17-Jul-21	01-Sep-21	0	1
KTD.CDR.1090	Backfill pipeline area to SMH119 and construct u-channel fm CH292 to CH455	70	02-Sep-21	25-Nov-21	02-Sep-21	25-Nov-21	0	1
KTD.CDR.1100	Excavate and construct lighting drawpits and lay cable ducts fm CH292 to CH455	52	05-Oct-21	04-Dec-21	05-Oct-21	04-Dec-21	0	1
KTD.CDR.1110	Excavate and construct watermain pipework and install fire hydrants from CH316 to CH455	52	05-Oct-21	04-Dec-21	05-Oct-21	04-Dec-21	0	1
KTD.CDR.1120	Backfill and compact sub-base and construct road pavement fm CH292 to CH455	78	05-Nov-21	10-Feb-22	05-Nov-21	10-Feb-22	0	1
KTD.CDR.1130	Install chain-link fence from CH0 to CH455 and install lighting poles and cabling by HyD sub-contractor	40	11-Feb-22	29-Mar-22	11-Feb-22	29-Mar-22	0	1
KTD.CDR.1140	Planned Completion of Roadworks and Utilities/Services within Parts 2 and 10 (Related to Section 6)	0		29-Mar-22		29-Mar-22	0	2
CONSTRUCTION OF PEDESTRIAN STREETS NO.1, 3 & 4 WITHIN PART 3		632	02-Jan-21	20-Feb-23	02-Jan-21	24-Feb-24	301	
KTD.RW.2060	Liaison/coordinate with adjacent projects (incl Station Square, Housing Sites and etc.) for interfacing issues	60	02-Jan-21	02-Mar-21	02-Jan-21	02-Mar-21	0	2
CONSTRUCTION OF ROADWORK/LANDSCAPE WORKS AT PEDESTRIAN STREETS NO.1, 3 & 4		346	18-Dec-21	20-Feb-23	24-Dec-22	24-Feb-24	301	1
KTD.RW.2070	Construct roadwork and landscape softworks within Part 3 (incl pedestrian streets)	346	18-Dec-21	20-Feb-23	24-Dec-22	24-Feb-24	301	1
CONSTRUCTION OF UNDERGROUND UTILITIES AT PEDESTRIAN STREET NO.1		169	03-Mar-21	25-Sep-21	03-Mar-21	17-Dec-21	69	1
KTD.PS1.1000	Excavate and construct storm drain pipework (120mL)/catchpit/manholes fm SMH905A to SMH905B	68	03-Mar-21	27-May-21	03-Mar-21	27-May-21	0	1
KTD.PS1.1010	Backfill fm SMH905A to SMH905B	20	28-May-21	21-Jun-21	19-Aug-21	10-Sep-21	69	1
KTD.PS1.1020	Construct fresh/salt watermain pipework (150mL)/chambers along CHC9	39	22-Jun-21	06-Aug-21	11-Sep-21	29-Oct-21	69	1
KTD.PS1.1030	Construct road lighting drawpits and lay cable ducts for Pedestrian Street No.1	39	09-Jul-21	23-Aug-21	29-Sep-21	15-Nov-21	69	1
KTD.PS1.1040	Backfill up to formation level for Pedestrian Street No.1	28	24-Aug-21	25-Sep-21	16-Nov-21	17-Dec-21	69	1
CONSTRUCTION OF UNDERGROUND UTILITIES AT PEDESTRIAN STREET NO.3		170	28-May-21	17-Dec-21	28-May-21	17-Dec-21	0	1
KTD.PS3.1000	Excavate and construct storm drain pipework (33mL) to Box Culvert B1	48	28-May-21	24-Jul-21	28-May-21	24-Jul-21	0	1
KTD.PS3.1010	Backfill pipework area and construct catchpits	29	26-Jul-21	27-Aug-21	29-Jul-21	27-Aug-21	0	1
KTD.PS3.1020	Construct sewer drain pipework (171mL)/manholes fm FMH10_40 to FMH10_55b	39	28-Aug-21	15-Oct-21	28-Aug-21	15-Oct-21	0	1
KTD.PS3.1030	Construct salt watermain pipework (150mL)/chambers along CHC10/Construct road lighting drawpits and lay ca	48	14-Sep-21	11-Nov-21	14-Sep-21	11-Nov-21	0	1
KTD.PS3.1040	Backfill up to formation level for Pedestrian Street No.3	31	12-Nov-21	17-Dec-21	12-Nov-21	17-Dec-21	0	1
CONSTRUCTION OF UNDERGROUND UTILITIES AT PEDESTRIAN STREET NO.4		170	28-May-21	17-Dec-21	28-May-21	17-Dec-21	0	
KTD.PS4.1000	Excavate and construct storm drain pipework (192mL)/catchpit/manhole fm SMH505 to SMH1005A	48	28-May-21	24-Jul-21	28-May-21	24-Jul-21	0	1
KTD.PS4.1010	Excavate and construct sewer drain pipework (165mL)/manhole fm FMH25_30 to FMH25_10	51	22-Jun-21	20-Aug-21	22-Jun-21	20-Aug-21	0	1
KTD.PS4.1020	Backfill pipework area and construct fresh watermain pipework (170mL)/chambers along CHC11	39	21-Aug-21	07-Oct-21	21-Aug-21	07-Oct-21	0	1
KTD.PS4.1030	Construct road lighting drawpits and lay cable ducts	29	08-Oct-21	11-Nov-21	08-Oct-21	11-Nov-21	0	1
KTD.PS4.1040	Backfill up to formation level for Pedestrian Street No.4	31	12-Nov-21	17-Dec-21	12-Nov-21	17-Dec-21	0	1
KTD.PS4.1050	Planned Completion of Underground Utilities/Services within Part 3 (Related to Section 5)	0		17-Dec-21		17-Dec-21	0	2
CONSTRUCTION OF PEDESTRIAN STREET NO.2 WITHIN PART 4		336	23-Nov-20	11-Jan-22	23-Nov-20	24-Feb-24	629	
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	23-Nov-20	21-Jan-21	0	2
KTD.PS2.1010	Excavate and construct storm drain pipework (59mL) /catchpit/manholes from SMH404 to SMH402	28	22-Jan-21	26-Feb-21	22-Jan-21	26-Feb-21	0	1
KTD.PS2.1020	Backfill fm SMH404 to SMH402/Excavate and construct storm drain pipework (59mL)/catchpit/manhole fm SMI	29	19-Feb-21	24-Mar-21	19-Feb-21	24-Mar-21	0	1
KTD.PS2.1030	Backfill fm SMH402 to SMH401/Excavate and construct storm drain pipework (59mL)/catchpit/manhole fm SMI	26	17-Mar-21	20-Apr-21	17-Mar-21	20-Apr-21	0	1
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
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
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
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
CONSTRUCTION OF ROAD L16 WITHIN PART 6		303	23-Dec-23	31-Dec-24	15-Mar-24	30-Jun-25	144	1
KTD.RW.2090	Liasion with developer of the sites 2A4, 2A5(B) and 2A10 and construction of drainage and sewage works with	156	23-Dec-23	06-Jul-24	15-Mar-24	23-Sep-24	66	1
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
CONSTRUCTION OF ROAD D1 WITHIN PART 5		312	30-Jun-22	18-Jul-23	08-Dec-22	27-Dec-23	134	1
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
CONSTRUCTION OF UNDERGROUND UTILITIES WITHIN PARTS 1B, 6A AND 7 AND REMAINING AT ALL PARTS		312	13-Dec-23	31-Dec-24	13-Jun-25	30-Jun-26	441	
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
CONSTRUCTION OF UNDERGROUND UTILITIES WITHIN PARTS 6A AND 7		187	28-Dec-23	14-Aug-24	11-Nov-25	30-Jun-26	555	
KTD.P67.1000	Excavate/install FWM and SWM from CH400 to CH350 (50mL) and fittings	62	28-Dec-23	12-Mar-24	11-Nov-25	24-Jan-26	555	1



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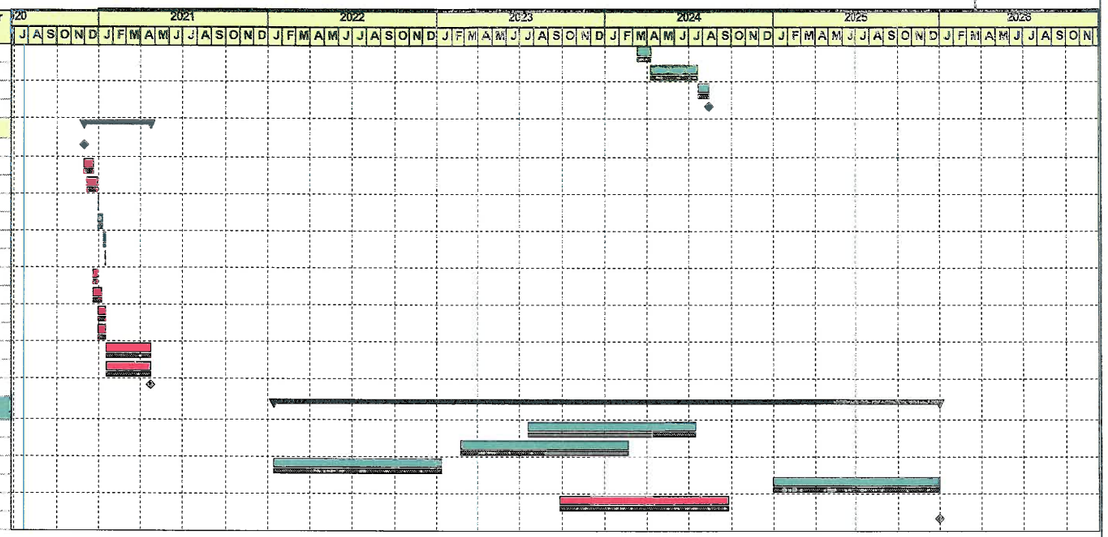
Activity ID	Activity Name	Duration (d)	Early Start	Early Finish	Late Start	Late Finish	Total Float	Calendar
KTD.P67.1010	Backfill FWM and SWM from CH400 to CH350	21	13-Mar-24	10-Apr-24	26-Jan-26	21-Feb-26	555	1
KTD.P67.1020	Excavate/install FWM and SWM from CH350 to CH300 (50mL) and fittings and chambers	83	11-Apr-24	20-Jul-24	23-Feb-26	04-Jun-26	555	1
KTD.P67.1030	Backfill FWM and SWM from CH350 to CH300	21	22-Jul-24	14-Aug-24	05-Jun-26	30-Jun-26	555	1
KTD.P67.1040	Planned Completion of Underground Utilities/Services within Parts 6A and 7 (Related to Section 2)	0		14-Aug-24		30-Jun-26	685	2
CONSTRUCTION OF ADDITIONAL COVER WALKWAY FP3 UNDER PMI 006		115	30-Nov-20	23-Apr-21	30-Nov-20	23-Apr-21	0	
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
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
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
KTD.FP3.1040	Remove pavement, excavate for drain pipe laying and cast concrete surround (10m-L, 5.4m3 exca, 2m3 conc,	8	31-Dec-20	09-Jan-21	08-Apr-21	16-Apr-21	76	1
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
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
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
KTD.FP3.1080	Construction of foundation for footpath cover (230m3 conc, 1 team)	12	21-Dec-20	06-Jan-21	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	18-Jan-21	23-Apr-21	0	1
KTD.FP3.1105	Provision of power supply by CLP for lighting system at FP3 (CE028)	76	18-Jan-21	23-Apr-21	18-Jan-21	23-Apr-21	0	1
KTD.FP3.1110	Planned Completion of Additional Footpath and Cover Walkway FP3 under PMI 006	0		23-Apr-21		23-Apr-21	0	2
PROJECT ESTABLISHMENT WORKS		1450	12-Jan-22	31-Dec-25	27-Sep-23	30-Jun-26	181	2
KTD.EW.1000	Establishment works for all landscape softworks (except Parts 3, 4 and 6)	365	19-Jul-23	17-Jul-24	28-Dec-23	26-Dec-24	162	2
KTD.EW.1010	Establishment works for landscape softworks within Part 3 (Subj to excision within 416 days)	365	21-Feb-23	20-Feb-24	26-Feb-24	24-Feb-25	370	2
KTD.EW.1020	Establishment works for landscape softworks within Part 4 (Subj to excision within 244 days)	365	12-Jan-22	11-Jan-23	26-Feb-24	24-Feb-25	775	2
KTD.EW.1030	Establishment works for landscape softworks within Part 6	365	01-Jan-25	31-Dec-25	01-Jul-25	30-Jun-26	181	2
KTD.EW.1040	Establishment works for landscape softworks under Section 1	365	27-Sep-23	25-Sep-24	27-Sep-23	25-Sep-24	0	2
KTD.EW.1050	Planned Contract Completion Date	0		31-Dec-25		30-Jun-26	181	2



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Appendix C – Environmental monitoring schedules

Contract No. EDO 2/2020 Environmental Monitoring at Kai Tak Development – Stage 5B infrastructure works at the former north apron area

Environmental Monitoring and Weekly Site Inspection Schedule for November 2023

November 2023

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

Air Quality Monitoring Station
AM2(A) Ng Wah Catholic Secondary School
AM3 - Sky Tower

Noise Quality Monitoring Station
M4(A) - Le Billionnaire
M5(A) - Prince Ritz

Contract No. EDO 2/2020 Environmental Monitoring at Kai Tak Development – Stage 5B infrastructure works at the former north apron area

Tentative Environmental Monitoring and Weekly Site Inspection Schedule for December 2023

December 2023

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

NOTE:

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

Air Quality Monitoring Station
AM2(A) Ng Wah Catholic Secondary School
AM3 - Sky Tower

Noise Quality Monitoring Station
M4(A) - Le Billionnaire
M5(A) - Prince Ritz

Appendix D – Photographic records

Measurement setup at AM2(A)

Measurement setup at AM3

Weather Station at the rooftop of Ng Wah Catholic Secondary School

Impact Noise Monitoring

	
Measurement setup at M4(A)	Measurement setup at M5(A)

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

TISCH Environmental

TSP MFC

Total Suspended Particulate, Mass Flow Controlled

MFC **TSP**

Ambient Air Sampler

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

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

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

TISCH Environmental

www.tisch-env.com

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

TISCH Environmental

TSP MFC

MFC TSP Ambient Air Sampler

General System Specifications

Particulate Size: Total Suspended Particulate (TSP)
EPA Designation: CFR 40 Part 50 Appendix B
Flow Controller: Mass Flow Controller
Motor Style: Brush Style Motor Assembly
Pressure Recorder: Dickson Chart Recorder, 24 hour
Timer: 7 Day Mechanical
Elapsed Time Indicator: Mechanical, Hours and Tenths
Flow Range: 39-60CFM, 1.09M^3M-1.68M^3M
Housing: Anodized Aluminum
Filter Holder: Stainless Steel, 8" x 10"
4" Recorder Charts: Box of 100
Filter Holder: 8" x 10" Stainless Steel with hold down frame

Applications

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

Optional Equipment

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

Available Models

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

Calibration Equipment

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

Physical Specifications

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

Assembled Dimensions: 28"W x 28"L x 61"H

www.tisch-env.com

TISCH Environmental

Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023042004 Date of calibration : 14/10/2023

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

Serial Number : 4360

Calibration Data

Ambient barometric pressure, Pa = 759.8 (mmHg) Ambient temperature, Ta = 303.15 (deg K)

Calibration Orifice

Model = TE-5025A Qstd Slope, m = 2.01424

Serial No. = 0006 Qstd Intercept, b = 0.02085

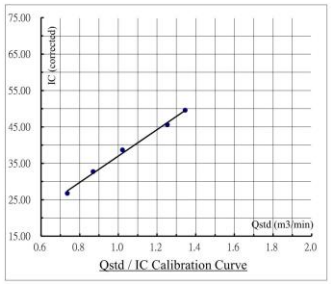
Calibration Due Date: 17/05/2024 Qstd Corr. coeff., r = 0.99999

Calibration Curve

Plate No.	H_2O (in)	Qstd (m^3 / min)	I (chart)	IC (corrected)
18	7.60	1.346	50.0	49.57
13	6.60	1.254	46.0	45.60
10	4.40	1.022	39.0	38.66
7	3.20	0.870	33.0	32.71
5	2.30	0.736	27.0	26.77

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(I) (Sqrt ((Pav / 760) (298 / Tav))) - b1]	36.217	0.7933	0.9975



Qstd / IC Calibration Curve

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

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

IC (corrected) = I [Sqrt ((Pa / 760) (298 / Ta))].

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

Calibrated by : 14/10/2023 Checked by : 14/10/2023

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

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

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2023042001 Date of calibration : 14/10/2023

Model no : Sky Tower Sampler : TE-5170X

Serial Number : 4687

Calibration Data

Ambient barometric pressure, Pa = 759.8 (mmHg) Ambient temperature, Ta = 303.15 (deg K)

Calibration Orifice

Model = TE-5025A Qstd Slope, m = 2.01424

Serial No. = 0006 Qstd Intercept, b = 0.02085

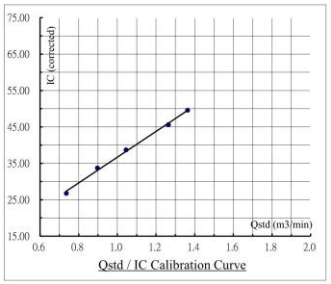
Calibration Due Date: 17/05/2024 Qstd Corr. coeff., r = 0.99999

Calibration Curve

Plate No.	H_2O (in)	Qstd (m^3 / min)	I (chart)	IC (corrected)
18	7.80	1.364	50.0	49.57
13	6.70	1.264	46.0	45.60
10	4.60	1.045	39.0	38.66
7	3.40	0.897	34.0	33.71
5	2.30	0.736	27.0	26.77

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(I) (Sqrt ((Pav / 760) (298 / Tav))) - b1]	35.330	1.3703	0.9983



Qstd / IC Calibration Curve

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

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

IC (corrected) = I [Sqrt ((Pa / 760) (298 / Ta))].

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

Calibrated by : 14/10/2023 Checked by : 14/10/2023

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

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

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

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2022061301 Date of calibration : 19/06/2023

Model no : GS2310 Serial number : 10346

Calibration Data

Ambient barometric pressure, Pa = 755.3 (mmHg) Ambient temperature, Ta = 305.25 (deg K)

Calibration Orifice

Model = TE-5025A Qstd Slope, m = 2.01424

Serial No. = 0006 Qstd Intercept, b = 0.02085

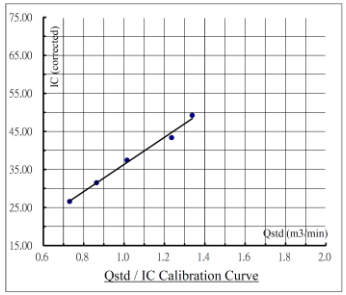
Calibration Due Date: 17/05/2024 Qstd Corr. coeff., r = 0.99999

Calibration Curve

Plate No.	H_2O (in)	Qstd (m^3 / min)	I (chart)	IC (corrected)
18	7.60	1.338	50.0	49.25
13	6.50	1.236	44.0	43.34
10	4.40	1.015	38.0	37.43
7	3.20	0.864	32.0	31.52
5	2.30	0.731	27.0	26.60

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	Qstd = 1 / m1 [(1) (Sqrt ((Pav / 760) (298 / Tav))) - b1]	35.675	0.6397	0.9953



Qstd / IC Calibration Curve

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

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

IC (corrected) = I [Sqrt ((Pa / 760) (298 / Ta))].

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

Calibrated by : 19/06/2023 Checked by : 19/06/2023

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

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

AAST-TSPC-01, Cal: 17 May 2023

TISCH Environmental

RECALIBRATION DUE DATE:
May 17, 2024

Certificate of Calibration

Calibration Certification Information

Cal. Date: May 17, 2023 Rootsmeter S/N: 438320 Ta: 297 °K

Operator: Jim Tisch Pa: 745.0 mm Hg

Calibration Model #: TE-5025A Calibrator S/N: 0006

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

Data Tabulation

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

Calculations

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

For subsequent flow rate calculations:

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

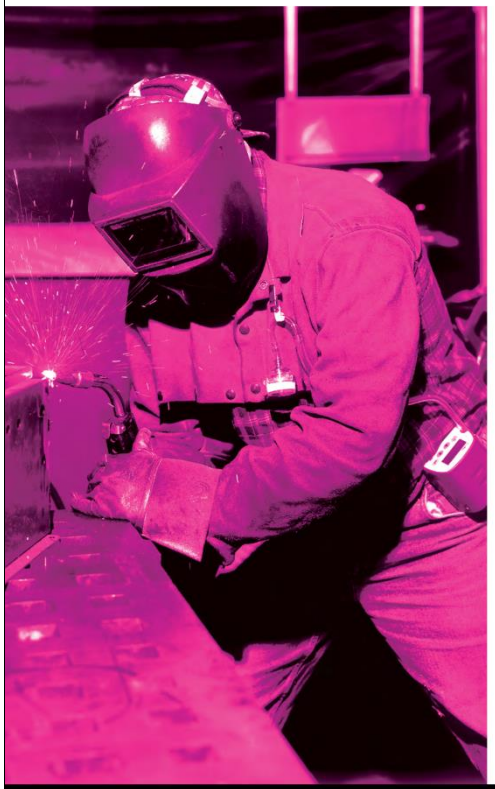
Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

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

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002
www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

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



User Friendly

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

Advanced Features

+ Smart Battery Management System provides precise run time information, maximizes battery capacity and speeds charging
+ Integrated pump allows use of size-selective aerosol inlet conditioners
+ Built-in impactors let you choose "none," 1.0, 2.5 or 10-micron cut off
+ 10-mm Dorr-Oliver cyclone for respirable sampling
+ Display shows real-time concentrations (mg/m^3) and "on-the-fly" TWA as you data log
+ Display statistics: max, min and average readings, elapsed time and 8-hour TWA

Quick and Easy Reports

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

Power to Spare

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

Model AM510
SidePak Personal Aerosol Monitor

Sensitivity

Sensor Type	90° light scattering, 670 nm laser diode
Aerosol Concentration Range	0.001 to 20 mg/m^3 (calibrated to respirable fraction of ISO 12103-1, A1 test dust)
Particle Size Range	0.1 to 10 micrometer (µm)
Minimum Resolution	0.001 mg/m^3
Zero stability	±0.001 mg/m^3 over 24 hours using 10-second time-constant
Temperature Coefficient	Approximately +0.0005 mg/m^3 per °C (for variations from temperature at which instrument was last zeroed)

Flow Rate

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

Temperature Range

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

Operational Humidity
0 to 95% RH, non-condensing

Time Constant (LCD display)

Range	User-adjustable, 1 to 60 seconds

Data Logging

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

User-Select Calibration Factors

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

Physical

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

Power Supply/Charger (P/N 2613210)

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

Maintenance

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

Communications Interface

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

Minimum Computer Requirements for TrakPro™ Data Analysis Software

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

Battery Performance

Battery Options	Charge Time (hrs)*	Intrinsic Safety Rating	Run Time (hrs @ 1.7 L/min)
1600 mAH NiMH Pack, 4.8 V (P/N 801723)	3.0	No	7.1
1650 mAH NiMH Pack, 4.8V (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

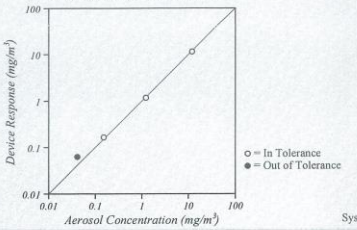
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

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

Model	AM510
Serial Number	11208032

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

Concentration Linearity Plot



System ID: DTI101-02

CONCENTRATION — Unit: mg/m3

#	Standard	Measured	Allowable Range	#	Standard	Measured	Allowable Range
1	1.205	1.108	1.084~1.326	3	0.041	* 0.059	0.029~0.053
2	0.150	0.156	0.128~0.172	4	11.824	10.777	10.642~13.006

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

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

August 8, 2023

TEAN, LEWIS
Verified

Date

Personal Aerosol Monitor Performance check with High Volume Sampler

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

Objective:

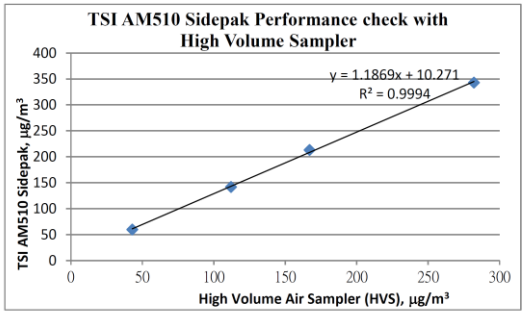
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

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

Resuslt:

Equipment	Measurement Result, μg/m³			
TSI AM510 Sidepak	60	142	213	343
High Volume Air Sampler (HVS)	43	112	167	282



Tested by : Name : (Poon Tsz Wing)

Checked by : Name : (Wong Yin Tong)

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

Calibration Certificate of Dust Meter (TSI Sidepak AM510)

AAST-RSP-07, Cal Cert, 9Aug23

CERTIFICATE OF CALIBRATION AND TESTING

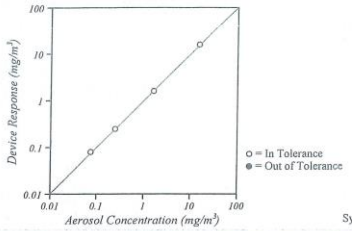
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions		
Temperature	73.99 (23.3)	°F (°C)
Relative Humidity	51.8	%RH
Barometric Pressure	28.83 (976.3)	inHg (hPa)

Model	AM510
Serial Number	11411017

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

Concentration Linearity Plot



System ID: DTII01-01

CONCENTRATION — Unit: mg/m3

#	Standard	Measured	Allowable Range	#	Standard	Measured	Allowable Range
1	1.612	1.529	1.451–1.773	3	0.074	0.075	0.052–0.096
2	0.242	0.234	0.206–0.278	4	15.040	14.957	13.536–16.544

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

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003319	03-17-23	09-30-23	Flowmeter	E004570	06-05-23	06-30-24
DC Voltage(Keithley)	E002455	06-13-23	06-30-24	Microbalance	M001324	02-09-23	02-28-25
Pressure	E005651	07-24-23	07-31-24				

Jan Lewis
Calibrated

August 9, 2023
Date

TSI P/N 2500157

Personal Aerosol Monitor Performance check with High Volume Sampler

Preformance Check ref. No: AS0220602-5 Report Issue Date: 02/06/2023
Date of performance check: 02/06/2023

Objective:

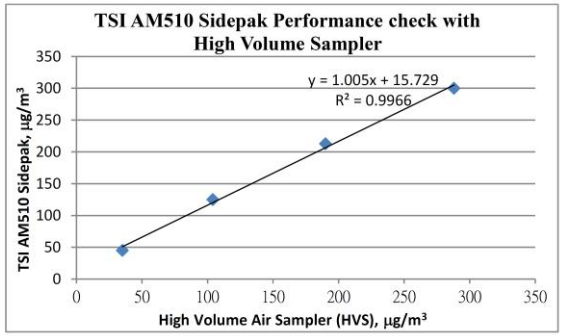
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

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

Resuslt:

Equipment	Measurement Result, μg/m³			
TSI AM510 Sidepak	45	125	213	300
High Volume Air Sampler (HVS)	35	104	190	288



Tested by : 02/06/2023
Name : (Ben Poon)

Checked by : 02/06/2023
Name : (Tommy Wong)

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

Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations

6152C
6162C

Vantage Pro2™

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

Integrated Sensor Suite (ISS)

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

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

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

ISS Dimensions(not including anemometer or bird spikes):

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

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

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

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

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

Wind

Wind Chill (Calculated)

Resolution and Units	1°F or 1°C (user-selectable); °C is converted from °F and rounded to the nearest 1°C
Range	-110° to +135°F (-79° to +57°C)
Accuracy	±2°F (±1°C) (typical)
Update Interval	10 to 12 seconds
Source	United States National Weather Service (NWS)/NOAA
Equation Used	Osczevski (1995) (adopted by US NWS in 2001)
Variables Used	Instant Outside Temperature and 10-min. Avg. Wind Speed
Current Display Data	Instant Calculation
Current Graph Data	Instant Calculation; Hourly, Daily and Monthly Low
Historical Graph Data	Hourly, Daily and Monthly Lows
Alarm	Low Threshold from Instant Calculation

Wind Direction

Range	1 - 360°
Display Resolution	16 points (22.5°) on compass rose, 1° in numeric display
Accuracy	±3°
Update Interval	2.5 to 3 seconds
Current Graph Data	Instant Reading (user adjustable); 10-min. Dominant; Hourly, Daily, Monthly Dominant
Historical Graph Data	Past 6 10-min. Dominants on compass rose only; Hourly, Daily, Monthly Dominants

Wind Speed

Resolution and Units	1 mph, 1 km/h, 0.4 m/s, or 1 knot (user-selectable) Measured in mph; other units are converted from mph and rounded to nearest 1 km/hr, 0.1 m/s, or 1 knot.
Range	0 to 200 mph, 0 to 173 knots, 0 to 89 m/s, 0 to 322 km/h
Update Interval	Instant Reading: 2.5 to 3 seconds, 10-minute Average: 1 minute
Accuracy	±2 mph (2 kts, 3.2 km/h, 0.9 m/s) or ±5%, whichever is greater
Maximum Cable Length	540' (165 m) (Note that maximum wind speed reading decreases as length of cable from anemometer to ISS increases.)
Current Display Data	Instant
Current Graph Data	Instant Reading; 10-minute and Hourly Average; Hourly High; Daily, Monthly and Yearly High with Direction of High
Historical Graph Data	10-min. and Hourly Averages; Hourly Highs; Daily, Monthly and Yearly Highs with Direction of Highs
Alarms	High Thresholds from Instant Reading and 10-minute Average

Calibration Certificate of Weather Station

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

Calibration Certificate No.: CC0072308

Information provided by customer

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

Equipment identification provided by customer

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.:
Weather Station	Davis Vantage PRO 2	6152CUK	BD181101023	AAST-WS-04

Certificate Information

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

Reference Equipment Identification

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

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
Note3: The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long term stability of the instrument.
Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Approved By:

Warren Yeung

Company Chop:

Certificate Issue Date: 17 August 2023

CT-BEG-04

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

Result of Calibration

Temperature

Reference reading (°C)	Reading (°C)	Error (°C)	Uncertainty (°C)
15.0	15	0	2
20.0	20	0	2
25.0	25	0	2
30.0	30	0	2

Relative Humidity

Reference reading (%RH)	Reading (%RH)	Error (%RH)	Uncertainty (%RH)
40.0	39	-1	2
50.0	51	1	2
70.0	72	2	2

Wind Speed

Reference reading (m/s)	Measured reading (m/s)	Error (%)	Uncertainty (%)
0.0	0.0	N/A	3.6
2.0	2.0	0.0	3.6
5.0	4.9	-2.0	3.6
8.0	7.7	-3.8	3.6

Wind Direction

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

*** End of Certificate ***

Appendix F – Weather information

General Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)	Total Rainfall (mm)	Mean Relative Humidity (%)
01/11/2023	23.6	29.1	0	70
02/11/2023	24.4	28.4	0	75
03/11/2023	24.3	29.1	0	78
04/11/2023	24.7	29.4	0	76
05/11/2023	25	30.1	0	77
06/11/2023	25.3	30.7	0	65
07/11/2023	25.3	26.8	0	70
08/11/2023	24.7	26	0	77
09/11/2023	24.8	27.3	Trace	81
10/11/2023	25.6	29.3	0	82
11/11/2023	24.8	26.5	2.5	85
12/11/2023	22	26.6	0.6	77
13/11/2023	20.3	25.2	0	67
14/11/2023	18.9	23.9	0	70
15/11/2023	20.7	25.2	0	71
16/11/2023	17.3	24	0	65
17/11/2023	15.6	21.9	0	37
18/11/2023	16.6	23	0	42
19/11/2023	18.5	23.3	0	59
20/11/2023	19	24.6	0	65
21/11/2023	20.3	24.6	0	70
22/11/2023	20.5	25.7	0	73
23/11/2023	20.5	26.3	0	74
24/11/2023	21.5	25	0	67
25/11/2023	20	24.3	0	66
26/11/2023	19.8	25.3	0	68
27/11/2023	20.2	26.7	0	68
28/11/2023	20.2	25.4	Trace	61
29/11/2023	21.2	24	0.2	73
30/11/2023	21.9	26	0	73

NOTE1: The above weather information was obtained from manned weather station of Hong Kong Observatory.
NOTE2: Trace means rainfall less than 0.12 mm

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

Kai Tak Runway Park Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)
01/11/2023	23.6	29.2
02/11/2023	24.3	27.4
03/11/2023	24.3	28.6
04/11/2023	24.6	29.4
05/11/2023	24.8	29.7
06/11/2023	25.1	32.0
07/11/2023	25.4	27.1
08/11/2023	24.5	25.7
09/11/2023	24.6	26.8
10/11/2023	25.5	29.1
11/11/2023	24.5	26.3
12/11/2023	22.0	26.4
13/11/2023	20.4	25.5
14/11/2023	19.1	24.6
15/11/2023	20.6	25.3
16/11/2023	17.1	24.4
17/11/2023	15.9	22.9
18/11/2023	16.5	23.8
19/11/2023	18.7	23.6
20/11/2023	19.0	25.4
21/11/2023	20.1	25.6
22/11/2023	20.5	26.4
23/11/2023	20.1	27.8
24/11/2023	21.5	25.4
25/11/2023	19.8	24.8
26/11/2023	19.4	26.0
27/11/2023	19.8	28.4
28/11/2023	20.5	25.5
29/11/2023	20.8	24.2
30/11/2023	21.7	26.8

NOTE1: The above weather information was obtained from manned weather station of Kai Tak Runway Park.

https://i-lens.hk/hkweather/history_chart.php?date=2023-11-01&chart_type=DG_TEMP

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/11/2023	0:00	0.4	135	02/11/2023	0:00	0.4	112.5	03/11/2023	0:00	0.9	90	04/11/2023	0:00	1.3	270
01/11/2023	1:00	0.4	112.5	02/11/2023	1:00	0.9	112.5	03/11/2023	1:00	1.3	112.5	04/11/2023	1:00	0.9	270
01/11/2023	2:00	0.4	112.5	02/11/2023	2:00	0.9	90	03/11/2023	2:00	1.8	112.5	04/11/2023	2:00	1.3	247.5
01/11/2023	3:00	0.4	112.5	02/11/2023	3:00	0.4	90	03/11/2023	3:00	2.2	112.5	04/11/2023	3:00	1.8	270
01/11/2023	4:00	0.4	135	02/11/2023	4:00	0.4	112.5	03/11/2023	4:00	1.3	315	04/11/2023	4:00	2.2	270
01/11/2023	5:00	0.4	112.5	02/11/2023	5:00	0.9	112.5	03/11/2023	5:00	0.4	337.5	04/11/2023	5:00	1.3	247.5
01/11/2023	6:00	0.4	112.5	02/11/2023	6:00	1.3	90	03/11/2023	6:00	1.3	112.5	04/11/2023	6:00	0.9	247.5
01/11/2023	7:00	0.4	112.5	02/11/2023	7:00	1.3	90	03/11/2023	7:00	1.8	90	04/11/2023	7:00	0.4	90
01/11/2023	8:00	0.4	112.5	02/11/2023	8:00	0.9	112.5	03/11/2023	8:00	1.3	112.5	04/11/2023	8:00	0.4	90
01/11/2023	9:00	0.4	315	02/11/2023	9:00	0.4	112.5	03/11/2023	9:00	1.3	112.5	04/11/2023	9:00	0.4	112.5
01/11/2023	10:00	0.4	337.5	02/11/2023	10:00	0.9	112.5	03/11/2023	10:00	1.8	90	04/11/2023	10:00	0.4	112.5
01/11/2023	11:00	0.4	112.5	02/11/2023	11:00	0.9	90	03/11/2023	11:00	1.8	90	04/11/2023	11:00	0.4	135
01/11/2023	12:00	0.9	90	02/11/2023	12:00	0.4	90	03/11/2023	12:00	1.3	22.5	04/11/2023	12:00	0.4	112.5
01/11/2023	13:00	0.4	112.5	02/11/2023	13:00	0.4	112.5	03/11/2023	13:00	1.3	45	04/11/2023	13:00	0.4	112.5
01/11/2023	14:00	0.4	112.5	02/11/2023	14:00	0.9	112.5	03/11/2023	14:00	1.8	45	04/11/2023	14:00	0.4	112.5
01/11/2023	15:00	0.4	112.5	02/11/2023	15:00	1.3	90	03/11/2023	15:00	1.8	112.5	04/11/2023	15:00	0.4	112.5
01/11/2023	16:00	0.4	135	02/11/2023	16:00	1.3	90	03/11/2023	16:00	2.2	112.5	04/11/2023	16:00	0.4	315
01/11/2023	17:00	0.4	112.5	02/11/2023	17:00	0.4	135	03/11/2023	17:00	2.7	337.5	04/11/2023	17:00	0.4	337.5
01/11/2023	18:00	0.4	112.5	02/11/2023	18:00	0	135	03/11/2023	18:00	2.2	112.5	04/11/2023	18:00	0.4	112.5
01/11/2023	19:00	0.4	112.5	02/11/2023	19:00	0.4	135	03/11/2023	19:00	2.2	45	04/11/2023	19:00	0.9	90
01/11/2023	20:00	0.4	112.5	02/11/2023	20:00	0.4	135	03/11/2023	20:00	2.7	112.5	04/11/2023	20:00	0.4	112.5
01/11/2023	21:00	0.4	315	02/11/2023	21:00	0.4	112.5	03/11/2023	21:00	1.3	90	04/11/2023	21:00	0.9	112.5
01/11/2023	22:00	0.4	337.5	02/11/2023	22:00	0.9	112.5	03/11/2023	22:00	1.3	90	04/11/2023	22:00	0.4	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/11/2023	23:00	0.4	112.5	02/11/2023	23:00	0.4	112.5	03/11/2023	23:00	0.4	90	04/11/2023	23:00	0.9	112.5
05/11/2023	0:00	0.9	112.5	06/11/2023	0:00	0.4	135	07/11/2023	0:00	0.9	157.5	08/11/2023	0:00	0.4	157.5
05/11/2023	1:00	2.2	112.5	06/11/2023	1:00	0.4	67.5	07/11/2023	1:00	0.9	22.5	08/11/2023	1:00	0.9	157.5
05/11/2023	2:00	1.8	90	06/11/2023	2:00	1.3	112.5	07/11/2023	2:00	0.4	22.5	08/11/2023	2:00	0.9	22.5
05/11/2023	3:00	1.8	112.5	06/11/2023	3:00	0.9	135	07/11/2023	3:00	0.4	45	08/11/2023	3:00	0.4	22.5
05/11/2023	4:00	1.8	90	06/11/2023	4:00	0.4	112.5	07/11/2023	4:00	0.9	135	08/11/2023	4:00	0.4	45
05/11/2023	5:00	1.8	90	06/11/2023	5:00	0.9	112.5	07/11/2023	5:00	0.9	112.5	08/11/2023	5:00	0.9	135
05/11/2023	6:00	1.8	67.5	06/11/2023	6:00	0.9	90	07/11/2023	6:00	1.3	135	08/11/2023	6:00	0.4	112.5
05/11/2023	7:00	1.3	157.5	06/11/2023	7:00	0.9	292.5	07/11/2023	7:00	1.3	135	08/11/2023	7:00	0.4	135
05/11/2023	8:00	1.3	225	06/11/2023	8:00	0.9	112.5	07/11/2023	8:00	0.9	22.5	08/11/2023	8:00	0.4	112.5
05/11/2023	9:00	0.9	22.5	06/11/2023	9:00	0.9	247.5	07/11/2023	9:00	0.4	112.5	08/11/2023	9:00	0.4	90
05/11/2023	10:00	0.9	22.5	06/11/2023	10:00	0.9	247.5	07/11/2023	10:00	0.4	112.5	08/11/2023	10:00	0.9	90
05/11/2023	11:00	1.3	337.5	06/11/2023	11:00	1.3	315	07/11/2023	11:00	1.3	112.5	08/11/2023	11:00	1.3	135
05/11/2023	12:00	1.8	270	06/11/2023	12:00	0.9	157.5	07/11/2023	12:00	0.4	112.5	08/11/2023	12:00	1.3	90
05/11/2023	13:00	0.9	337.5	06/11/2023	13:00	0.9	22.5	07/11/2023	13:00	0.9	292.5	08/11/2023	13:00	0.4	315
05/11/2023	14:00	0.9	90	06/11/2023	14:00	0.4	22.5	07/11/2023	14:00	0.4	112.5	08/11/2023	14:00	0.4	67.5
05/11/2023	15:00	0.9	22.5	06/11/2023	15:00	0.4	45	07/11/2023	15:00	0.4	112.5	08/11/2023	15:00	1.3	112.5
05/11/2023	16:00	0.9	22.5	06/11/2023	16:00	0.9	135	07/11/2023	16:00	0.4	135	08/11/2023	16:00	0.9	135
05/11/2023	17:00	0.9	22.5	06/11/2023	17:00	0.9	112.5	07/11/2023	17:00	0.9	135	08/11/2023	17:00	0.4	112.5
05/11/2023	18:00	0.4	22.5	06/11/2023	18:00	1.3	135	07/11/2023	18:00	0.4	112.5	08/11/2023	18:00	0.9	112.5
05/11/2023	19:00	0.4	90	06/11/2023	19:00	1.3	135	07/11/2023	19:00	0.9	67.5	08/11/2023	19:00	0.9	90
05/11/2023	20:00	0.4	90	06/11/2023	20:00	0.9	22.5	07/11/2023	20:00	0.9	112.5	08/11/2023	20:00	0.9	67.5
05/11/2023	21:00	0.4	90	06/11/2023	21:00	0.4	112.5	07/11/2023	21:00	0.9	337.5	08/11/2023	21:00	0.9	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
05/11/2023	22:00	0.9	247.5	06/11/2023	22:00	0.4	112.5	07/11/2023	22:00	0.4	247.5	08/11/2023	22:00	0.9	337.5
05/11/2023	23:00	0.4	180	06/11/2023	23:00	1.3	112.5	07/11/2023	23:00	0.4	247.5	08/11/2023	23:00	0.9	337.5
09/11/2023	0:00	0.9	157.5	10/11/2023	0:00	0.9	22.5	11/11/2023	0:00	0.9	157.5	12/11/2023	0:00	0.4	22.5
09/11/2023	1:00	0.4	202.5	10/11/2023	1:00	1.3	22.5	11/11/2023	1:00	0.4	135	12/11/2023	1:00	0.4	22.5
09/11/2023	2:00	0.4	112.5	10/11/2023	2:00	1.3	45	11/11/2023	2:00	0.9	157.5	12/11/2023	2:00	0.9	45
09/11/2023	3:00	1.3	157.5	10/11/2023	3:00	0.9	135	11/11/2023	3:00	0.9	202.5	12/11/2023	3:00	0.9	135
09/11/2023	4:00	0.9	90	10/11/2023	4:00	0.4	112.5	11/11/2023	4:00	0.9	135	12/11/2023	4:00	1.3	112.5
09/11/2023	5:00	0.4	90	10/11/2023	5:00	0.9	135	11/11/2023	5:00	0.9	315	12/11/2023	5:00	1.3	135
09/11/2023	6:00	0.4	22.5	10/11/2023	6:00	1.3	135	11/11/2023	6:00	0.9	112.5	12/11/2023	6:00	0.9	135
09/11/2023	7:00	1.3	90	10/11/2023	7:00	0.9	22.5	11/11/2023	7:00	0.9	225	12/11/2023	7:00	0.4	22.5
09/11/2023	8:00	0.9	45	10/11/2023	8:00	0.4	112.5	11/11/2023	8:00	0.9	225	12/11/2023	8:00	0.4	112.5
09/11/2023	9:00	0.4	90	10/11/2023	9:00	0.4	112.5	11/11/2023	9:00	1.3	157.5	12/11/2023	9:00	1.3	112.5
09/11/2023	10:00	0.9	90	10/11/2023	10:00	1.3	112.5	11/11/2023	10:00	0.9	112.5	12/11/2023	10:00	0.9	112.5
09/11/2023	11:00	0.9	112.5	10/11/2023	11:00	0.9	112.5	11/11/2023	11:00	0.4	180	12/11/2023	11:00	0.4	112.5
09/11/2023	12:00	0.9	202.5	10/11/2023	12:00	0.4	315	11/11/2023	12:00	0.4	67.5	12/11/2023	12:00	0.4	112.5
09/11/2023	13:00	0.9	45	10/11/2023	13:00	0.9	67.5	11/11/2023	13:00	1.3	112.5	12/11/2023	13:00	1.3	135
09/11/2023	14:00	0.9	45	10/11/2023	14:00	1.3	90	11/11/2023	14:00	0.9	135	12/11/2023	14:00	0.9	90
09/11/2023	15:00	1.8	90	10/11/2023	15:00	1.8	90	11/11/2023	15:00	0.4	112.5	12/11/2023	15:00	1.8	157.5
09/11/2023	16:00	1.3	112.5	10/11/2023	16:00	0.9	90	11/11/2023	16:00	0.9	112.5	12/11/2023	16:00	1.8	90
09/11/2023	17:00	1.8	112.5	10/11/2023	17:00	1.3	112.5	11/11/2023	17:00	0.9	90	12/11/2023	17:00	1.8	112.5
09/11/2023	18:00	2.7	135	10/11/2023	18:00	0.9	22.5	11/11/2023	18:00	0.9	292.5	12/11/2023	18:00	1.8	112.5
09/11/2023	19:00	2.2	112.5	10/11/2023	19:00	1.3	22.5	11/11/2023	19:00	0.9	112.5	12/11/2023	19:00	1.3	112.5
09/11/2023	20:00	1.8	135	10/11/2023	20:00	1.3	22.5	11/11/2023	20:00	0.9	337.5	12/11/2023	20:00	1.3	90

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
09/11/2023	21:00	1.8	90	10/11/2023	21:00	0.4	22.5	11/11/2023	21:00	0.4	247.5	12/11/2023	21:00	0.9	112.5
09/11/2023	22:00	0.4	112.5	10/11/2023	22:00	0.4	22.5	11/11/2023	22:00	0.4	157.5	12/11/2023	22:00	0.9	135
09/11/2023	23:00	0.4	112.5	10/11/2023	23:00	0.9	22.5	11/11/2023	23:00	0.4	157.5	12/11/2023	23:00	0.9	112.5
13/11/2023	0:00	0.4	22.5	14/11/2023	0:00	0.9	157.5	15/11/2023	0:00	1.8	135	16/11/2023	0:00	0.9	135
13/11/2023	1:00	0.4	22.5	14/11/2023	1:00	0.9	22.5	15/11/2023	1:00	0.9	67.5	16/11/2023	1:00	0.9	112.5
13/11/2023	2:00	0.9	45	14/11/2023	2:00	0.4	22.5	15/11/2023	2:00	1.3	112.5	16/11/2023	2:00	0.9	135
13/11/2023	3:00	0.4	135	14/11/2023	3:00	0.4	45	15/11/2023	3:00	0.9	112.5	16/11/2023	3:00	1.3	112.5
13/11/2023	4:00	0.4	112.5	14/11/2023	4:00	0.9	135	15/11/2023	4:00	0.4	135	16/11/2023	4:00	0.9	135
13/11/2023	5:00	0.9	135	14/11/2023	5:00	0.9	112.5	15/11/2023	5:00	0.4	135	16/11/2023	5:00	1.3	67.5
13/11/2023	6:00	0.4	135	14/11/2023	6:00	0.4	135	15/11/2023	6:00	0.4	135	16/11/2023	6:00	1.3	157.5
13/11/2023	7:00	0.9	22.5	14/11/2023	7:00	0	135	15/11/2023	7:00	0.9	67.5	16/11/2023	7:00	1.3	135
13/11/2023	8:00	0.4	45	14/11/2023	8:00	0	22.5	15/11/2023	8:00	0.9	157.5	16/11/2023	8:00	1.3	112.5
13/11/2023	9:00	0.4	135	14/11/2023	9:00	0	112.5	15/11/2023	9:00	0.9	67.5	16/11/2023	9:00	0.9	112.5
13/11/2023	10:00	0.4	202.5	14/11/2023	10:00	0	112.5	15/11/2023	10:00	0.4	112.5	16/11/2023	10:00	0.9	135
13/11/2023	11:00	0.4	202.5	14/11/2023	11:00	0.9	135	15/11/2023	11:00	0.9	112.5	16/11/2023	11:00	0.9	112.5
13/11/2023	12:00	0.9	135	14/11/2023	12:00	0.9	135	15/11/2023	12:00	0	22.5	16/11/2023	12:00	0.9	135
13/11/2023	13:00	0.4	112.5	14/11/2023	13:00	0.9	112.5	15/11/2023	13:00	0.4	45	16/11/2023	13:00	0.9	135
13/11/2023	14:00	0.9	112.5	14/11/2023	14:00	0.9	90	15/11/2023	14:00	0.4	315	16/11/2023	14:00	0.9	112.5
13/11/2023	15:00	0.4	112.5	14/11/2023	15:00	0.9	90	15/11/2023	15:00	0.4	112.5	16/11/2023	15:00	0.9	135
13/11/2023	16:00	0.4	135	14/11/2023	16:00	0.9	90	15/11/2023	16:00	0.4	135	16/11/2023	16:00	1.3	67.5
13/11/2023	17:00	0.4	270	14/11/2023	17:00	0.9	90	15/11/2023	17:00	0.4	112.5	16/11/2023	17:00	1.3	157.5
13/11/2023	18:00	0.4	135	14/11/2023	18:00	0.9	90	15/11/2023	18:00	0.4	45	16/11/2023	18:00	1.3	135
13/11/2023	19:00	0.4	90	14/11/2023	19:00	0.9	90	15/11/2023	19:00	0.4	315	16/11/2023	19:00	1.3	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
13/11/2023	20:00	0.4	22.5	14/11/2023	20:00	0.4	90	15/11/2023	20:00	0.4	112.5	16/11/2023	20:00	0.9	112.5
13/11/2023	21:00	0.4	112.5	14/11/2023	21:00	1.8	90	15/11/2023	21:00	0.4	135	16/11/2023	21:00	0.9	135
13/11/2023	22:00	0.4	90	14/11/2023	22:00	1.3	135	15/11/2023	22:00	0.4	112.5	16/11/2023	22:00	0.9	112.5
13/11/2023	23:00	0.4	67.5	14/11/2023	23:00	1.3	112.5	15/11/2023	23:00	1.3	90	16/11/2023	23:00	0.9	135

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/11/2023	0:00	0.9	112.5	18/11/2023	0:00	0.9	292.5	19/11/2023	0:00	1.3	90	20/11/2023	0:00	0.4	22.5
17/11/2023	1:00	0.9	67.5	18/11/2023	1:00	0.9	112.5	19/11/2023	1:00	1.3	135	20/11/2023	1:00	0.9	337.5
17/11/2023	2:00	0.9	112.5	18/11/2023	2:00	0.9	135	19/11/2023	2:00	0.9	135	20/11/2023	2:00	0.9	45
17/11/2023	3:00	0.4	337.5	18/11/2023	3:00	0.9	135	19/11/2023	3:00	1.3	112.5	20/11/2023	3:00	1.3	90
17/11/2023	4:00	0.9	67.5	18/11/2023	4:00	1.3	135	19/11/2023	4:00	0.9	202.5	20/11/2023	4:00	1.3	45
17/11/2023	5:00	1.3	67.5	18/11/2023	5:00	0.9	315	19/11/2023	5:00	0.4	180	20/11/2023	5:00	1.3	112.5
17/11/2023	6:00	0.9	90	18/11/2023	6:00	1.3	112.5	19/11/2023	6:00	0.4	337.5	20/11/2023	6:00	1.3	45
17/11/2023	7:00	0.9	90	18/11/2023	7:00	0.9	135	19/11/2023	7:00	0.9	112.5	20/11/2023	7:00	1.3	90
17/11/2023	8:00	0.9	67.5	18/11/2023	8:00	0.4	45	19/11/2023	8:00	0.4	135	20/11/2023	8:00	0.9	67.5
17/11/2023	9:00	0.4	112.5	18/11/2023	9:00	1.3	337.5	19/11/2023	9:00	0.4	135	20/11/2023	9:00	1.3	67.5
17/11/2023	10:00	0.9	67.5	18/11/2023	10:00	0.9	202.5	19/11/2023	10:00	0.4	135	20/11/2023	10:00	1.8	67.5
17/11/2023	11:00	1.3	112.5	18/11/2023	11:00	1.3	45	19/11/2023	11:00	0.4	112.5	20/11/2023	11:00	1.3	67.5
17/11/2023	12:00	0.9	112.5	18/11/2023	12:00	0.9	112.5	19/11/2023	12:00	0.4	112.5	20/11/2023	12:00	0.9	135
17/11/2023	13:00	1.8	112.5	18/11/2023	13:00	0.4	337.5	19/11/2023	13:00	0.9	112.5	20/11/2023	13:00	0.4	135

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/11/2023	14:00	0.4	112.5	18/11/2023	14:00	0.9	67.5	19/11/2023	14:00	2.2	112.5	20/11/2023	14:00	1.3	45
17/11/2023	15:00	1.3	157.5	18/11/2023	15:00	1.3	67.5	19/11/2023	15:00	2.2	112.5	20/11/2023	15:00	0.4	90
17/11/2023	16:00	1.3	90	18/11/2023	16:00	0.9	90	19/11/2023	16:00	2.2	112.5	20/11/2023	16:00	0.4	45
17/11/2023	17:00	0.9	90	18/11/2023	17:00	0.9	90	19/11/2023	17:00	2.2	67.5	20/11/2023	17:00	0.4	112.5
17/11/2023	18:00	1.3	22.5	18/11/2023	18:00	0.4	90	19/11/2023	18:00	0.4	67.5	20/11/2023	18:00	1.3	45
17/11/2023	19:00	1.3	90	18/11/2023	19:00	0.9	90	19/11/2023	19:00	0.9	112.5	20/11/2023	19:00	0.9	90
17/11/2023	20:00	1.8	45	18/11/2023	20:00	0.4	90	19/11/2023	20:00	0.9	90	20/11/2023	20:00	1.3	67.5
17/11/2023	21:00	1.8	90	18/11/2023	21:00	0.4	90	19/11/2023	21:00	1.3	112.5	20/11/2023	21:00	0.9	67.5
17/11/2023	22:00	0.9	90	18/11/2023	22:00	0.4	90	19/11/2023	22:00	1.3	67.5	20/11/2023	22:00	0.9	67.5
17/11/2023	23:00	1.8	90	18/11/2023	23:00	0.9	22.5	19/11/2023	23:00	1.3	67.5	20/11/2023	23:00	0.9	67.5
21/11/2023	0:00	0.4	90	22/11/2023	0:00	0.4	112.5	23/11/2023	0:00	0.4	90	24/11/2023	0:00	1.3	45
21/11/2023	1:00	0.4	270	22/11/2023	1:00	1.3	45	23/11/2023	1:00	0.9	90	24/11/2023	1:00	0.9	270
21/11/2023	2:00	0.4	112.5	22/11/2023	2:00	0.9	90	23/11/2023	2:00	0.9	67.5	24/11/2023	2:00	0.9	90
21/11/2023	3:00	0.4	45	22/11/2023	3:00	0.9	90	23/11/2023	3:00	0.4	90	24/11/2023	3:00	0.9	337.5
21/11/2023	4:00	1.3	90	22/11/2023	4:00	0.4	67.5	23/11/2023	4:00	0.4	45	24/11/2023	4:00	1.3	90
21/11/2023	5:00	0.4	90	22/11/2023	5:00	0.4	90	23/11/2023	5:00	1.3	270	24/11/2023	5:00	0.4	112.5
21/11/2023	6:00	0.4	67.5	22/11/2023	6:00	0.9	45	23/11/2023	6:00	1.3	90	24/11/2023	6:00	1.3	67.5
21/11/2023	7:00	0.9	90	22/11/2023	7:00	0.4	270	23/11/2023	7:00	0.4	337.5	24/11/2023	7:00	0.9	67.5
21/11/2023	8:00	0.4	45	22/11/2023	8:00	0.4	90	23/11/2023	8:00	0.4	90	24/11/2023	8:00	0.9	67.5
21/11/2023	9:00	0.4	270	22/11/2023	9:00	0.9	337.5	23/11/2023	9:00	1.3	112.5	24/11/2023	9:00	0.9	67.5
21/11/2023	10:00	0.4	90	22/11/2023	10:00	0.4	90	23/11/2023	10:00	1.3	67.5	24/11/2023	10:00	0.4	67.5
21/11/2023	11:00	0.4	45	22/11/2023	11:00	0.4	112.5	23/11/2023	11:00	0.9	90	24/11/2023	11:00	0.4	67.5
21/11/2023	12:00	0.4	90	22/11/2023	12:00	1.3	67.5	23/11/2023	12:00	0.9	247.5	24/11/2023	12:00	0.9	67.5
21/11/2023	13:00	0.4	90	22/11/2023	13:00	1.3	112.5	23/11/2023	13:00	0.4	135	24/11/2023	13:00	0.4	67.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
21/11/2023	14:00	0.4	67.5	22/11/2023	14:00	0.9	90	23/11/2023	14:00	0	135	24/11/2023	14:00	0.4	67.5
21/11/2023	15:00	0.9	90	22/11/2023	15:00	1.8	225	23/11/2023	15:00	0.4	90	24/11/2023	15:00	0.9	67.5
21/11/2023	16:00	0.4	45	22/11/2023	16:00	0.4	67.5	23/11/2023	16:00	0.4	135	24/11/2023	16:00	0.4	90
21/11/2023	17:00	0.9	270	22/11/2023	17:00	0.9	67.5	23/11/2023	17:00	0.4	22.5	24/11/2023	17:00	0.4	112.5
21/11/2023	18:00	0.9	90	22/11/2023	18:00	0.4	67.5	23/11/2023	18:00	0.9	135	24/11/2023	18:00	1.3	67.5
21/11/2023	19:00	0.9	337.5	22/11/2023	19:00	0.4	67.5	23/11/2023	19:00	0.9	112.5	24/11/2023	19:00	0.9	90
21/11/2023	20:00	1.3	90	22/11/2023	20:00	0.4	67.5	23/11/2023	20:00	0.4	112.5	24/11/2023	20:00	0.9	90
21/11/2023	21:00	1.3	180	22/11/2023	21:00	0.9	90	23/11/2023	21:00	0.4	112.5	24/11/2023	21:00	0.9	135
21/11/2023	22:00	1.3	180	22/11/2023	22:00	0.9	90	23/11/2023	22:00	0.9	112.5	24/11/2023	22:00	0.9	112.5
21/11/2023	23:00	1.3	90	22/11/2023	23:00	0.4	112.5	23/11/2023	23:00	0.9	225	24/11/2023	23:00	0.9	112.5
25/11/2023	0:00	0.4	67.5	26/11/2023	0:00	0.9	112.5	27/11/2023	0:00	1.3	45	28/11/2023	0:00	0.9	90
25/11/2023	1:00	0.9	225	26/11/2023	1:00	0.9	112.5	27/11/2023	1:00	0.4	45	28/11/2023	1:00	0.9	67.5
25/11/2023	2:00	0.9	67.5	26/11/2023	2:00	0.9	90	27/11/2023	2:00	0.9	247.5	28/11/2023	2:00	0.4	112.5
25/11/2023	3:00	1.8	225	26/11/2023	3:00	0.9	135	27/11/2023	3:00	0.9	247.5	28/11/2023	3:00	0.4	90
25/11/2023	4:00	1.8	90	26/11/2023	4:00	0.4	247.5	27/11/2023	4:00	0.9	247.5	28/11/2023	4:00	0.9	112.5
25/11/2023	5:00	0.9	112.5	26/11/2023	5:00	0.9	180	27/11/2023	5:00	0.4	247.5	28/11/2023	5:00	0.9	90
25/11/2023	6:00	1.3	225	26/11/2023	6:00	0.9	135	27/11/2023	6:00	0.9	45	28/11/2023	6:00	0.9	315
25/11/2023	7:00	0.9	247.5	26/11/2023	7:00	0.4	90	27/11/2023	7:00	0.9	45	28/11/2023	7:00	0.4	315
25/11/2023	8:00	0.4	67.5	26/11/2023	8:00	1.3	90	27/11/2023	8:00	0.9	67.5	28/11/2023	8:00	0.9	90
25/11/2023	9:00	0.4	67.5	26/11/2023	9:00	0.9	90	27/11/2023	9:00	1.3	67.5	28/11/2023	9:00	0.9	270
25/11/2023	10:00	0.4	67.5	26/11/2023	10:00	1.3	22.5	27/11/2023	10:00	1.8	90	28/11/2023	10:00	0.9	157.5
25/11/2023	11:00	0.9	67.5	26/11/2023	11:00	0.9	22.5	27/11/2023	11:00	1.3	247.5	28/11/2023	11:00	0.9	45
25/11/2023	12:00	0.4	67.5	26/11/2023	12:00	0.9	22.5	27/11/2023	12:00	1.3	247.5	28/11/2023	12:00	1.3	45
25/11/2023	13:00	0.4	90	26/11/2023	13:00	0.9	22.5	27/11/2023	13:00	1.3	247.5	28/11/2023	13:00	0.4	45

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
25/11/2023	14:00	0.4	90	26/11/2023	14:00	1.3	22.5	27/11/2023	14:00	1.3	247.5	28/11/2023	14:00	0.9	45
25/11/2023	15:00	1.3	67.5	26/11/2023	15:00	1.3	90	27/11/2023	15:00	1.3	270	28/11/2023	15:00	0.9	45
25/11/2023	16:00	0.9	315	26/11/2023	16:00	1.3	135	27/11/2023	16:00	1.3	270	28/11/2023	16:00	0.9	45
25/11/2023	17:00	0.9	315	26/11/2023	17:00	1.3	112.5	27/11/2023	17:00	1.3	270	28/11/2023	17:00	0.4	45
25/11/2023	18:00	0.9	90	26/11/2023	18:00	1.3	135	27/11/2023	18:00	1.3	270	28/11/2023	18:00	0.9	45
25/11/2023	19:00	0.9	270	26/11/2023	19:00	1.3	112.5	27/11/2023	19:00	1.3	45	28/11/2023	19:00	0.9	45
25/11/2023	20:00	0.9	112.5	26/11/2023	20:00	1.3	135	27/11/2023	20:00	1.3	45	28/11/2023	20:00	0.9	67.5
25/11/2023	21:00	0.9	45	26/11/2023	21:00	1.3	90	27/11/2023	21:00	1.3	45	28/11/2023	21:00	1.3	67.5
25/11/2023	22:00	1.3	90	26/11/2023	22:00	1.3	157.5	27/11/2023	22:00	1.3	45	28/11/2023	22:00	1.8	90
25/11/2023	23:00	0.9	90	26/11/2023	23:00	0.9	247.5	27/11/2023	23:00	2.2	112.5	28/11/2023	23:00	2.2	90
29/11/2023	0:00	0.4	112.5	30/11/2023	0:00	0.4	45								
29/11/2023	1:00	0.4	135	30/11/2023	1:00	1.3	45								
29/11/2023	2:00	0.4	315	30/11/2023	2:00	1.3	45								
29/11/2023	3:00	0.9	90	30/11/2023	3:00	0.4	45								
29/11/2023	4:00	0.9	270	30/11/2023	4:00	0.9	45								
29/11/2023	5:00	0.4	112.5	30/11/2023	5:00	0.9	90								
29/11/2023	6:00	1.3	45	30/11/2023	6:00	0.9	135								
29/11/2023	7:00	0.9	90	30/11/2023	7:00	0.9	90								
29/11/2023	8:00	0.9	90	30/11/2023	8:00	0.9	270								
29/11/2023	9:00	0.4	67.5	30/11/2023	9:00	0.9	112.5								
29/11/2023	10:00	0.4	90	30/11/2023	10:00	0.9	45								
29/11/2023	11:00	0.9	45	30/11/2023	11:00	0.9	90								
29/11/2023	12:00	0.4	270	30/11/2023	12:00	0.4	90								
29/11/2023	13:00	0.4	90	30/11/2023	13:00	0.4	67.5								

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
29/11/2023	14:00	0.9	337.5	30/11/2023	14:00	1.8	90								
29/11/2023	15:00	0.9	90	30/11/2023	15:00	1.8	45								
29/11/2023	16:00	0.9	45	30/11/2023	16:00	1.8	270								
29/11/2023	17:00	0.9	45	30/11/2023	17:00	1.3	90								
29/11/2023	18:00	0.9	45	30/11/2023	18:00	0.9	90								
29/11/2023	19:00	0.9	45	30/11/2023	19:00	0.4	45								
29/11/2023	20:00	0.9	45	30/11/2023	20:00	0.9	45								
29/11/2023	21:00	2.2	90	30/11/2023	21:00	0.9	45								
29/11/2023	22:00	1.8	90	30/11/2023	22:00	0.9	45								
29/11/2023	23:00	1.8	90	30/11/2023	23:00	0.4	45								

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

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

Start Date	Weather	Air Temp. (℃)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
02/11/2023	Sunny	27.4	1015.5	18.0796	18.1411	0.0615	2023/11/2 9:20	2023/11/3 9:20	1440	50	50	1.35	1951	32
08/11/2023	Sunny	25.7	1015.8	18.1884	18.2545	0.0661	2023/11/8 13:30	2023/11/9 13:30	1440	52	52	1.41	2036	32
14/11/2023	Cloudy	18.8	1022.6	14.9422	15.0276	0.0854	2023/11/14 9:15	2023/11/15 9:15	1440	52	52	1.44	2067	41
20/11/2023	Sunny	25.4	1019.4	18.1503	18.2311	0.0808	2023/11/20 9:05	2023/11/21 9:05	1440	52	52	1.42	2041	40
25/11/2023	Sunny	24.8	1021	18.1193	18.2203	0.1010	2023/11/25 13:05	2023/11/26 13:05	1440	50	50	1.36	1965	51

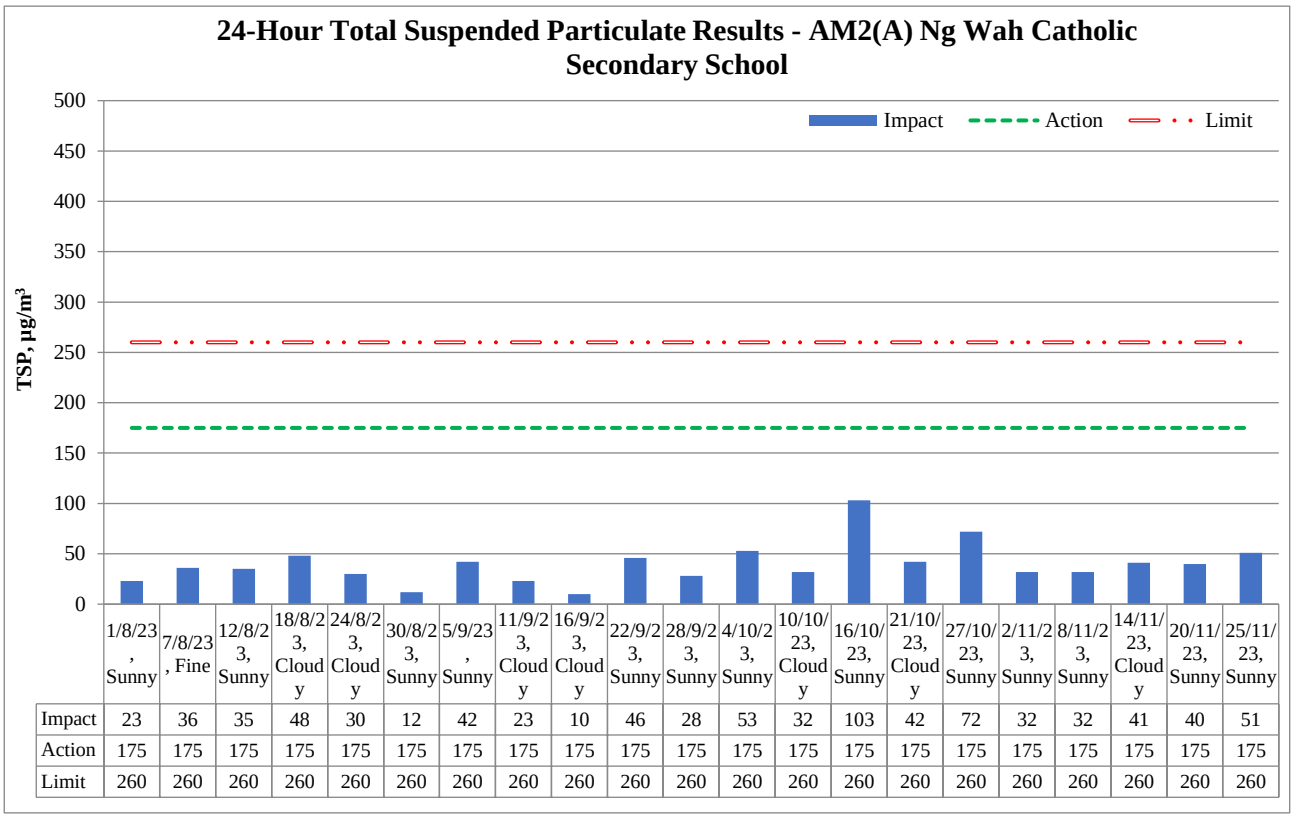
Maximum	51
Minimum	32
Average	39
Action Level	175
Limit Level	260

Location: AM3 – Sky Tower

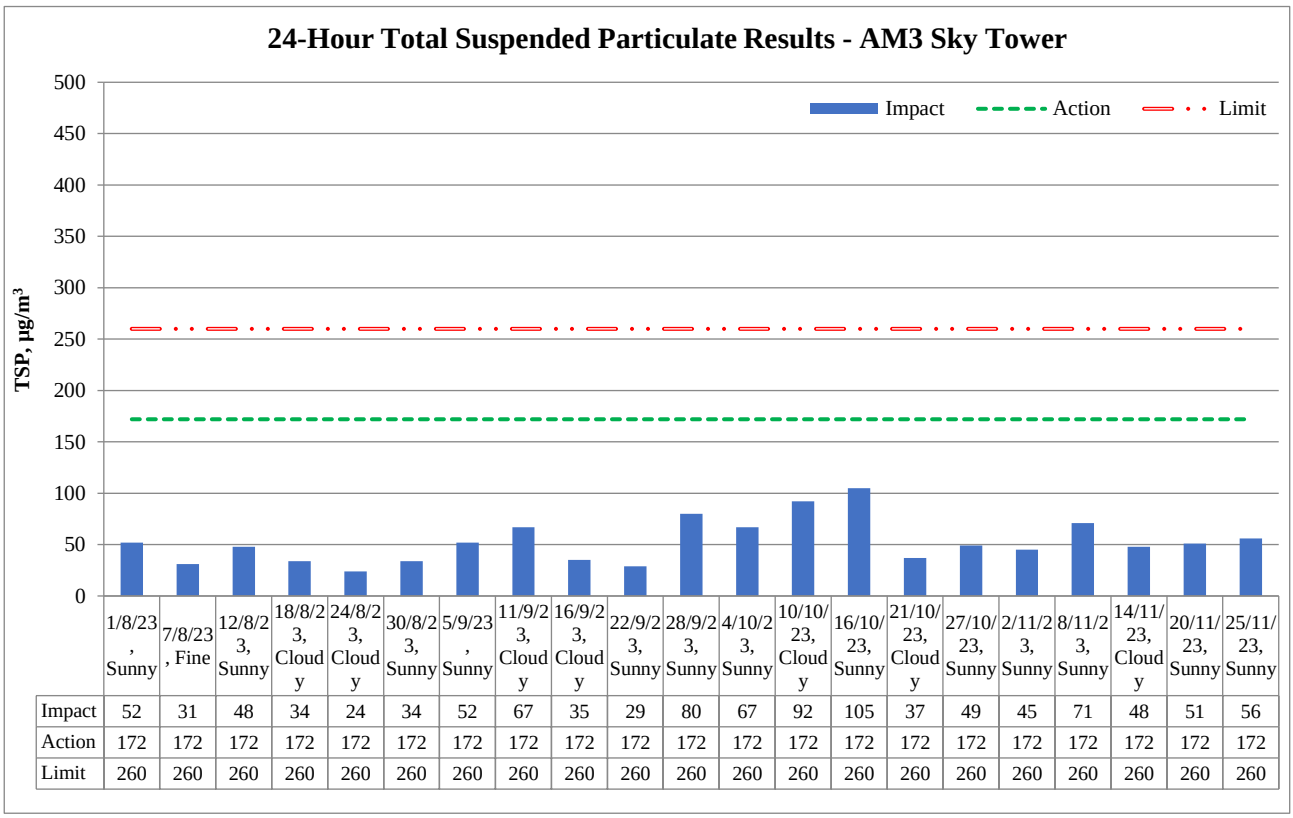
Start Date	Weather	Air Temp. (℃)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
02/11/2023	Sunny	27.4	1015.5	14.9807	15.0621	0.0814	2023/11/2 13:26	2023/11/3 13:26	1440	46	46	1.26	1814	45
08/11/2023	Sunny	25.7	1015.8	18.4461	18.5748	0.1287	2023/11/8 9:29	2023/11/9 9:29	1440	46	46	1.26	1819	71
14/11/2023	Cloudy	18.8	1022.6	15.1155	15.2073	0.0918	2023/11/14 9:25	2023/11/15 9:25	1440	48	48	1.34	1930	48
20/11/2023	Sunny	25.4	1019.4	18.1588	18.2563	0.0975	2023/11/20 13:38	2023/11/21 13:38	1440	48	48	1.32	1905	51
25/11/2023	Sunny	24.8	1021	18.1061	18.2086	0.1025	2023/11/25 9:35	2023/11/26 9:35	1440	46	46	1.27	1827	56

Maximum	71
Minimum	45
Average	54
Action Level	172
Limit Level	260

24-hour average TSP



	1/8/23, Sunny	7/8/23, Fine	12/8/23, Sunny	18/8/23, Cloudy	24/8/23, Cloudy	30/8/23, Sunny	5/9/23, Sunny	11/9/23, Cloudy	16/9/23, Cloudy	22/9/23, Sunny	28/9/23, Sunny	4/10/23, Sunny	10/10/23, Cloudy	16/10/23, Sunny	21/10/23, Cloudy	27/10/23, Sunny	2/11/23, Sunny	8/11/23, Sunny	14/11/23, Cloudy	20/11/23, Sunny	25/11/23, Sunny
Impact	23	36	35	48	30	12	42	23	10	46	28	53	32	103	42	72	32	32	41	40	51
Action	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
Limit	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260



	1/8/23, Sunny	7/8/23, Fine	12/8/23, Sunny	18/8/23, Cloudy	24/8/23, Cloudy	30/8/23, Sunny	5/9/23, Sunny	11/9/23, Cloudy	16/9/23, Cloudy	22/9/23, Sunny	28/9/23, Sunny	4/10/23, Sunny	10/10/23, Cloudy	16/10/23, Sunny	21/10/23, Cloudy	27/10/23, Sunny	2/11/23, Sunny	8/11/23, Sunny	14/11/23, Cloudy	20/11/23, Sunny	25/11/23, Sunny
Impact	52	31	48	34	24	34	52	67	35	29	80	67	92	105	37	49	45	71	48	51	56
Action	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172
Limit	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260

Major Construction Activities	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for SB-01 tunnel	✓			
Construction of Underpinning of S14	✓	✓		
Construction of Retaining Wall Type 1 for S14	✓	✓	✓	✓
Construction of Pile Cap for S14		✓	✓	✓
Construction works for SMH404 and SMH505		✓	✓	✓
Construction of Permanent Shaft Structure of SB-01				✓
Demolition of bearing wall of S14			✓	✓
Modification works for Rising Main chamber WOC1, AVC2 and K1		✓	✓	✓
ELS modification and Backfilling works for Retrieving Shaft at Sa Po Road	✓			
Pre-bored socket H-pile construction works for Slip Road S14				
GI and Grouting works for Slip Road S14	✓			
Installation of post tensioning anchorage system at LW-02				✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RTBM dismantle		✓	✓	
RC construction for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RC construction for Subway KS10 Lift and Staircase	✓	✓		
RC construction works for lift and staircase of LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase			✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Road and drain construction works for Road L16	✓			
Road and Drain Construction works for Road L16, Commercial Street and Road D1		✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

Factors might affect the monitoring results	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

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

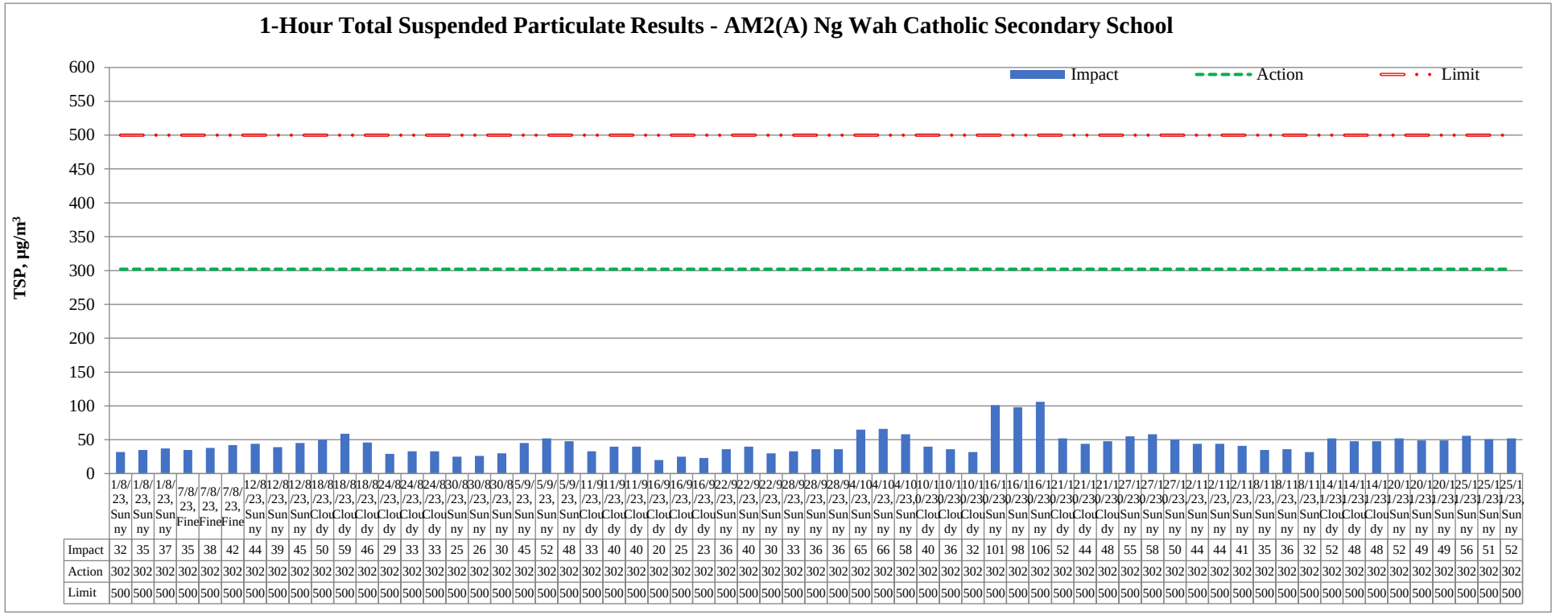
Location:
AM2(A) – Ng Wah Catholic Secondary School

Date	Measurement Period			1-hr TSP concentration, $\mu g/m^3$	Weather
02/11/2023	9:00	-	10:00	44	Sunny
	10:00	-	11:00	44	
	11:00	-	12:00	41	
08/11/2023	13:00	-	14:00	35	Sunny
	14:00	-	15:00	36	
	15:00	-	16:00	32	
14/11/2023	9:00	-	10:00	52	Cloudy
	10:00	-	11:00	48	
	11:00	-	12:00	48	
20/11/2023	9:00	-	10:00	52	Sunny
	10:00	-	11:00	49	
	11:00	-	12:00	49	
25/11/2023	13:00	-	14:00	56	Sunny
	14:00	-	15:00	51	
	15:00	-	16:00	52	
Maximum				56	
Minimum				32	
Average				46	
Action Level				302	
Limit Level				500	

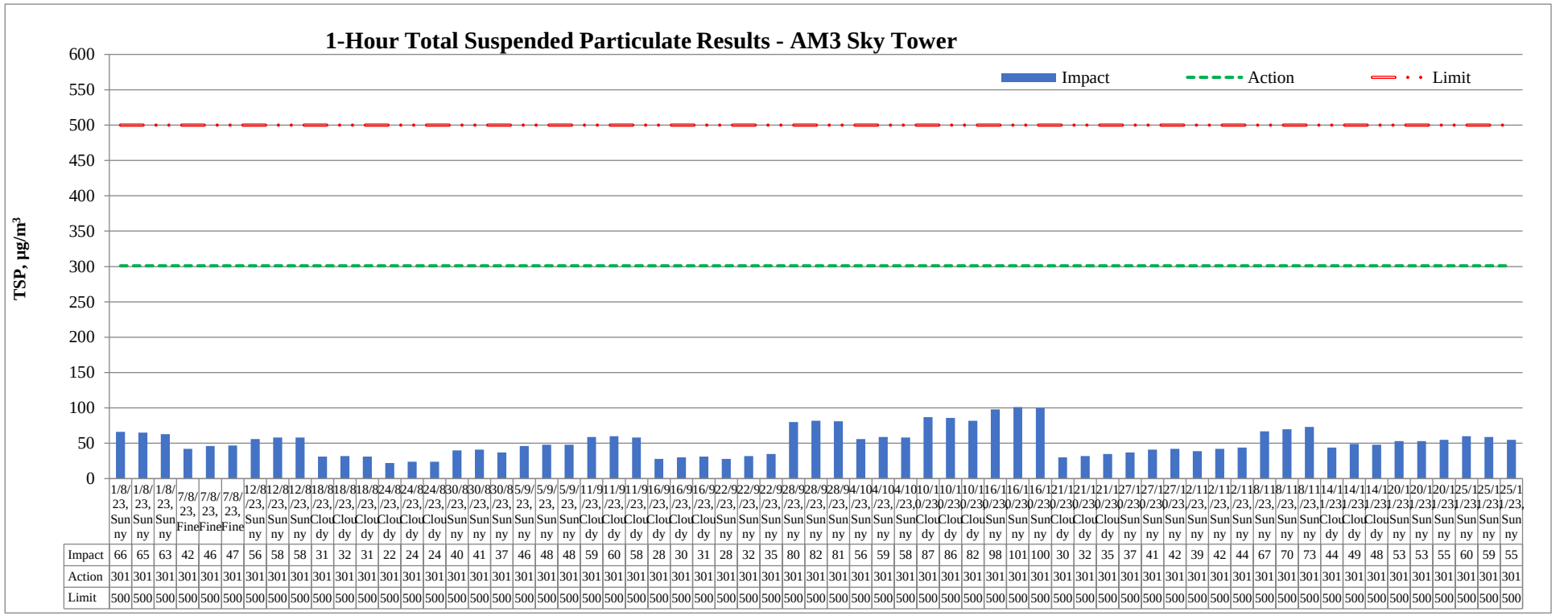
Location:
AM3 - Sky Tower

Date	Measurement Period			1-hr TSP concentration, $\mu g/m^3$	Weather
02/11/2023	13:00	-	14:00	67	Sunny
	14:00	-	15:00	70	
	15:00	-	16:00	73	
08/11/2023	9:00	-	10:00	44	Sunny
	10:00	-	11:00	49	
	11:00	-	12:00	48	
14/11/2023	9:00	-	10:00	53	Cloudy
	10:00	-	11:00	53	
	11:00	-	12:00	55	
20/11/2023	13:00	-	14:00	60	Sunny
	14:00	-	15:00	59	
	15:00	-	16:00	55	
25/11/2023	9:00	-	10:00	67	Sunny
	10:00	-	11:00	70	
	11:00	-	12:00	73	
Maximum				73	
Minimum				39	
Average				54	
Action Level				301	
Limit Level				500	

1-hour average TSP



	1/8/23, Sunny	1/8/23, Sunny	1/8/23, Sunny	7/8/23, Fine	7/8/23, Fine	7/8/23, Fine	12/8/23, Sunny	12/8/23, Sunny	12/8/23, Sunny	18/8/23, Cloudy	18/8/23, Cloudy	18/8/23, Cloudy	24/8/23, Cloudy	24/8/23, Cloudy	24/8/23, Cloudy	30/8/23, Sunny	30/8/23, Sunny	30/8/23, Sunny	5/9/23, Sunny	5/9/23, Sunny	5/9/23, Sunny	11/9/23, Cloudy	11/9/23, Cloudy	11/9/23, Cloudy	16/9/23, Cloudy	16/9/23, Cloudy	16/9/23, Cloudy	22/9/23, Sunny	22/9/23, Sunny	22/9/23, Sunny	28/9/23, Sunny	28/9/23, Sunny	28/9/23, Sunny	4/10/23, Sunny	4/10/23, Sunny	4/10/23, Sunny	10/10/23, Cloudy	10/10/23, Cloudy	10/10/23, Cloudy	16/10/23, Sunny	16/10/23, Sunny	16/10/23, Sunny	21/10/23, Cloudy	21/10/23, Cloudy	21/10/23, Cloudy	27/10/23, Sunny	27/10/23, Sunny	27/10/23, Sunny	2/11/23, Sunny	2/11/23, Sunny	2/11/23, Sunny	8/11/23, Sunny	8/11/23, Sunny	8/11/23, Sunny	14/11/23, Cloudy	14/11/23, Cloudy	14/11/23, Cloudy	20/11/23, Sunny	20/11/23, Sunny	20/11/23, Sunny	25/11/23, Sunny	25/11/23, Sunny	25/11/23, Sunny
Impact	32	35	37	35	38	42	44	39	45	50	59	46	29	33	33	25	26	30	45	52	48	33	40	40	20	25	23	36	40	30	33	36	36	65	66	58	40	36	32	101	98	106	52	44	48	55	58	50	44	44	41	35	36	32	52	48	48	52	49	49	56	51	52
Action	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302	302
Limit	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500



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Impact	66	65	63	42	46	47	56	58	58	31	32	31	22	24	24	40	41	37	46	48	48	59	60	58	28	30	31	28	32	35	80	82	81	56	59	58	87	86	82	98	101	100	30	32	35	37	41	42	39	42	44	67	70	73	44	49	48	53	53	55	60	59	55
Action	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301	301
Limit	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500

Major Construction Activities	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for SB-01 tunnel	✓			
Construction of Underpinning of S14	✓	✓		
Construction of Retaining Wall Type 1 for S14	✓	✓	✓	✓
Construction of Pile Cap for S14		✓	✓	✓
Construction works for SMH404 and SMH505		✓	✓	✓
Construction of Permanent Shaft Structure of SB-01				✓
Demolition of bearing wall of S14			✓	✓
Modification works for Rising Main chamber WOC1, AVC2 and K1		✓	✓	✓
ELS modification and Backfilling works for Retrieving Shaft at Sa Po Road	✓			
Pre-bored socket H-pile construction works for Slip Road S14				
GI and Grouting works for Slip Road S14	✓			
Installation of post tensioning anchorage system at LW-02				✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RTBM dismantle		✓	✓	
RC construction for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RC construction for Subway KS10 Lift and Staircase	✓	✓		
RC construction works for lift and staircase of LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase			✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Road and drain construction works for Road L16	✓			
Road and Drain Construction works for Road L16, Commercial Street and Road D1		✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

Factors might affect the monitoring results	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

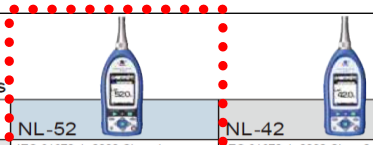
Appendix I – Event and Action Plan for air quality

Event	Action			
	ET	**IEC**	**Supervisor / ER**	**Contractor**
Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and Supervisor /ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and Supervisor /ER; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the Supervisor /ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to Supervisor /ER and IEC within three working day of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, Supervisor /ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss possible remedial measures with ET and Contractor; 4. Advise the Supervisor /ER	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be	1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposal for remedial actions to Supervisor /ER and IEC

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

Appendix J – Calibration certificates, catalogue of noise monitoring equipment

Specifications



	NL-52	NL-42
Applicable standards	IEC 61672-1: 2002 Class 1 ANSI S1.4-1983 Type 1 ANSI S1.4A-1985 Type 1 ANSI S1.43-1997 Type 1 JIS C 1509-1: 2005 Class 1	IEC 61672-1: 2002 Class 2 ANSI S1.4-1983 Type 2 ANSI S1.4A-1985 Type 2 ANSI S1.43-1997 Type 2 JIS C 1509-1: 2005 Class 2
	CE Marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC), WEEE Directives, Chinese RoHS (export model for China only)	
Measurement functions	Simultaneous measurement of the following items, with selected time weighting and frequency weighting	
Processing (main ch)	Instantaneous sound pressure level: L_p Equivalent continuous sound pressure level: L_{eq} Sound exposure level: L_E Maximum sound pressure level: L_{max} Minimum sound pressure level: L_{min} Percentile sound levels: L_N (0.1 to 99.9 %, 0.1-increment steps, max. 5 values)	
Processing (sub ch)	Instantaneous sound pressure level: L_p	
Additional processing	In addition to main processing items, one of the following can be selected for simultaneous processing: C-weighted equivalent continuous sound level: L_{Ceq} C-weighted peak sound level: L_{Cpeak} Z-weighted peak sound level: L_{Zpeak} Δ-time-weighted equivalent continuous sound level: $L_{Δeq}$ *2 Maximum Δ-time-weighted equivalent continuous sound level: $L_{Δmax}$ *2 The power average of the maximum level of each 5 second interval: L_{Atm5} The frequency weighting for the additional processing synchronizes with the frequency weighting of the sub-channel, so when the sub-channel has A-weighting, L_{Atm5} can be selected. When C-weighting (Z-weighting) is selected, the additional processing L_{Ceq} and L_{Cpeak} (L_{Zpeak}) are selectable.	
Measuring time	10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h)	
Microphone Type	UC-59	UC-52
Microphone Sensitivity level	−27 dB	−33 dB
Measurement range	A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB Z-weighting: 38 dB to 138 dB C-weighting peak sound level: 55 dB to 141 dB Z-weighting peak sound level: 60 dB to 141 dB	
Inherent noise A-weighting	17 dB or less	19 dB or less
Inherent noise C-weighting	25 dB or less	27 dB or less
Inherent noise Z-weighting	30 dB or less	32 dB or less
Frequency range	20 Hz to 20 kHz	20 Hz to 8 kHz
Frequency weighting	A, C, and Z	
Time weighting	F (Fast) and S (Slow)	
Level range	Single range (Linearity range: 113 dB)	
Bar graph display range max	Max. 110 dB (20 to 130 dB)	
Switching of bar graph display	Set the upper/ lower limit in 10 dB increments.	
RMS detection circuit	Digital processing method	
Sampling cycle	20.8 µs (L_p, L_{eq}, L_E, L_{max}, L_{min}, L_{peak} : sampling frequency: 48 kHz) 100 ms (L_N)	
Calibration	Measurement Law: electrical calibration performed according to IEC and JIS standards, using internally generated signals: acoustic calibration performed with the NC-74.	
Correction functions	Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed.	
	Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.	
Delay time	The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.	
Back erase function	When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.	
Display	Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) *LCD with touch panel (Capacitive Touch Panel)	
	Numerical display update frequency: 1 s Bar graph display update frequency: 100 ms	
Store Manual	Data for measurement results are stored manually in single address increments.	
Number of data	Internal memory: max. 1000 sets SD Card: depends on the capacity of the SD Card *1	
Auto *2	Instantaneous values (L_p mode) and processed values (L_{eq} mode) are stored continuously and automatically at preset intervals.	
L_p sampling cycle	100 ms, 200 ms, 1 s, L_{eq} 1s	
L_{eq} sampling cycle	10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h	
Measurement Time	Max. 1000 h (depends on the capacity of the SD Card) *1	

Data recall	Allows viewing of stored data	
Setup memory	Up to five setup configurations can be saved in internal memory, for later recall Start up via file settings previously stored on SD card possible	
Waveform recording *3		
File format	Uncompressed waveform WAVE file	
Sampling frequency	Select 48 kHz, 24 kHz or 12 kHz	
Data length	Select 24 bit or 16 bit	
Outputs DC output	Output DC signals using a frequency weighting characteristic selected by processing.	
Output voltage	2.5 V, 25 mV / dB at bar graph display full scale	
AC output	Output AC signals using a frequency weighting characteristic selected by processing or by A, C, Z-weighting.	
Output voltage	1 V (rms values) at bar graph display full scale	
Comparator output *2	Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).	
USB	Allows USB to be connected to a computer and recognized as a removable disk Allows USB to be controlled via communication commands	
RS-232C communication	Allows for RS-232C communication via use of a dedicated cable	
Data continuous output *2		
Type of data Instantaneous value	L_p	
Type of data Processed value	L_{eq}, L_{max}, L_{min}, L_{peak}	
Output interval	100 ms	
Print out	Printing of measurement results on dedicated printer DPU-414	
Power requirements	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply	
Battery life (23 °C)	Alkaline battery LR6 (AA): 26 h Ni-MH secondary battery: 25 h At the maximum *Depends on the setting	
AC adapter	NC-98C (NC-34 for previous models cannot be used)	
External power voltage	5 to 7 V (rated voltage: 6 V)	
Current consumption	Approximately 90 mA (normal operation, rated voltage)	
Ambient conditions Temperature	−10 to +50 °C	
Ambient conditions Humidity	10 to 90 % RH (non-condensing)	
Dustproof / water-resistant performance *4	IP code: IP54 (except for microphone) See precautions regarding waterproofing	
Dimensions, weight	Approx. 250 (H) x 76 (W) x 33 mm(D), approx. 400 g (with batteries)	
Supplied accessories	Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MB×1 (NX-42EX preinstalled model only)	

Options

Product name	Product number
Extended function program (Inst.on 512 MB SD card)	NX-42EX
Waveform recording program *2 (Inst.on 2 GB SD card)	NX-42WR
Octave, 1/3 octave real-time analysis program *2 (Inst.on 512 MB SD card)	NX-42RT
FFT analysis program *2 (Inst.on 512 MB SD card)	NX-42FT
Data management software for environmental measurement	AS-60
Data management software for environmental measurement (Includes the octave and 1/3 octave data management software)	AS-60RT
Data management software for environmental measurement (Includes the vibration level data management software)	AS-60VM
Waveform analysis software	CAT-WAVE
SD Card 512 MB	SD-512M
SD Card 2 GB	SD-2G
AC adapter (100 V to 240 V)	NC-98C
Battery pack	BP-21
Microphone extension cables	EC-04 (from 2 m)
BNC-Pin output code	CC-24
Comparator output cable	CC-42C
Printer	DPU-414
Printer cable	CC-42P
RS 232C serial I/O cable	CC-42R
USB cable	—
Sound calibrator	NC-74
All-weather windscreen	WS-15
Windscreen mounting adapter	WS-15006
Rain-protection windscreen	WS-16
Sound level meter tripod	ST-80
All-weather windscreen tripod	ST-81

*1 Use Rion fully guaranteed products. *2 NX-42EX required (sold separately). *3 NX-42WR required (sold separately).
*4 Protection against harmful dust and water splashing from any direction.

Precautions regarding waterproofing

Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.
To maintain the water and dust proof rating, internal packing replacement is required every two years (at cost).

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

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

Distributed by:

RION CO., LTD.
http://www.rion.co.jp/english/
3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan
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This product is environment-friendly. It does not include toxic chemicals on our policy.
This product is certified to an International Protection rating of IP54 (dust protected and resistant to splashing water).
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1011-4 1212.P.D

中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校 准 证 书
CALIBRATION CERTIFICATE

证书编号: 2HB23001488-0003
Certificate No.

中国认可 国际互认 校准 CALIBRATION CNAS L13344

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

校准: Calibrated by 赵文钰 赵文钰
核验: Inspected by 钟灏 钟灏
签发: Approved by 郑术力 郑术力
印章: Stamp

扫一扫查真伪

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

CEPREI Calibration and Testing Centre
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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

说 明
DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求，获得中国合格评定国家认可委员会（CNAS）认可，认可证书号为：CNAS L13344。
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

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

3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes)：
- JJG 188-2017 声级计检定规程；Sound pressure level：(20～130)dB；Frequency Weighting：(20～130)dB，(10 Hz～20kHz)
- 详细内容请查看CNAS网站中注册编号为L13344的证书附件，超出范围的内容未被认可，其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)

4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration)：

名 称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
实验室标准传声器(2246093)	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(2431656)	4GC22000542-0057/2023-10-26/赛宝(广州)	f：±1mHz；失真度 Distortion：<-70dB	f：0.001Hz～200kHz；U：100μV～5Vrms
前置放大器(3194482)	4GC22000429-0039/2023-08-29/赛宝(广州)	±0.1dB	10Hz～50kHz
数字多用表(MY53006483)	4GC22000447-0003/2023-09-26/赛宝(广州)	DCV：±0.0035%；ACV：±0.06%；DCI：±0.05%；ACI：±0.1%；R：±0.01%；f：±0.001%	DCV:(0～1000)V；ACV:(0.001～750)V@(3Hz～300kHz)；DCI:(0～3)A；ACI:(0～3)A@(3Hz～5kHz)；R:(0～100)MΩ；f:3Hz～300kHz
功率放大器(2536312)	4GC22000600-0093/2023-11-30/赛宝(广州)	频率响应：±1dB，失真度：≤0.2%	20Hz～50kHz
PULSE分析系统(3160-106540)	4GC23000001-0137/2024-01-03/赛宝(广州)	频率:U_{rel}=0.001%,k=2;电压:U_{rel}=0.10%,k=2	频率:0.001Hz~51.2kHz,电压:(1×10^{-5}～30)V
声校准器(2272351)	4GC22000600-0073/2023-11-29/赛宝(广州)	1级 First Level	31.5Hz～16kHz

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

6. 环境条件(Environmental conditions)：
温度(Temperature)：25.3℃ 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.

Calibration Certificate of Sound Level Meter

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

无影响证书中测量结果准确度的因素和缺陷。

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

2 指示声级调整 (Indication SPL Calibration)

频率(Frequency)=1000Hz

传声器型号 (Microphone Type)	传声器编号 (Microphone SN.)	放大器型号 (Preamplifier Type)	放大器编号 (Preamplifier SN.)
/	/	/	/

声校准器型号 (Calibrator Type)	标准声压级 (Reference SPL) (dB)	校准前示值 (Before Calibration) (dB)	校准后示值 (After Calibration) (dB)	U (k=2) (dB)
4226	94.0	93.8	93.8	0.2

3 级线性 (Level Linearity)

3.1 参考级量程 (Reference Range)

频率(Frequency): 8000Hz

标准声级 (Standard) (dB)	指示声级 (Indication) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
130.0	129.8	-0.2	±0.8	P	0.3
129.0	128.8	-0.2	±0.8	P	0.3
128.0	127.8	-0.2	±0.8	P	0.3
127.0	126.8	-0.2	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	119.9	-0.1	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	79.9	-0.1	±0.8	P	0.3
70.0	69.9	-0.1	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	49.9	-0.1	±0.8	P	0.3
40.0	39.9	-0.1	±0.8	P	0.3
35.0	34.8	-0.2	±0.8	P	0.3
34.0	33.8	-0.2	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.8	-0.2	±0.8	P	0.3
31.0	30.8	-0.2	±0.8	P	0.3
30.0	29.8	-0.2	±0.8	P	0.3

3.2 其它级量程 (Other Range)

频率(Frequency): 1000Hz

标准声级 (Standard) (dB)	指示声级 (Indication) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
130.0	129.9	-0.1	±0.8	P	0.3
129.0	128.9	-0.1	±0.8	P	0.3
128.0	127.9	-0.1	±0.8	P	0.3
127.0	126.9	-0.1	±0.8	P	0.3
126.0	125.9	-0.1	±0.8	P	0.3
125.0	124.9	-0.1	±0.8	P	0.3
120.0	120.0	0.0	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	80.0	0.0	±0.8	P	0.3
70.0	70.0	0.0	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	50.0	0.0	±0.8	P	0.3
40.0	40.0	0.0	±0.8	P	0.3
35.0	34.9	-0.1	±0.8	P	0.3
34.0	33.9	-0.1	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.9	-0.1	±0.8	P	0.3
31.0	30.9	-0.1	±0.8	P	0.3
30.0	29.9	-0.1	±0.8	P	0.3

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证书编号(Certificate No.)：2HB23001488-0003

5 C计权特性(C-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (k=2) (dB)
20	-6.6	-6.2	-0.4	±2.0	P	0.5
25	-4.7	-4.4	-0.3	+2.0 ~ -1.5	P	0.5
31.5	-3.0	-3.0	0.0	±1.5	P	0.5
40	-2.0	-2.0	0.0	±1.0	P	0.5
50	-1.3	-1.3	0.0	±1.0	P	0.5
63	-0.8	-0.8	0.0	±1.0	P	0.5
80	-0.4	-0.5	0.1	±1.0	P	0.5
100	-0.2	-0.3	0.1	±1.0	P	0.5
125	-0.1	-0.2	0.1	±1.0	P	0.5
160	0.0	-0.1	0.1	±1.0	P	0.5
200	0.0	0.0	0.0	±1.0	P	0.5
250	0.0	0.0	0.0	±1.0	P	0.5
315	0.0	0.0	0.0	±1.0	P	0.4
400	0.0	0.0	0.0	±1.0	P	0.4
500	0.0	0.0	0.0	±1.0	P	0.4
630	0.0	0.0	0.0	±1.0	P	0.4
800	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	-0.1	0.0	-0.1	±1.0	P	0.6
1600	-0.2	-0.1	-0.1	±1.0	P	0.6
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
2500	-0.5	-0.3	-0.2	±1.0	P	0.6
3150	-0.8	-0.5	-0.3	±1.0	P	0.6
4000	-1.1	-0.8	-0.3	±1.0	P	0.6
5000	-1.5	-1.3	-0.2	±1.5	P	0.6
6300	-2.1	-2.0	-0.1	+1.5 ~ -2.0	P	0.6
8000	-3.0	-3.0	0.0	+1.5 ~ -2.5	P	0.6
10000	-4.3	-4.4	0.1	+2.0 ~ -3.0	P	0.6
12500	-6.2	-6.2	0.0	+2.0 ~ -5.0	P	1.0
16000	-10.4	-8.5	-1.9	+2.5 ~ -16.0	P	1.0
20000	-20.3	-11.2	-9.1	+3.0 ~ -∞	P	1.0

Catalogue of Sound Calibrator	Calibration Certificate of Sound Calibrator

For microphone calibration NC-74

How to use

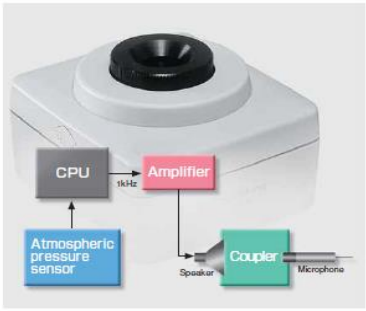
Carefully insert the microphone all the way into the coupler of the NC-74. Then simply turn the power on to apply a constant sound pressure level to the diaphragm of the microphone.

Usage example (NL series)

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

Atmospheric pressure compensation principle

The NC-74 incorporates a sensor that detects atmospheric pressure. Based on the information provided by the sensor, the CPU controls the signal amplitude. This allows the unit to always provide the correct output for achieving constant sound pressure level, regardless of fluctuations in atmospheric pressure.



Using the 1/2-inch adapter

To allow calibration of sound level meter microphones with 1 inch diameter, the 1/2-inch microphone adapter can be removed. 1/2-inch microphones are calibrated with the adapter in place.

Specifications

Applicable standards	IEC 60942:2003 Class 1 JIS C1515:2004 Class 1	
Suitable microphones	1-inch microphones	IEC 61094-1 Type LS1P UC-27 UC-25 UC-34
	1/2-inch microphones	IEC 61094-1 Type LS2aP UC-59 UC-57 UC-53A UC-52 UC-26 UC-30 UC-31 UC-33P
Nominal sound pressure level	94 dB	
Sound pressure level tolerance	±0.3 dB	
Nominal frequency	1 kHz	
Frequency tolerance	±1.0 % or less	
Power requirements	IEC LR6 (size AA) alkaline battery × 2	
Dimensions, mass	Approx. 49 (H) × 80 (W) × 74 (D) mm Approx. 200 g (including batteries)	
Supplied accessories	Case × 1 IEC LR6 (size AA) alkaline battery × 2 1/2-inch microphone adapter NC-74-002 × 1	

* Specification subject to change without notice.

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

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

Distributed by:

Printed in Japan 0510-1 0807.P.MP

AAST-SLC-06 Cal 5 Sep 2023

CEPREI

中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校 准 证 书
CALIBRATION CERTIFICATE

证书编号: 2HB23001715-0001
Certificate No.

CNAS 中国认可 国际互认 校准 CALIBRATION CNAS L13344

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

CEPREI

校准: Calibrated by 赵文钰 赵文钰
核验: Inspected by 钟灏 钟灏
签发: Approved by 郑术力 郑术力
印章: Stamp

扫一扫查真伪

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

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

说　明
DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求，获得中国合格评定国家认可委员会（CNAS）认可，认可证书号为：CNAS L13344。
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

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

3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes)：
* JJG 176-2022 声校准器检定规程：Sound Pressure Level：94dB、104dB、114dB、124dB(63Hz～8kHz)；94dB、104dB、114dB,(31.5Hz～16kHz)；Frequency：31.5Hz～16kHz；Harmonic Distortion：0.1%～10%，(20Hz～20kHz)
* 详细内容请查看CNAS网站中注册编号为L13344的证书附件，超出范围的内容未被认可，其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)

4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration)：

名　称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
前置放大器(2239843)	GFJGJL100123030418 5/2024-03-22/航空304所	频率响应：±0.1dB	（10～50000）Hz
数字多用表(MY45051674)	GFJGJL100423040037 8/2024-04-02/航天514所	DCV：$\pm 8\times10^{-6}$；DCI：$\pm 2\times10^{-3}$；ACV：±0.02%,ACI：±0.03%,R：$\pm 1\times10^{-5}$；f：±0.01%	DCV：10nV～1000V；DCI：1pA～1A；ACV：（10nV～700V）@（1Hz～2MHz）；ACI：（100pA～1A）@（10Hz～100kHz）；R：10μΩ～1GΩ；F：1Hz～10MHz
PULSE分析系统(3160-106540)	4GC23000528-0009/2024-08-16/赛宝(广州)	频率:U_{rel}=0.001%,k=2;电压:U_{rel}=0.10%,k=2	频率:0.001Hz~51.2kHz,电压:(1×10^{-5}~30)V
实验室标准传声器(2246093)	GFJGJL100123030418 7/2024-04-13/航空304所	LS级	10Hz～25kHz

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

6. 环境条件(Environmental conditions)：
温度(Temperature)：21.2℃　　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 95%.

8. 证书中"P"、"合格"代表"测量结果在允许范围内"，"F"、"不合格"代表"测量结果不在允许范围内"，"N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考，使用人员应结合实际测量的要求合理使用，如考虑测量结果测量不确定度的影响等。
"P" and "Pass" in this certificate stand for "Low Limit≤the measured value ≤High Limit", "F" and "Fail" stand for "the measured value＜Low Limit or the measured value＞High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc".The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

9. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议，供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

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

无影响证书中测量结果准确度的因素和缺陷。

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

2 声压级 (Sound Pressure Level)

规定声压级 (Prescribed SPL)	测量声压级 (Measured SPL)	声压级差的绝对值 (Absolute value of SPL)	接受限 (Limit)	结论 (Pass/Fail)	U (k=2)
(dB)	(dB)	(dB)	(dB)		(dB)
94	93.86	0.14	≤0.25	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.)	测量频率 (Measured Fre.)	频率误差的绝对值 (Absolute value of Fre.)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} (k=2)
(Hz)	(Hz)	(%)	(%)		(%)
1000	1003.7	0.37	≤0.70	P	0.10

4 总失真+噪声 (Distortion and noise)

规定声压级 (Prescribed SPL)	规定频率 (Measured Fre.)	总失真+噪声 (Distortion and noise)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} (k=2)
(dB)	(Hz)	(%)	(%)		(%)
94	1000	0.69	≤2.50	P	5.0

以下空白/No data hereafter

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

SPECIFICATIONS

THERMAL ANEMOMETERS
MODELS TA410, TA430 AND TA440

Velocity

Range (TA410)	0 to 20 m/s (0 to 4,000 ft/min)
Range (TA430, TA440)	0 to 30 m/s (0 to 6,000 ft/min)
Accuracy (TA410)[1][2]	±5% of reading or ±0.025 m/s (±5 ft/min), whichever is greater
Accuracy (TA430, TA440)[1][2]	±3% of reading or ±0.015 m/s (±3 ft/min), whichever is greater
Resolution	0.01 m/s (1 ft/min)

Duct Size (TA430, TA440)

Dimensions	1 to 635 cm in increments of 0.1 cm (1 to 250 inches in increments of 0.1 in.)

Volumetric Flow Rate (TA430, TA440)

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

Temperature

Range (TA410, TA430)	-18 to 93°C (0 to 200°F)
Range (TA440)	-10 to 60°C (14 to 140°F)
Accuracy[3]	±0.3°C (±0.5°F)
Resolution	0.1°C (0.1°F)

Relative Humidity (TA440 only)

Range	5 to 95% RH
Accuracy[4]	±3% RH
Resolution	0.1% RH

Wet Bulb Temperature (TA440 only)

Range	5 to 60°C (40 to 140°F)
Resolution	0.1°C (0.1°F)

Dew Point (TA440 only)

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

Instrument Temperature Range

Operating (Electronics)	5 to 45°C (40 to 113°F)
Model TA410, TA430 Operating (Probe)	-18 to 93°C (0 to 200°F)
Model TA440 Operating (Probe)	-10 to 60°C (14 to 140°F)
Storage	-20 to 60°C (-4 to 140°F)

Data Storage Capabilities (TA430, TA440)

Range	12,700+ samples and 100 test IDs

Logging Interval (TA430, TA440)
1 second to 1 hour

Time Constant (TA430, TA440)
User selectable

External Meter Dimensions
8.4 cm x 17.8 cm x 4.4 cm (3.3 in. x 7.0 in. x 1.8 in.)

Meter Weight with Batteries
0.27 kg (0.6 lbs.)

Meter Probe Dimensions

Probe Length	101.6 cm (40 in.)
Probe Diameter of Tip	7.0 mm (0.28 in.)
Probe Diameter of Base	13.0 mm (0.51 in.)

Articulating Probe Dimensions

Articulating Section Length	19.7 cm (7.8 in.)
Diameter of Articulating Knuckle	9.5 mm (0.38 in.)

Power Requirements
Four AA-size batteries or AC adapter

	TA410	TA430, TA430-A	TA440, TA440-A
Velocity range 0 to 20.00 m/s (0 to 4000 ft/min)	+		
Velocity range 0 to 30.00 m/s (0 to 6000 ft/min)		+	+
Temperature	+	+	+
Flow		+	+
Humidity, wet bulb, dew point			+
Probe	Straight	Straight or -A articulated	Straight or -A articulated
Variable time constant		+	+
Manual data logging		+	+
Auto save data logging			+
Statistics		+	+
Review data		+	+
LogDat2 downloading software		+	+
Free Certificate of Calibration	+	+	+

[1] Temperature compensated over an air temperature range of 5 to 65°C (40 to 150°F).
[2] The accuracy statement begins at 30 ft/min through 4000 ft/min (0.15 m/s through 20 m/s) for the Model TA410, and 30 ft/min through 6,000 ft/min (0.15 m/s through 30 m/s) for Models TA430 and TA440.
[3] Accuracy with instrument case at 25°C (77°F), add uncertainty of 0.03°C/°C (0.05°F/°F) for change in instrument temperature.
[4] Accuracy with probe at 25°C (77°F). Add uncertainty of 0.2% RH/°C (0.1% RH/°F) for change in probe temperature. Includes 1% hysteresis.

Specifications subject to change without notice.

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AIRFLOW INSTRUMENTS

Airflow Instruments, TSI Instruments Ltd.
Visit our website at **www.airflowinstruments.co.uk** for more information.

UK **Tel:** +44 149 4 459200 **Germany** **Tel:** +49 241 523030
France **Tel:** +33 491 11 87 64

P/N 2980548 Rev D (A4)

CALIBRATION

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

ilac-MRA HKAS ACCREDITED Certificate #3815.01

Calibration Certificate No.: CC0222301

Customer Information

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

Equipment Identification

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401706003	AAST-FLOW-03

Certificate Information

Date of Receipt:	11 January 2023	Calibration Condition:	23.5°C, 58%RH, 1003hPa
Date of Calibration:	13 January 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	SOP-112	Remark:	N/A

Reference Equipment Identification

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

Result of Calibration

Air flow rate – Error of indication

Reference reading (L/min)	Measured reading (L/min)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
0.5	0.51	2.0	3.6	± 5 %	JJG 956-2013
1.0	0.99	-1.0	3.6	± 5 %	JJG 956-2013
2.0	2.03	1.5	3.6	± 5 %	JJG 956-2013
5.0	5.07	1.4	3.6	± 5 %	JJG 956-2013

CT-AFR-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
Note3: The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long term stability of the instrument.
Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By: Wing Cheng

Checked and Approved By: Warren Yeung

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

Certificate Issue Date: 13 January 2023

CT-BEG-03

*** End of Certificate ***

Appendix K – Noise monitoring results and graphical presentation

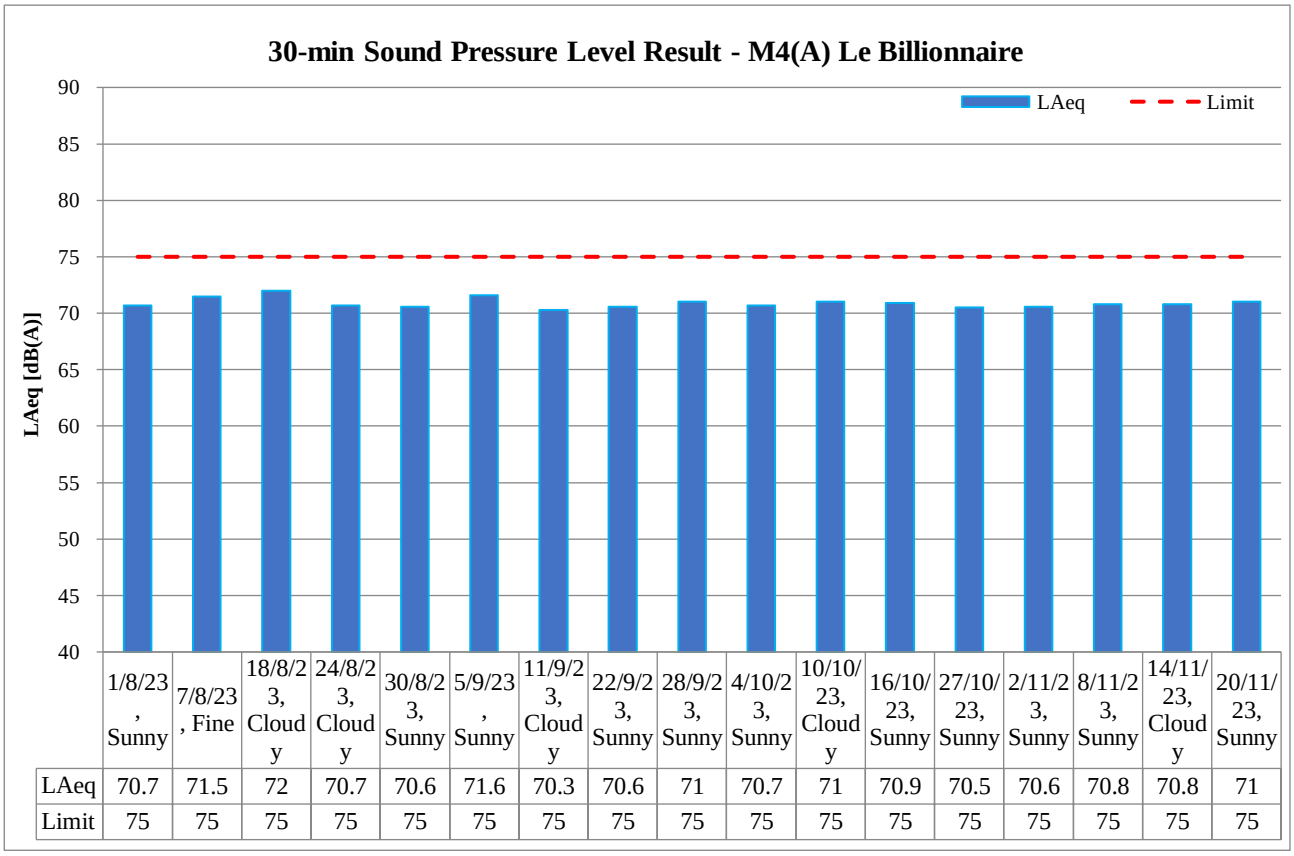
M4(A) – Le Billionnaire

Date	Temp (°C)	Wind Speed m/s	Weather	Measured Noise Level at M4(A), dB(A)							Limit
				Time			Baseline	L_{Aeq}	L_{A10}	L_{A90}	
02/11/2023	27.4	0.7	Sunny	9:20	-	9:50	69.5	70.6	71.7	69.5	75
08/11/2023	25.7	0.3	Sunny	13:00	-	13:30	69.5	70.8	72.0	69.7	75
14/11/2023	18.8	0.3	Cloudy	14:15	-	14:45	69.5	70.8	71.8	69.5	75
20/11/2023	25.4	1.1	Sunny	9:25	-	9:55	69.5	71.0	72.3	69.9	75
				Maximum				71.0			
				Minimum				70.6			
				Average				70.8			

M5(A) – Prince Ritz

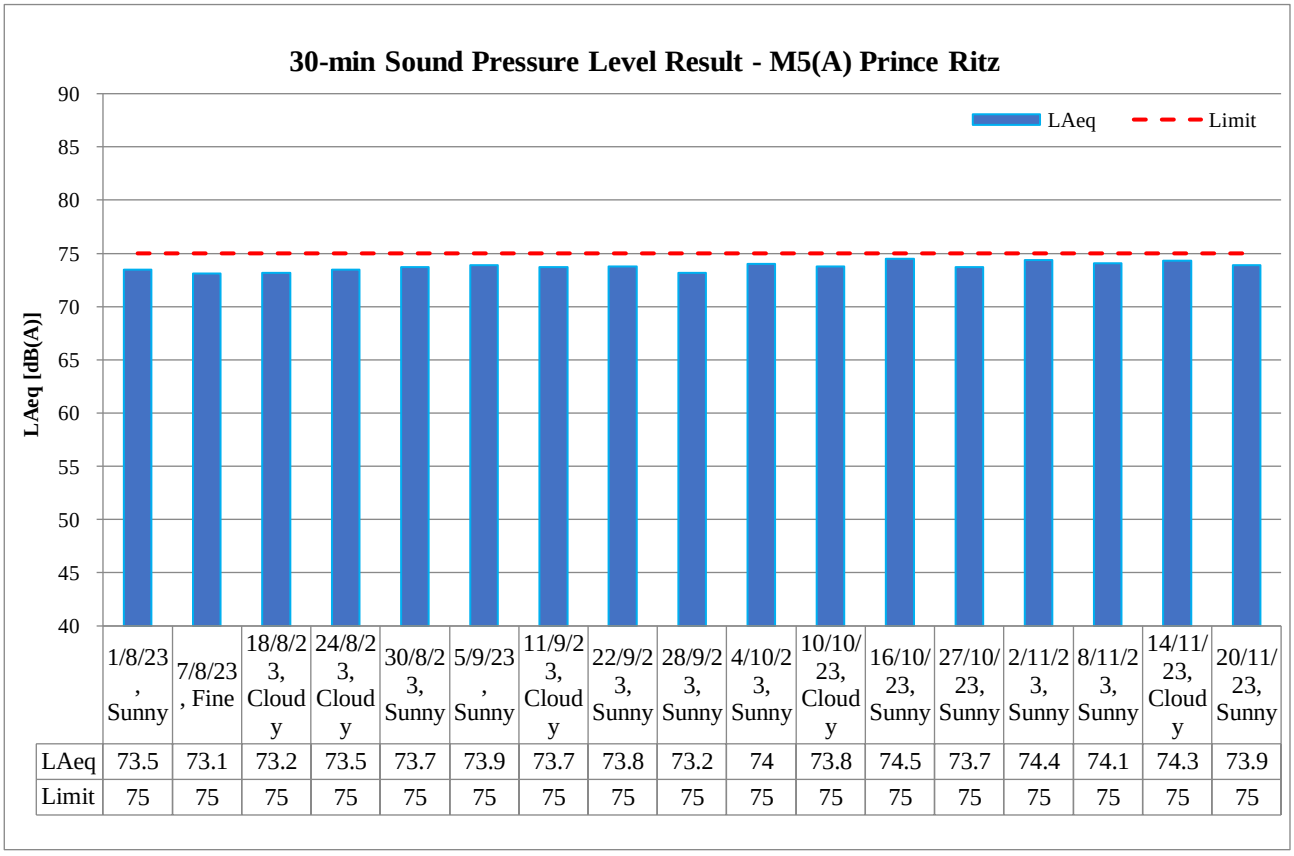
Date	Temp (°C)	Wind Speed m/s	Weather	Measured Noise Level at M5(A), dB(A)							Limit
				Time			Baseline	L_{Aeq}	L_{A10}	L_{A90}	
02/11/2023	27.4	1.1	Sunny	10:30	-	11:00	72.5	74.4	76.0	72.0	75
08/11/2023	25.7	0.1	Sunny	14:00	-	14:30	72.5	74.1	75.8	71.9	75
14/11/2023	18.8	0.5	Cloudy	15:06	-	15:36	72.5	74.3	75.8	72.4	75
20/11/2023	25.4	0.9	Sunny	10:20	-	10:50	72.5	73.9	75.7	71.8	75
				Maximum				74.4			
				Minimum				73.9			
				Average				74.2			

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



	1/8/23, Sunny	7/8/23, Fine	18/8/23, Cloudy	24/8/23, Cloudy	30/8/23, Sunny	5/9/23, Sunny	11/9/23, Cloudy	22/9/23, Sunny	28/9/23, Sunny	4/10/23, Sunny	10/10/23, Cloudy	16/10/23, Sunny	27/10/23, Sunny	2/11/23, Sunny	8/11/23, Sunny	14/11/23, Cloudy	20/11/23, Sunny
LAeq	70.7	71.5	72	70.7	70.6	71.6	70.3	70.6	71	70.7	71	70.9	70.5	70.6	70.8	70.8	71
Limit	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75

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



	1/8/23, Sunny	7/8/23, Fine	18/8/23, Cloudy	24/8/23, Cloudy	30/8/23, Sunny	5/9/23, Sunny	11/9/23, Cloudy	22/9/23, Sunny	28/9/23, Sunny	4/10/23, Sunny	10/10/23, Cloudy	16/10/23, Sunny	27/10/23, Sunny	2/11/23, Sunny	8/11/23, Sunny	14/11/23, Cloudy	20/11/23, Sunny
LAeq	73.5	73.1	73.2	73.5	73.7	73.9	73.7	73.8	73.2	74	73.8	74.5	73.7	74.4	74.1	74.3	73.9
Limit	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75

Major Construction Activities	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Construction works for DCS	✓	✓	✓	✓
Construction works for SB-01 tunnel	✓			
Construction of Underpinning of S14	✓	✓		
Construction of Retaining Wall Type 1 for S14	✓	✓	✓	✓
Construction of Pile Cap for S14		✓	✓	✓
Construction works for SMH404 and SMH505		✓	✓	✓
Construction of Permanent Shaft Structure of SB-01				✓
Demolition of bearing wall of S14			✓	✓
Modification works for Rising Main chamber WOC1, AVC2 and K1		✓	✓	✓
ELS modification and Backfilling works for Retrieving Shaft at Sa Po Road	✓			
Pre-bored socket H-pile construction works for Slip Road S14				
GI and Grouting works for Slip Road S14	✓			
Installation of post tensioning anchorage system at LW-02				✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RTBM dismantle		✓	✓	
RC construction for decking of Elevated Walkway LW-02	✓	✓	✓	✓
RC construction for Subway KS10 Lift and Staircase	✓	✓		
RC construction works for lift and staircase of LW-02	✓	✓	✓	✓
Renovation works for Subway KS10 Lift and Staircase			✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Road and drain construction works for Road L16	✓			
Road and Drain Construction works for Road L16, Commercial Street and Road D1		✓	✓	✓
Road and drain construction works for Olympic Avenue	✓	✓	✓	✓

Factors might affect the monitoring results	Reporting Period			
	Aug 2023	Sep 2023	Oct 2023	Nov 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

Appendix L – Event and Action Plan for noise

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

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

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

Event	Action			
	ET	**IEC**	**Supervisor / ER**	**Contractor**
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary.	1. Undertake remedial design if necessary.	
Non-conformity on one occasion	1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 4. Monitor remedial actions until rectification has been completed.	1. Check report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.
Repeated Non-conformity	1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Increase monitoring frequency. 4. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If non-conformity stops, cease additional monitoring.	1. Check monitoring report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Supervise implementation of remedial measures.	1. Notify Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.

Appendix N – Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE FOR 2023 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated A + B	Broken Concrete Generated A	General fill Generated B	Broken Concrete Reused in the Contract	General Fill Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse
	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]
JAN	0.67	0.00	0.67	0.00	0.09	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.01
FEB	0.81	0.00	0.81	0.00	0.08	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.01
MAR	0.79	0.00	0.79	0.00	0.08	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.01
APR	1.18	0.00	1.18	0.00	0.09	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.01
MAY	1.01	0.00	1.01	0.00	0.09	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.01
JUNE	0.23	0.00	0.23	0.00	0.05	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.01
SUB-TOTAL	4.69	0.00	4.69	0.00	0.48	0.00	4.21	0.00	0.00	0.00	0.00	0.00	0.06
JULY	0.30	0.00	0.30	0.00	0.06	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.01
AUG	0.90	0.00	0.90	0.00	0.06	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.01
SEPT	0.56	0.00	0.56	0.00	0.05	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.01
OCT	0.72	0.00	0.72	0.00	0.06	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.01
NOV	2.48	0.00	2.48	0.00	0.06	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.01
DEC													
TOTAL	9.65	0.00	9.65	0.00	0.77	0.00	8.88	0.00	0.00	0.00	0.00	0.00	0.11

Appendix O – Environmental Mitigation Implementation Schedule (EMIS)

EIA Ref	Recommended Mitigation Measures	Implementation			
Part B Water Quality		Not Observed	Yes	No	Remark
S8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. ~~Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow~~	☑	☐	☐	
S8.8	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. ~~The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.~~	☑	☐	☐	
S8.8	Construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	☑	☐	☐	
S8.8	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. ~~The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.~~	☑	☐	☐	
S8.8	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	☑	☐	☐	
S8.8	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	☑	☐	☐	
S8.8	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. Particular attention should be paid to the control of silty surface runoff during storm events.	☑	☐	☐	
S8.8	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	☑	☐	☐	
S8.8	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. ~~An adequately designed and located wheel washing bay should be provided at every site exit, and wash water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.~~	☐	☑	☐	
S8.8	*Drainage* On-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	☑	☐	☐	
S8.8	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	☑	☐	☐	
S8.8	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ	☑	☐	☐	
S8.8	*Sewage Effluent* Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	☑	☐	☐	
S8.8	Stormwater Discharges Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	☑	☐	☐	
S8.8	Debris and Litter In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management	☑	☐	☐	

EIA Ref	Recommended Mitigation Measures	Implementation			
	is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur				
S8.8	Construction Works at or in Close Proximity of Storm Culvert or Seafront The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	☑	☐	☐	
S8.8	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.	☑	☐	☐	
S8.8	Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.	☑	☐	☐	
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	☐	☑	☐	
S8.8	Construction debris and spoil should be covered up and/~~or disposed~~ of as soon as possible to avoid being washed into the nearby water receivers	☐	☑	☐	
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	☑	☐	☐	
S8.8	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	☑	☐	☐	
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	☑	☐	☐	
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	☑	☐	☐	
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	☑	☐	☐	
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	☑	☐	☐	
S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	☐	☑	☐	
Part C Construction Noise Impact		Not Observed	Yes	No	Remark
S7.8	Use of quiet PME, movable barriers for ~~Asphalt Paver, Breaker~~, Excavator and ~~Hand-held breaker and~~ full enclosure for~~ Air Compressor, Bar Bender, Concrete Pump,~~ Generator and Water Pump	☐	☑	☐	
S7.9	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. ~~Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible~~.	☐	☑	☐	
	Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. ~~Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs~~.	☑	☐	☐	
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	☑	☐	☐	
Part D Waste / Chemical Management		Not Observed	Yes	No	Remark
S5.2	Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites	☐	☑	☐	
	Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures	☐	☑	☐	
	Provision of sufficient waste disposal points and regular collection for waste. Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	☑	☐	☐	
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Separation of chemical wastes for special handling and appropriate treatment	☑	☐	☐	
S9.5	1)Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site ~~2)Training of site personnel in proper waste management and chemical waste handling procedures~~ ~~3)Provision of sufficient waste disposal points and regular collection for disposal~~ ~~4)Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers~~ ~~5)A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)~~	☐	☑	☐	

EIA Ref	Recommended Mitigation Measures	Implementation			
S9.5	Waste Reduction Measures 1) Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals 2) Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal 3) Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force 4) Any unused chemicals or those with remaining functional capacity should be recycled 5) Proper storage and site practices to minimize the potential for damage or contamination of construction materials	☑	☐	☐	
S9.5	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: 1) ~~Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible~~ 2) ~~Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric~~ 3) ~~Skip hoist for material transport should be totally enclosed by impervious sheeting~~ 4) Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site 5) The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores 6) ~~The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle~~ 7) ~~All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet~~	☐	☑	☐	
S9.5	When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction	☑	☐	☐	
S9.5	Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*	☑	☐	☐	
Part E Landscape & Visual		Not Observed	Yes	No	Remark
S13.9	CM1 - All existing trees should be carefully protected during construction. ~~CM2 - Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.~~ ~~CM3 - Control of night-time lighting.~~ CM4 - Erection of decorative screen hoarding.	☐	☑	☐	
Part F Air Quality		Not Observed	Yes	No	Remark
S6.8	~~Stockpiling site(s) should be lined with impermeable sheeting and bunded.~~ Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	☐	☑	☐	
S6.8	Misting for the dusty material should be carried out before being loaded into the vehicle.	☑	☐	☐	
S6.8	Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	☑	☐	☐	
S6.8	The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation	☑	☐	☐	
S6.8	The vehicles should be restricted to maximum speed of 10 km per hour ~~and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials~~	☐	☑	☐	
S6.8	Vehicle washing facilities should be provided at every vehicle exit point	☑	☐	☐	
S6.8	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	☐	☑	☐	
S6.8	Every main haul road should be ~~scaled with concrete and~~ kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	☐	☑	☐	

EIA Ref	Recommended Mitigation Measures	Implementation			
S6.8	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.	☐	☑	☐	
S6.8	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	☐	☑	☐	
S6.5	8 times daily watering of the work site with active dust emitting activities.	☐	☑	☐	

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

Reporting Month: November 2023

Contract No.	Record of Complaint (Yes/No)	Record of Warning (Yes/No)	Notification of Summons and Successful Prosecutions (Yes/No)
ED/2018/05	No	No	No

Cumulative Statistics on Complaints, Notification of Summons and Successful Prosecutions upto reporting month

Contract No.	Record of Complaint	Record of Warning	Notification of Summons and Successful Prosecutions
ED/2018/05	1	0	0