

Ref.: CEDKTDS4EM00_0_0376L.24

16 September 2024

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

By Post and Email

Attention: Ms. Fanny Lau

Dear Madam,

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

Monthly EM&A Report for August 2024

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for August 2024 (Version 1.1) certified by the ET Leader and provided to us via email on 16 September 2024.

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

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

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

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



Y H Hui
Independent Environmental Checker

c.c. CEDD
Ka Shing
Penta-Ocean

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

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

Contract No.: EDO 15/2018

August 2024

(Version 1.1)

Certified By: _____



(Environmental Team Leader)

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EXECUTIVE SUMMARY

This is the 56th Monthly Environmental Monitoring & Audit (EM&A) report which summaries the findings of the EM&A Programme during the reporting period from 1 to 31 August 2024.

Breaches of Action and Limit Levels

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

Table I Non-compliance Record in the Reporting Month

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

Complaint log

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

Table II Summary of complaints in the Reporting Month

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

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

Notifications of summons and successful prosecutions

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

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

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

Report changes

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

Key construction works in the reporting month

8) Major construction activities undertaken during the reporting month included:

- Construction of pillar box and laying cable ducting by UU at LT-2
- Installation of lift cart and E&M works for Lift LT-4
- Junction realignment and modification works at Shing Kai Road
- Laying of stormwater drainage pipes/ sewer pipes/ watermains
- Waterproof work for Box Culvert under section 8 (confined space)
- Construction of Seawater Intake Box Culvert
- Construction of Pumping Stations
- Construction of Harbour Steps and Outfalls
- Construction of Observation Deck
- Construction of Toilet Cum Changing Room

Future key issues

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

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

Future key issues in the coming month	Potential impact
Construction of Back-of- House	Noise and Air Quality, Chemical and Waste Management
Rising main laying works	Noise, Air and Water Quality
Construction of footpath at Road L12d	Noise and Air Quality, Chemical and Waste Management
Hard landscaping works for Elevated Landscape Deck	Noise and Air Quality, Chemical and Waste Management
Construction of Temp office	Noise and Air Quality, Chemical and Waste Management

1. INTRODUCTION

Project Background

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

Project Organization

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

Table 1.1 Contact Information of Key Personnel

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

Works Area and Construction Programme

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

Construction works undertaken during reporting month

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

Table 1.2 Major activities of the Project during reporting month

Construction of pillar box and laying cable ducting by UU at LT-2	Installation of lift cart and E&M works for Lift LT-4
Junction realignment and modification works at Shing Kai Road	Laying of stormwater drainage pipes/ sewer pipes/ watermains
Waterproof work for Box Culvert under section 8 (confined space)	Construction of Seawater Intake Box Culvert
Construction of Pumping Stations	Construction of Harbour Steps and Outfalls
Construction of Observation Deck	Construction of Toilet Cum Changing Room

Submission Status under the Environmental Permits

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

Table 1.3 Summary of Status of Required Submission of EPs

EP Condition EP-337/2009	EP Condition EP-445/2013/B	Submission	Submission Date
Condition 1.11	Condition 1.12	Notification of Commencement Date of Construction of the Project	6 Jan 2020
Condition 2.3	Condition 2.3	Management Organization of Main Construction Companies	9 Sep 2019
Condition 2.3	Condition 2.3	Updated Management Organization of Main Construction Companies	17 Aug 2021
Condition 2.4	Condition 2.4	Design Drawings	6 Jan 2020
Condition 2.11	Condition 2.5	Landscape Mitigation Plans	13 Nov 2020
Condition 2.1	Condition 2.5	Landscape Mitigation Plans (Revision 2)	18 May 2021
NA	Condition 2.9	Detailed Design Plan of Traffic Noise Mitigation Measures	9 Dec 2022
Condition 3.2	NA	Baseline Monitoring Report	2 Jan 2020
Condition 3.2	NA	Revised Baseline Monitoring Report	28 Mar 2020
Condition 3.3	Condition 3.2	Monthly EM&A Report (July 2024)	15 August 2024

2. AIR QUALITY MONITORING

Monitoring Requirements

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

Monitoring Locations

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

Table 2.1 Locations of Air Quality Monitoring Stations

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

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

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

2.5 For those premises have property management company, ET sent the proposal to owner /

property management company and explained the purpose of environmental monitoring (refer to Appendix C – Apply permission for Environmental Monitoring). Figure 7 shows the proposed alternative monitoring locations. No permission of setup and entry is received until the reporting month.

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

Table 2.2 Proposed alternative monitoring locations for AM4(A)

Proposed alternative monitoring locations for M11	Status upto reporting month
A1 - The Lok Sin Tong Modular Social Housing Scheme	Rejected application on 13 Oct 2022
A2 - Freder Centre	No reply from building management office
A3 - New Port Centre	No reply from building management office
A4 - 112 - 138 To Kwa Wan Road	No property management company and could not apply the permission.
A5 - 2 - 26 Hok Ling Street	No property management company and could not apply the permission.
A6 - 1 - 27 Hok Ling Street	No property management company and could not apply the permission.
A7 - 2 - 28 Tsun Fat Street	No property management company and could not apply the permission.
A8 - 1 - 27 Tsun Fat Street	No property management company and could not apply the permission.
A9 - 2 - 28 Yin On Street	No property management company and could not apply the permission.
A10 - 1 - 27 Yin On Street	No property management company and could not apply the permission.
A11 - 2 - 28 Shim Luen Street	No property management company and could not apply the permission.
A12 - 1 - 27 Shim Luen Street	No property management company and could not apply the permission.
A13 - 2 - 28 Hung Wan Street	No property management company and could not apply the permission.
A14 - 1 - 27 Hung Wan Street	No property management company and could not apply the permission.
A15 - 2 - 28 Pang Ching Street	No property management company and could not apply the permission.
A16 - 1 - 27 Pang Ching Street	No property management company and could not apply the permission.
A17 - 2 - 28 Ying Yeung Street	No property management company and could not apply the permission.
A18 - 1 - 27 Ying Yeung Street	No property management company and could not apply the permission.
A19 - 2 - 28 Lun Cheung Street	No property management company and could not apply the permission.
A20 - 1 - 27 Lun Cheung Street	No property management company and could not apply the permission.

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

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

Monitoring Parameters, Frequency and Duration

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

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

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

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

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

Monitoring Equipment

2.11 24-hour average TSP and 1-hour average TSP levels were measured for impact monitoring. 24-hour average TSP levels were measured by the High Volume Samplers (HVS) and 1-hour average TSP levels were measured by direct reading method to indicate short-term impacts. Wind data monitoring equipment was set up at conspicuous locations for logging wind speed

and wind direction near to the dust monitoring locations. Table 2.4 summarizes the equipment to be used in the air quality monitoring.

Table 2.4 Air Quality Monitoring Equipment

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

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

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

Monitoring Methodology and QA/QC Procedure

24-hour TSP Monitoring

Operating/Analytical Procedures

2.14 Setup criteria of HVS are shown as follows:

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

monitoring.

- Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity was provided to operate the samplers.

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

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

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

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

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

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

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

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

Maintenance/Calibration

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

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

1-hour TSP Monitoring

Measurement Procedures

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

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

Maintenance/Calibration

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

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

Wind Data Monitoring

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

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

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

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

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

Action and Limit Levels

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

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

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

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

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

Impact Air Quality Monitoring results

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

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

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

Air Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM3	50	40 – 61	182	260
AM4(A)	/	/ – /	187	260
AM7	55	41 – 63	181	260

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

Air Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM3	45	31 – 64	297	500
AM4(A)	66	44 – 89	326	500
AM7	55	39 – 72	315	500

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

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

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

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

3. NOISE MONITORING

Monitoring Requirements

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

Monitoring Locations

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

Table 3.1 Locations of Noise Monitoring Stations

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

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

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

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

Table 3.2 Proposed alternative monitoring locations for M11

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

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

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

Monitoring Parameters, Frequency and Duration

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

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

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

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

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

Monitoring Equipment

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

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

Table 3.4 Noise Monitoring Equipment

Equipment	Model	Quantity
Sound Level Meter	RION NL52	2
Sound Level Calibrator	RION NC 74	1
Sound Level Calibrator	RION NC 75	1
Air Flowmeter	TSI TA440 Air Velocity	1

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

Monitoring Methodology and QA/QC Procedure

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

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

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

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

3.19 Noise level was recorded.

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

Maintenance and Calibration

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

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

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

Action and Limit Levels

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

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

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

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

Impact Noise Monitoring results

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

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

Table 3.6 Summary of Noise Monitoring Data during the reporting month

Noise Monitoring Station	Measured $L_{Aeq, 30\text{-min}}$, Average, dB(A)	Measured $L_{Aeq, 30\text{-min}}$, Range, dB(A)	Action Level	Limit Level [^]
M11	73.5	73.1 – 74.0	When one documented complaint is received	75 dB(A)
M12	63.3	61.5 – 64.8		

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

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

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

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

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

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

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

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

Air Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 24-hour average TSP concentration		Measured 24-hr average TSP in Reporting Month (August 2024) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM3 - Sky Tower	A40 [^]	106	138	40 – 61
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	A43 [^]	123	195	/ – /
AM7 – Hong Kong Children's Hospital	PA60	NA	NA	41 – 63

Note:

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

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

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

Air Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 1-hour average TSP concentration		Measured 1-hr average TSP in Reporting Month (August 2024) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM3 - Sky Tower	A40	217 [^]	247 [^]	31 – 64
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	A43	283 [^]	409 [^]	44 – 89
AM7 – Hong Kong Children's Hospital	PA60	NA	NA	39 – 72

Note:

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

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

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Noise Monitoring Station	NSR No. in EIA report	Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour L _{Aeq, 30min} , dB(A)	Measured Noise Level in Reporting Month (August 2024) L _{Aeq, 30min} , dB(A)
M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop*	N18	50 – 76*	73.1 – 74.0
M12 - Hong Kong Children's Hospital	PN83, PN84, PN84A	NA	61.5 – 64.8

Note:

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

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

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

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

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

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

4.6 Noise monitoring results at M11 were recorded lower than the prediction in the EIA Report.

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

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

5. LANDSCAPE AND VISUAL MONITORING

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

Results and Observations

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

5.3 Site inspections were conducted on 1, 6, 15, 22 and 29 August 2024 in the reporting month.

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

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

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
01 August 2024	No	NA	NA
06 August 2024	No	NA	NA
15 August 2024	No	NA	NA
22 August 2024	No	NA	NA
29 August 2024	No	NA	NA

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

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

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT




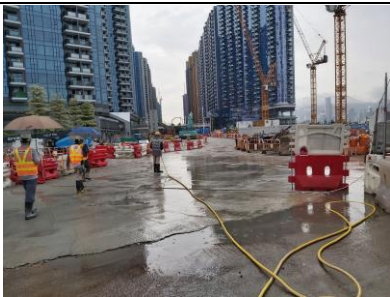
Site Inspection





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

6.2 Site inspections were conducted on 1, 6, 15, 22 and 29 August 2024 in the reporting month.

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

Table 6.1 Summary of site inspections observations during the reporting month

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
01 August 2024	 <p>Observation: The NRMM label was missing at Part 2A.</p>	 <p>Action Taken: The NRMM label was displayed at a conspicuous position.</p>	Closed-out on 06 August 2024
06 August 2024	 <p>Observation: The site entrance (L12D road) should be sprayed water regularly</p>	 <p>Action Taken: The site entrance (L12D road) has been sprayed water regularly.</p>	Closed-out on 15 August 2024

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
15 August 2024	NA	NA	NA
22 August 2024	 <p>Observation: The NRMM label on bobcat is found corrupt, please display a new one.</p>	 <p>Action Taken: The NRMM label on bobcat has been properly displayed a new one.</p>	Closed-out on 29 August 2024
29 August 2024	 <p>Observation: The NRMM label should be properly displayed on construction equipment.</p>	 <p>Action Taken: The NRMM label has been properly displayed on construction equipment.</p>	Closed-out on 05 September 2024

Status of Waste Management

- 6.4 The amount of wastes generated by the major site activities of the work contracts within the Project during the reporting month is shown in Appendix O.
- 6.5 The Contractor was registered as a chemical waste producer for the Project. The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of

Practice on the Packaging, Labelling and Storage of Chemical Wastes.

Status of Environmental Licenses, Notification and Permits

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

Table 6.2 Summary of Environmental Licenses, Notifications and Permits

Environmental Licenses, Notifications and Permits	Ref. No.	Valid Form	Valid Till
Environmental Permit under EIAO	EP-337/2009	23 Apr 2009	N/A
	EP-445/2013/B	3 May 2022	N/A
Construction Dust Notification under APCO	445956	6 Jun 2019	N/A
Wastewater Discharge License under WPCO	WT00034610-2019	26 Sep 2019	30 Sep 2024
Waste Disposal Billing Account	7034450	28 Jun 2019	N/A
Registration as a Chemical Waste Producer	5218-286-P3182-03	18 Jul 2019	N/A
Construction Noise Permit	GW-RE0525-24	30 Apr 2024	29 Oct 2024
	GW-RE0526-24	30 Apr 2024	29 Oct 2024
	GW-RE0082-24	14 Feb 2024	13 Aug 2024
	GW-RE0445-24	21 Apr 2024	20 Oct 2024
	GW-RE0570-24	10 May 2024	09 Nov 2024
	GW-RE0787-24	05 Jul 2024	04 Jan 2025
	GW-RE0945-24	15 Aug 2024	14 Feb 2025

Implementation Status of Environmental Mitigation Measures

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

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

Environmental Complaint and Non-compliance

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

Table 6.3 Summary of complaints in the Reporting Month

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

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

Notifications of summons and successful prosecutions

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

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

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

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

7. FUTURE KEY ISSUES

Construction Programme in the coming month

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

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

Future key issues in the coming month	Potential impact
Construction of Back-of- House	Noise and Air Quality, Chemical and Waste Management
Rising main laying works	Noise, Air and Water Quality
Construction of footpath at Road L12d	Noise and Air Quality, Chemical and Waste Management
Hard landscaping works for Elevated Landscape Deck	Noise and Air Quality, Chemical and Waste Management
Construction of Temp office	Noise and Air Quality, Chemical and Waste Management

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

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

Environmental Site Inspection and Monitoring Schedule for next month

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

8. CONCLUSIONS

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

Figure

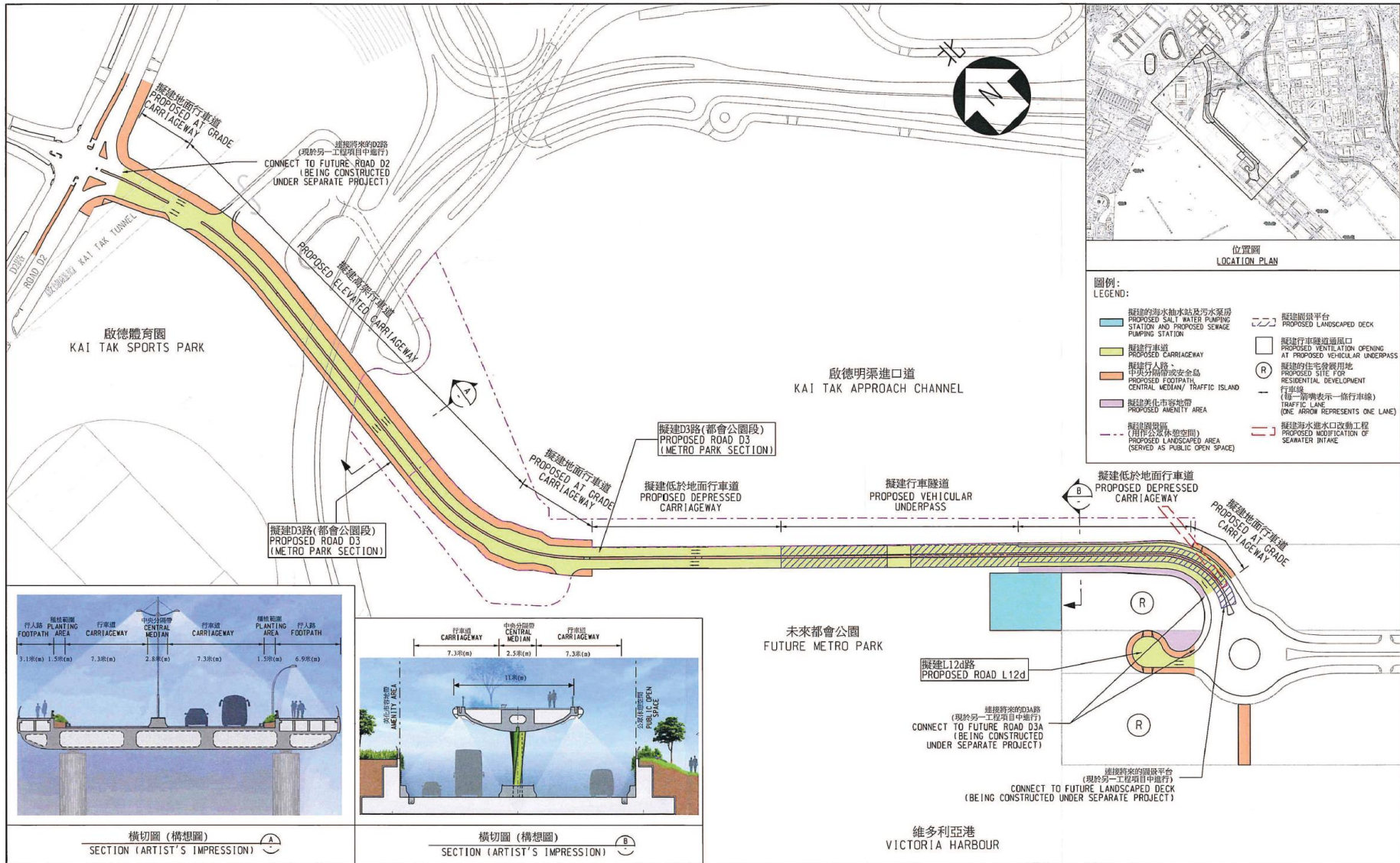


Figure 1 – Proposed works of Contract No. ED/2018/01

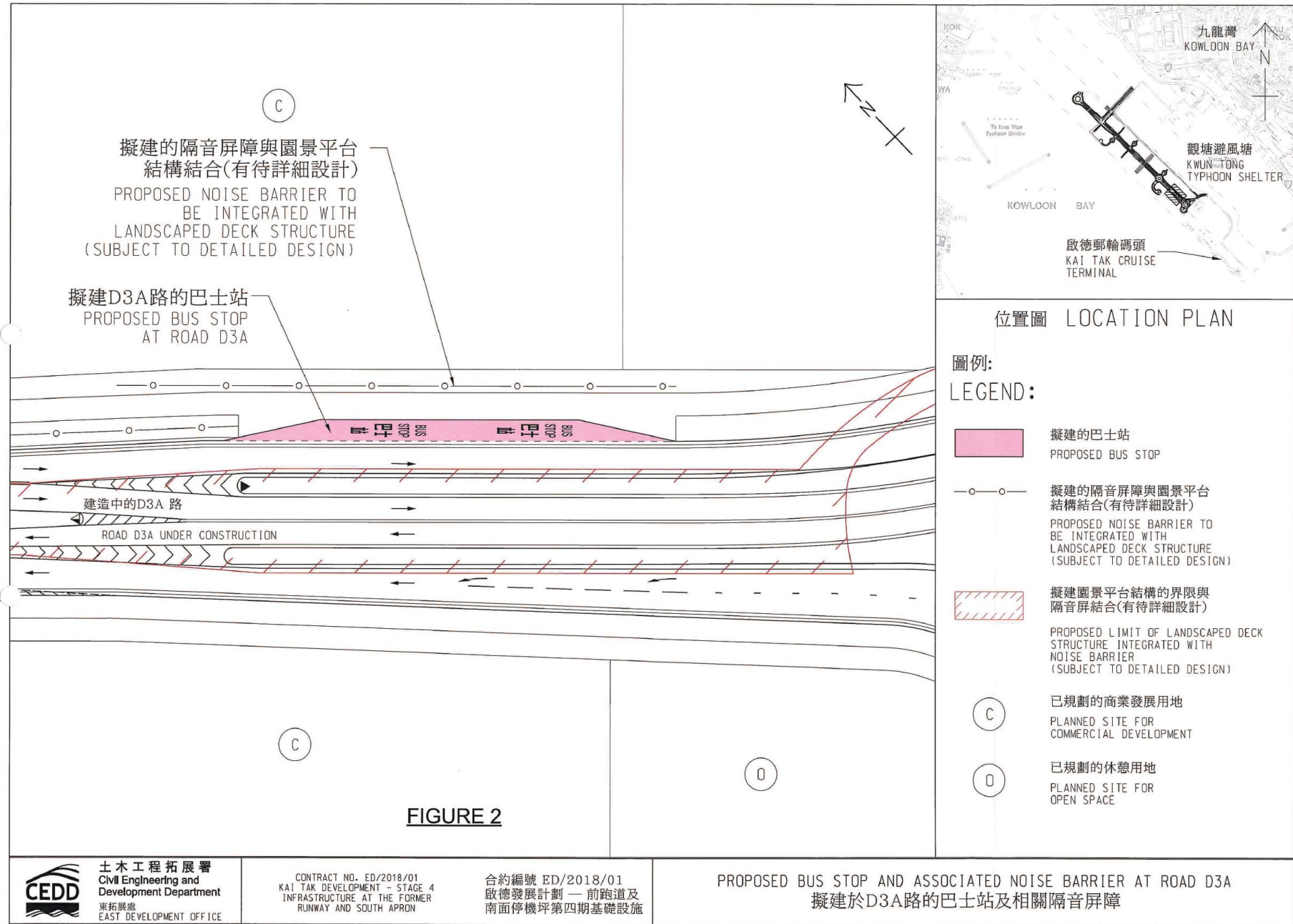


Figure 2 – Proposed Bus Stop And Associated Noise Barrier At Road D3A

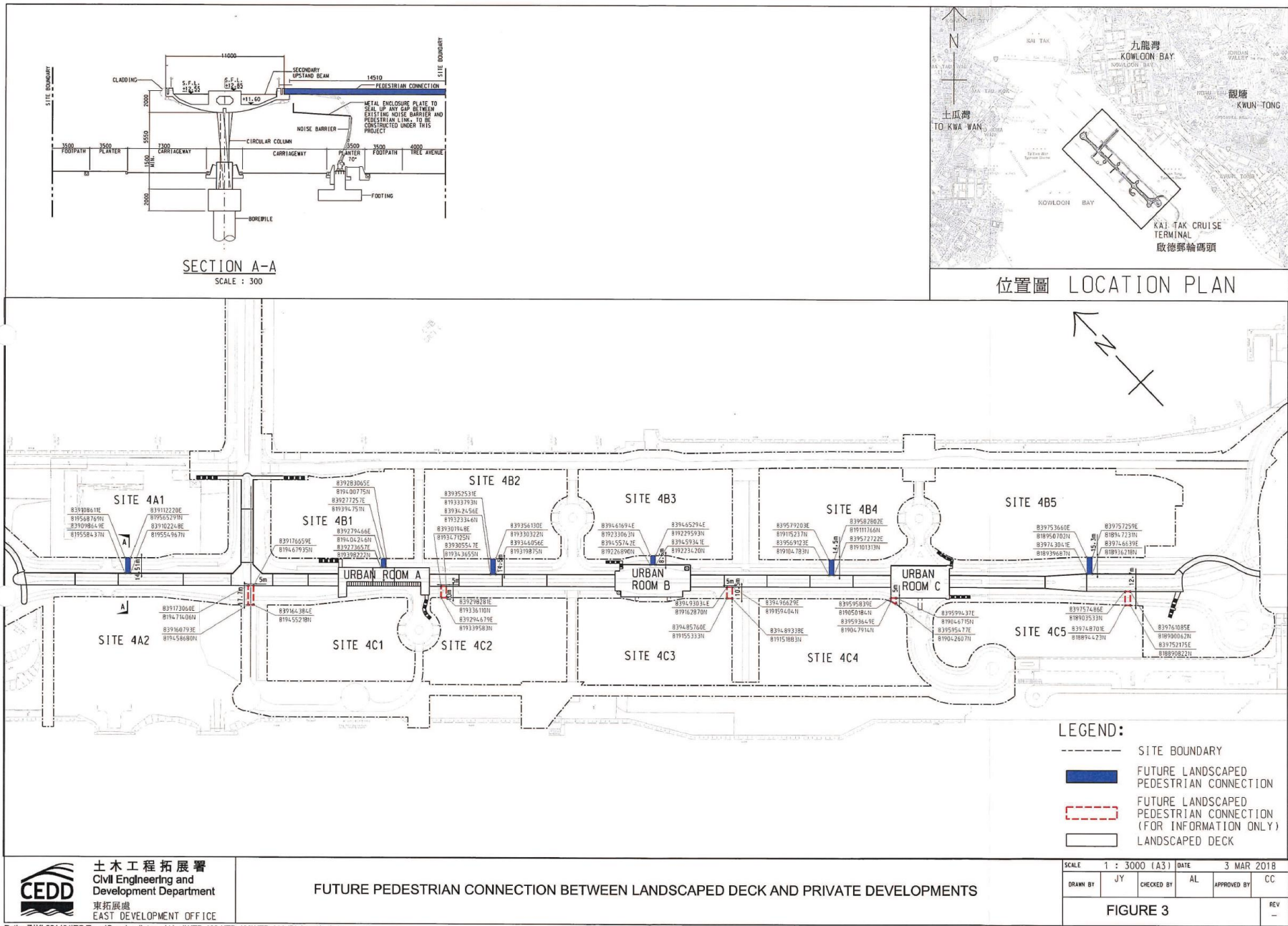


Figure 3 – Future Pedestrian Connection Between Landscaped Deck And Private Developments

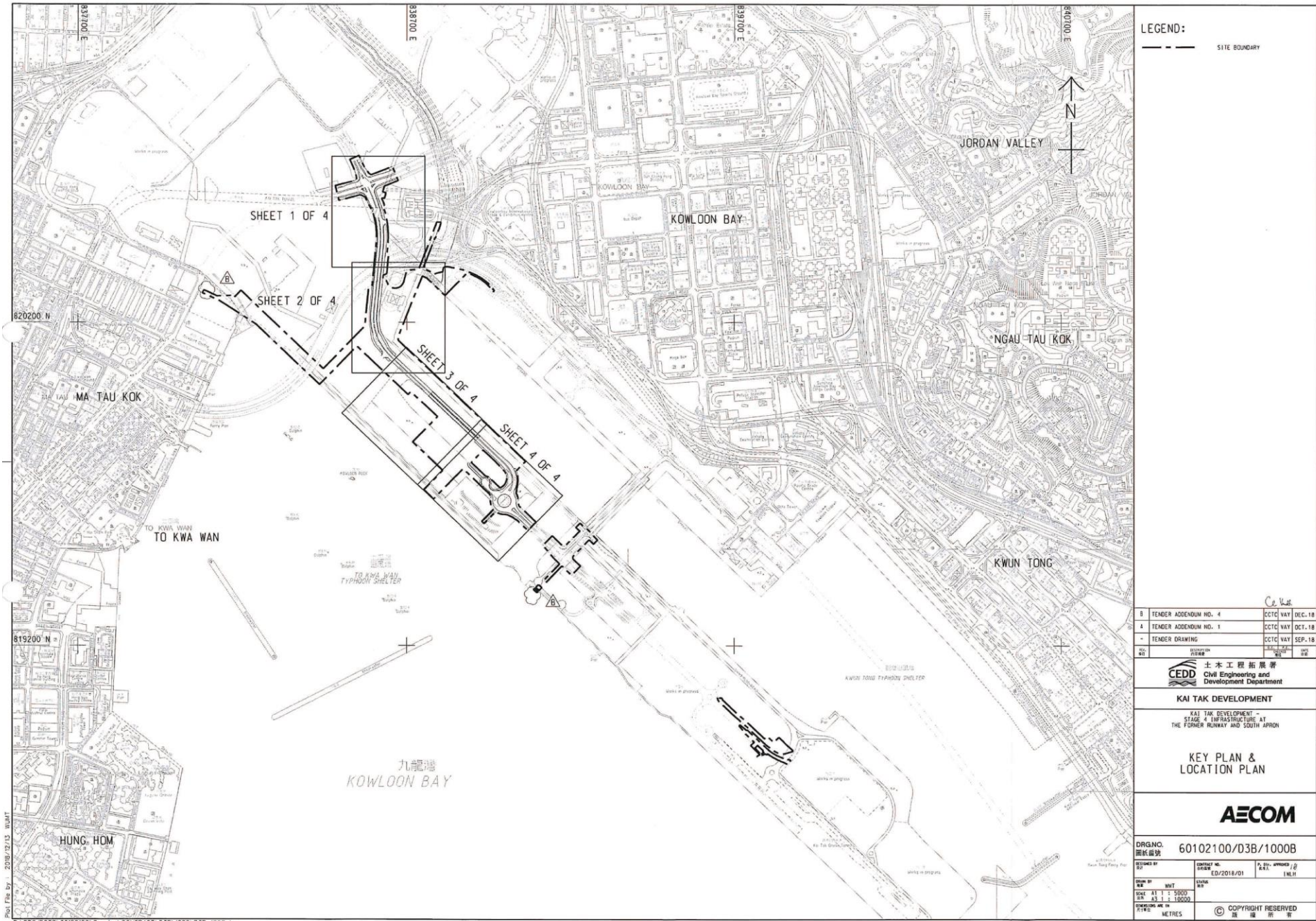


Figure 4 – Site Layout Plan

Special Traffic & Transport Arrangement

Notices on Clearways

Notices on Public Transports

Notices on Prohibited Zone

Notices on Temporary Speed Limits

Notices on Temporary Road Closure

Notices on Expressways

Other Notices

TRAFFIC NOTICES

TRANSPORT DEPARTMENT NOTICE

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

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

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

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

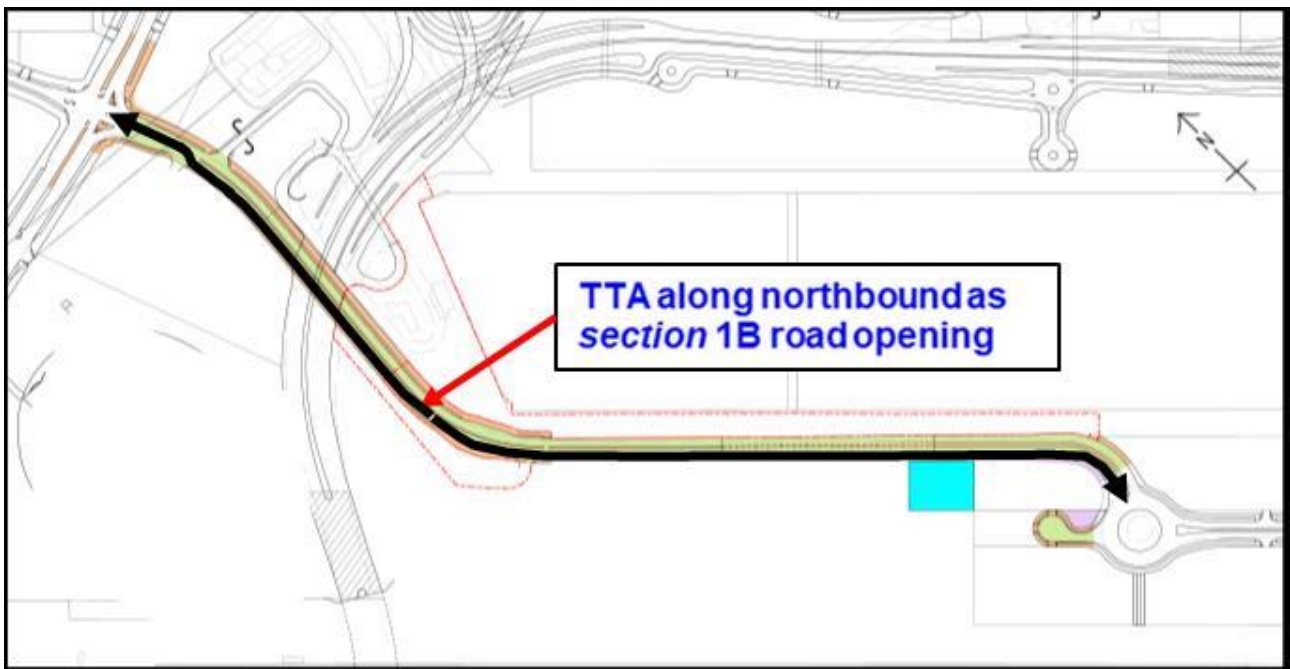


Figure 5 – New Opened Road on 31 December 2022

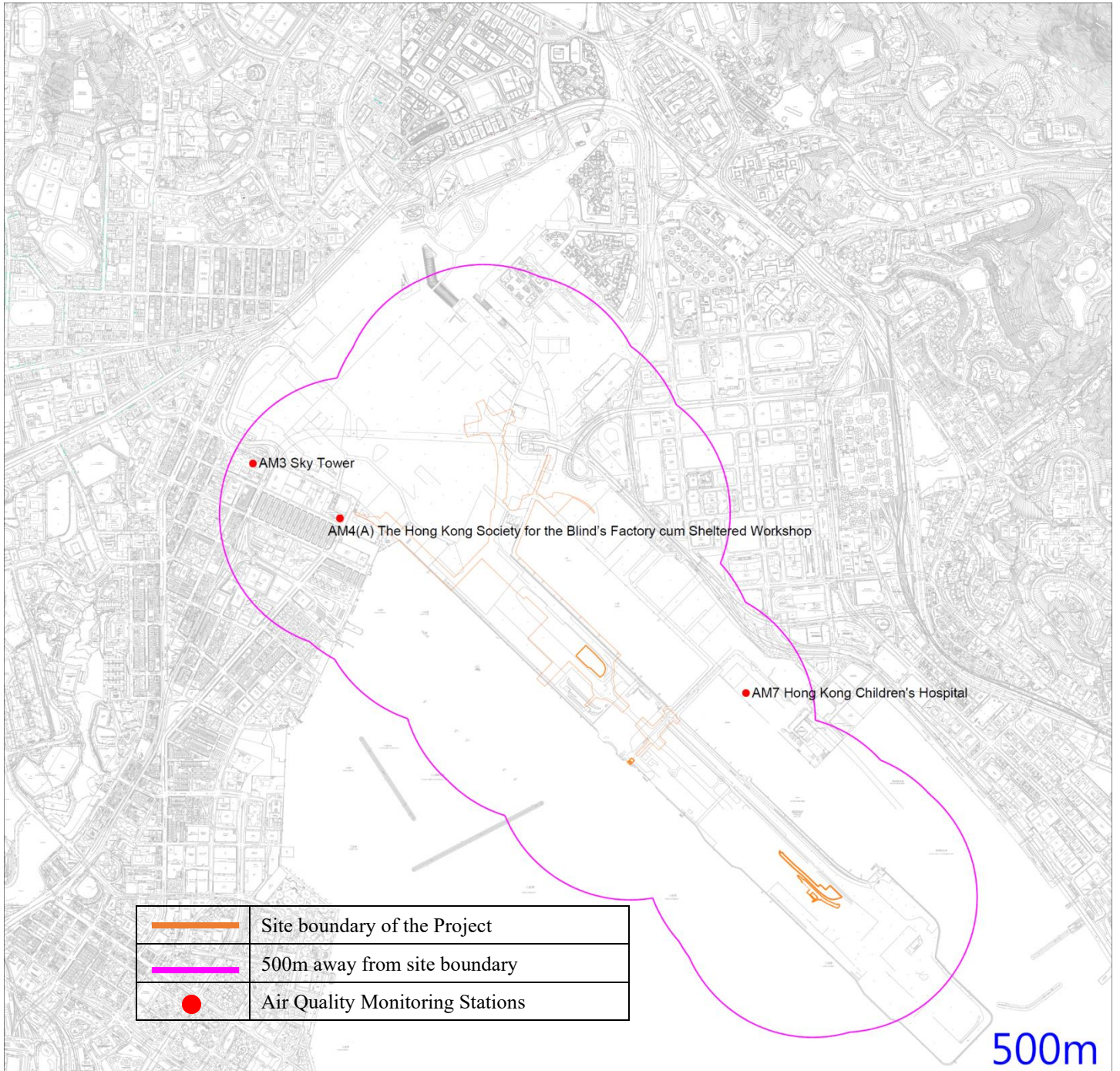


Figure 6 – Air Quality Monitoring Stations

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

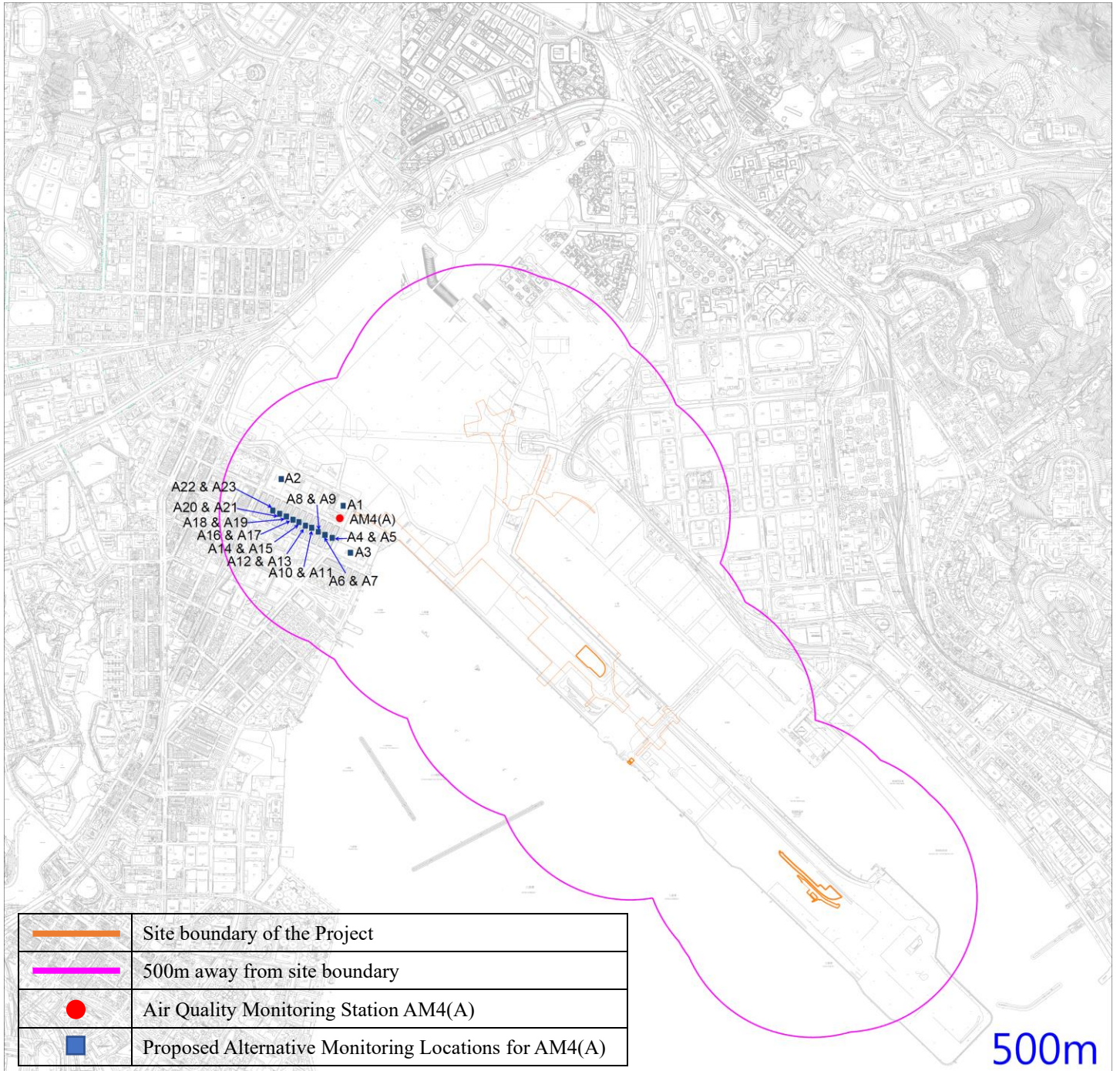


Figure 7 – Proposed Alternative Monitoring Locations for AM4(A)

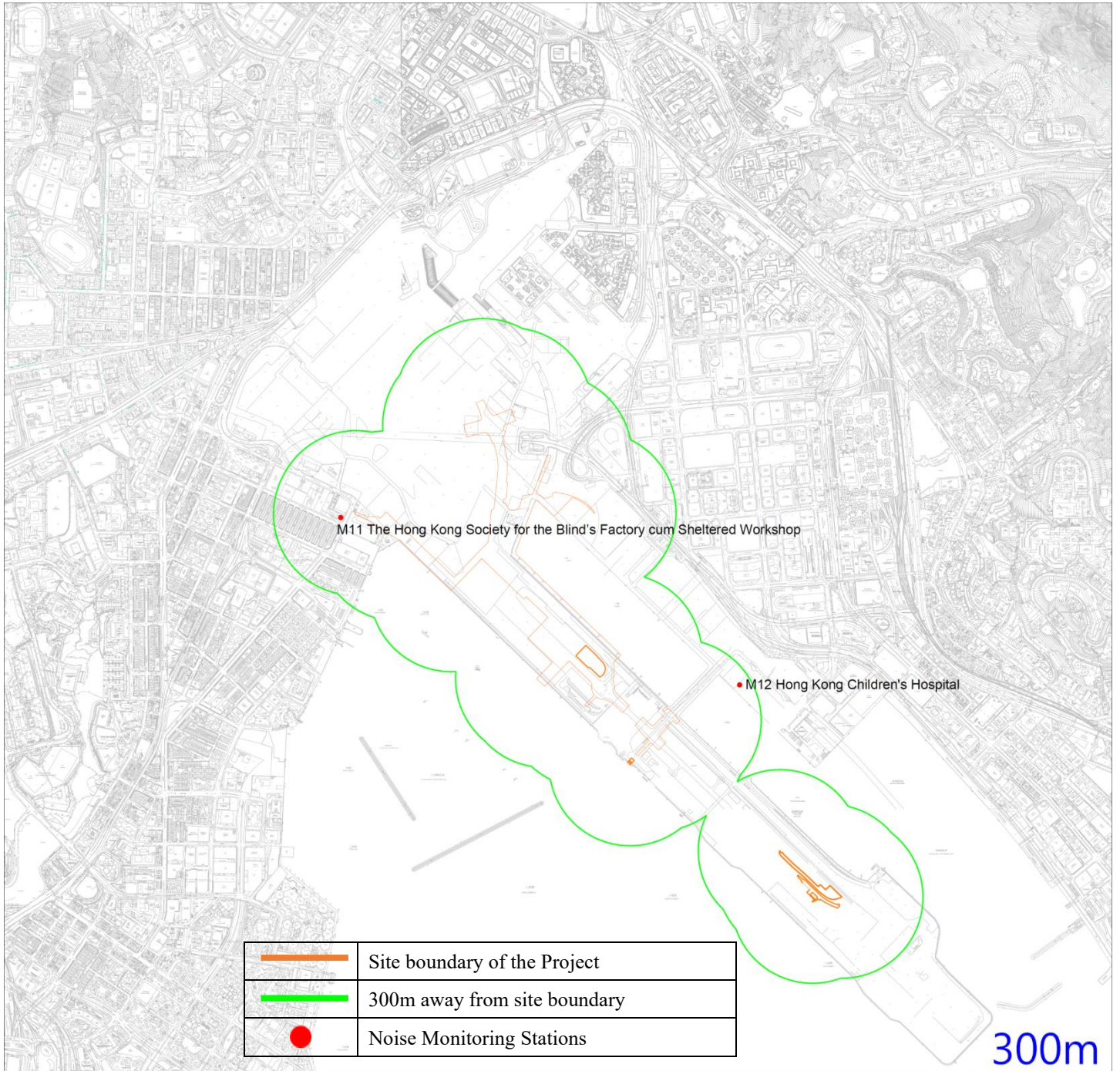


Figure 8 – Noise Monitoring Stations

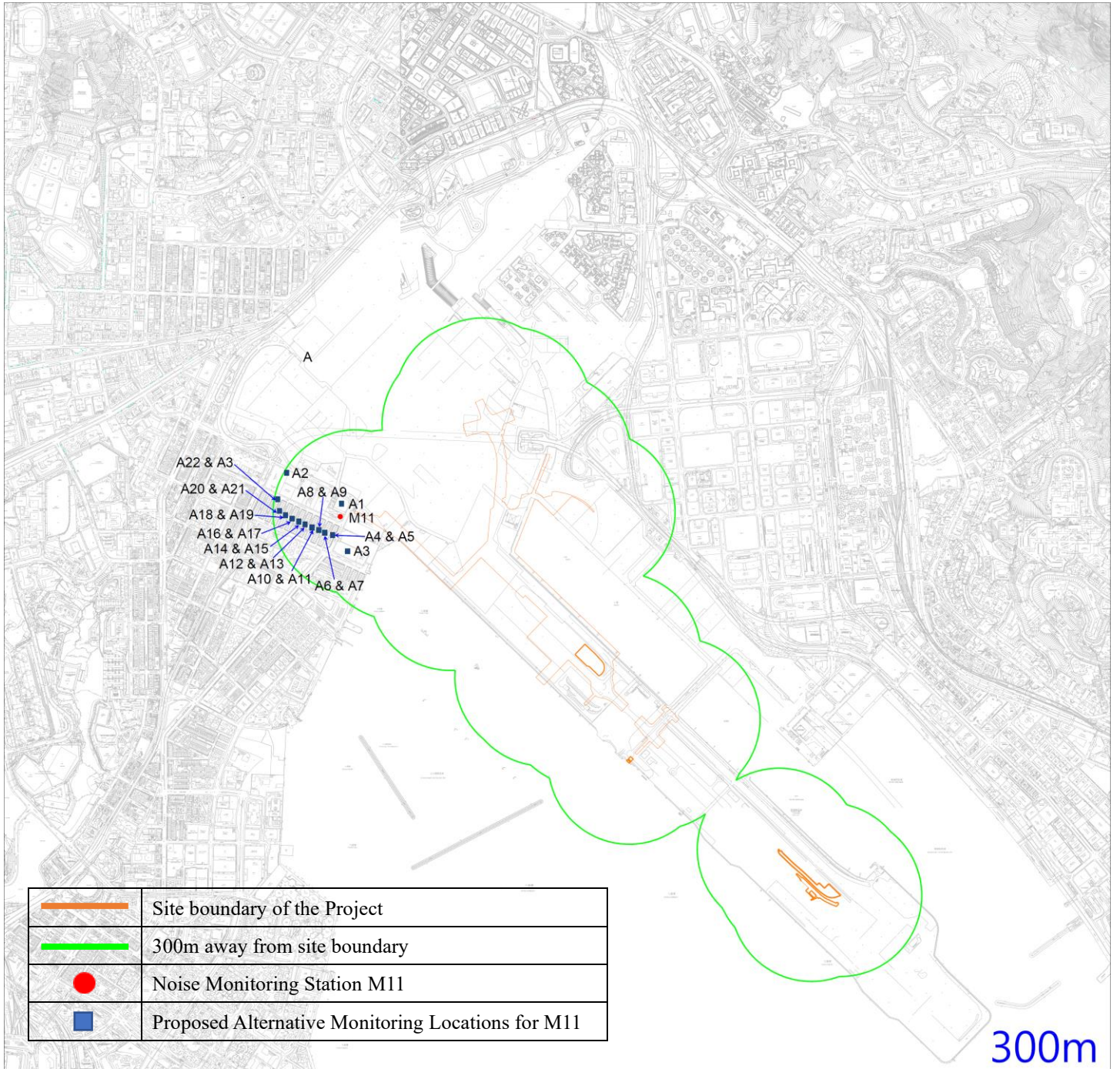
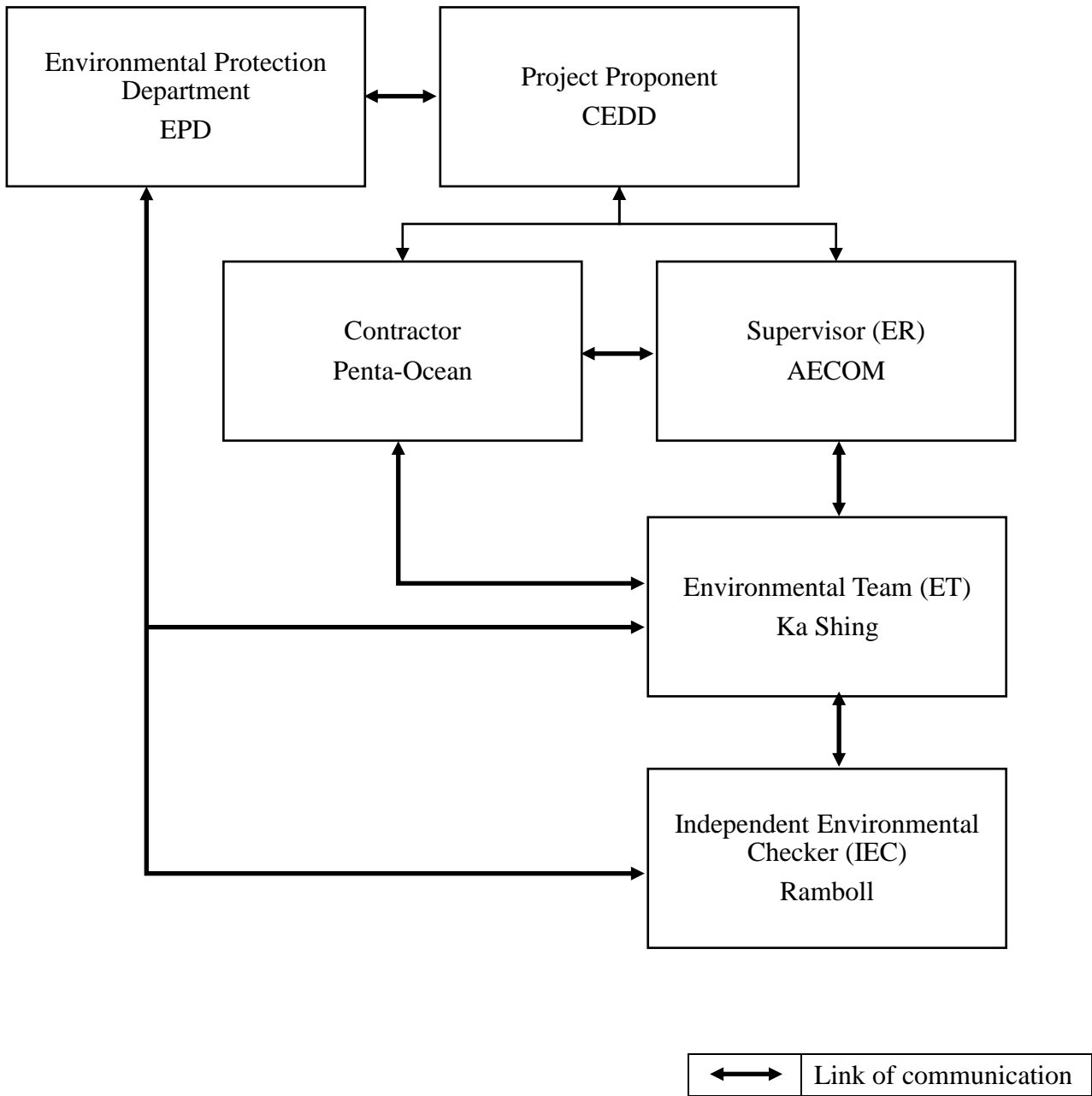


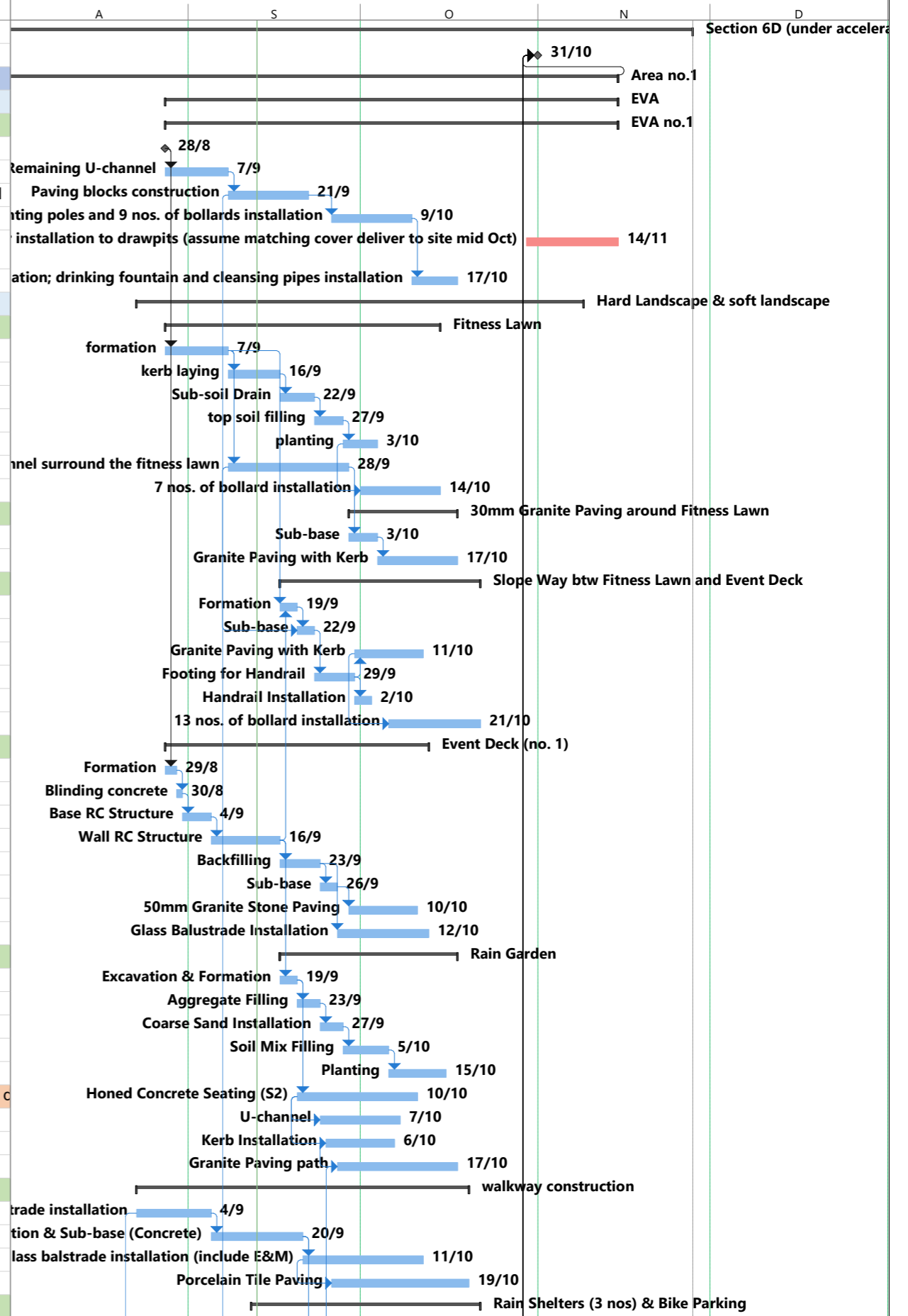
Figure 9 – Proposed Alternative Monitoring Locations for M11

Appendix A – Organization Chart of EM&A Team



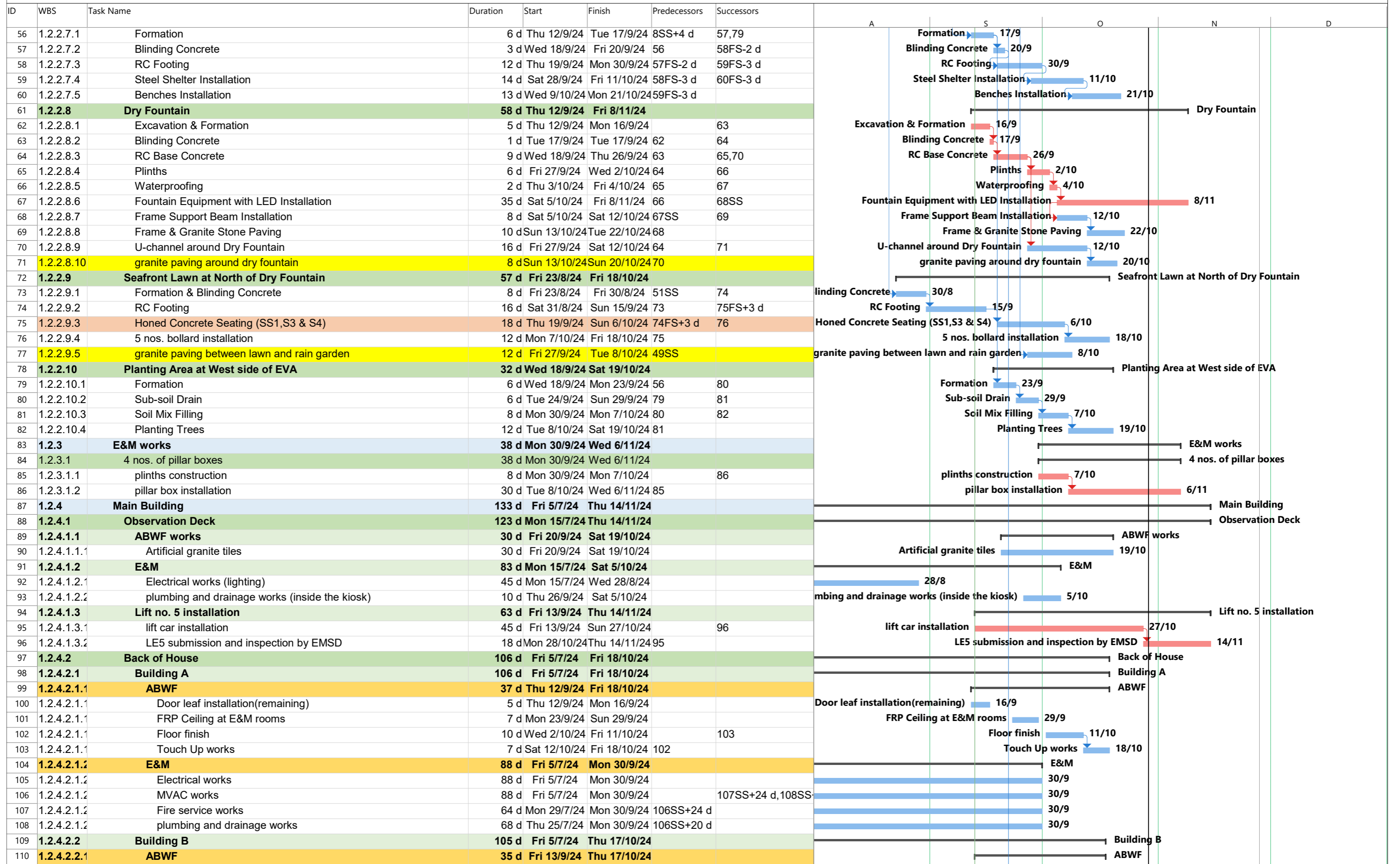
Appendix B – Construction Programme

ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	
1	1	Section 6D (under acceleration programme)	807 d	Thu 1/9/22	Ned 27/11/24			
2	1.1	Planned completion (31/10/24)	0 d	Thu 31/10/24	Thu 31/10/24	3,131,249,28		31/10
3	1.2	Area no.1	133 d	Fri 5/7/24	Thu 14/11/24		2	
4	1.2.1	EVA	79 d	Wed 28/8/24	Thu 14/11/24			
5	1.2.1.1	EVA no.1	79 d	Wed 28/8/24	Thu 14/11/24			
6	1.2.1.1.1	Access Divert from CKR-KTE	0 d	Wed 28/8/24	Wed 28/8/24		7,32,14	
7	1.2.1.1.2	Remaining U-channel	11 d	Wed 28/8/24	Sat 7/9/24	6	8	28/8
8	1.2.1.1.3	Paving blocks construction	14 d	Sun 8/9/24	Sat 21/9/24	7	56SS+4 d,9FS+4 d	7/9
9	1.2.1.1.4	6 nos. of lighting poles and 9 nos. of bollards installation	14 d	Thu 26/9/24	Wed 9/10/24	8FS+4 d	11	21/9
10	1.2.1.1.5	matching cover installation to drawpits (assume matching cover deliver to site mid Oct)	16 d	Wed 30/10/24	Thu 14/11/24			9/10
11	1.2.1.1.6	irrigation; drinking fountain and cleansing pipes installation	8 d	Thu 10/10/24	Thu 17/10/24	9		17/10
12	1.2.2	Hard Landscape & soft landscape	78 d	Fri 23/8/24	Fri 8/11/24			
13	1.2.2.1	Fitness Lawn	48 d	Wed 28/8/24	Mon 14/10/24			
14	1.2.2.1.1	formation	11 d	Wed 28/8/24	Sat 7/9/24	6	15,25,19	7/9
15	1.2.2.1.2	kerb laying	9 d	Sun 8/9/24	Mon 16/9/24	14	16	16/9
16	1.2.2.1.3	Sub-soil Drain	6 d	Tue 17/9/24	Sun 22/9/24	15	17	22/9
17	1.2.2.1.4	top soil filling	5 d	Mon 23/9/24	Fri 27/9/24	16	18	27/9
18	1.2.2.1.5	planting	6 d	Sat 28/9/24	Thu 3/10/24	17	20SS+3 d	3/10
19	1.2.2.1.6	u-channel surround the fitness lawn	21 d	Sun 8/9/24	Sat 28/9/24	14	22,26SS	28/9
20	1.2.2.1.7	7 nos. of bollard installation	14 d	Tue 1/10/24	Mon 14/10/24	18SS+3 d		14/10
21	1.2.2.2	30mm Granite Paving around Fitness Lawn	19 d	Sun 29/9/24	Thu 17/10/24			
22	1.2.2.2.1	Sub-base	5 d	Sun 29/9/24	Thu 3/10/24	19	23	3/10
23	1.2.2.2.2	Granite Paving with Kerb	14 d	Fri 4/10/24	Thu 17/10/24	22		17/10
24	1.2.2.3	Slope Way btw Fitness Lawn and Event Deck	35 d	Tue 17/9/24	Mon 21/10/24			
25	1.2.2.3.1	Formation	3 d	Tue 17/9/24	Thu 19/9/24	14,35	26	19/9
26	1.2.2.3.2	Sub-base	3 d	Fri 20/9/24	Sun 22/9/24	19SS,25	28	22/9
27	1.2.2.3.3	Granite Paving with Kerb	12 d	Mon 30/9/24	Fri 11/10/24	28	30SS+6 d	11/10
28	1.2.2.3.4	Footing for Handrail	7 d	Mon 23/9/24	Sun 29/9/24	26	27,29	29/9
29	1.2.2.3.5	Handrail Installation	3 d	Mon 30/9/24	Wed 2/10/24	28		2/10
30	1.2.2.3.6	13 nos. of bollard installation	16 d	Sun 6/10/24	Mon 21/10/24	27SS+6 d		21/10
31	1.2.2.4	Event Deck (no. 1)	46 d	Wed 28/8/24	Sat 12/10/24			
32	1.2.2.4.1	Formation	2 d	Wed 28/8/24	Thu 29/8/24	6	33	29/8
33	1.2.2.4.2	Blinding concrete	1 d	Fri 30/8/24	Fri 30/8/24	32	34	30/8
34	1.2.2.4.3	Base RC Structure	5 d	Sat 31/8/24	Wed 4/9/24	33	35	4/9
35	1.2.2.4.4	Wall RC Structure	12 d	Thu 5/9/24	Mon 16/9/24	34	36,25,41	16/9
36	1.2.2.4.5	Backfilling	7 d	Tue 17/9/24	Mon 23/9/24	35	37,39FS+3 d	23/9
37	1.2.2.4.6	Sub-base	3 d	Tue 24/9/24	Thu 26/9/24	36	38FS+2 d	26/9
38	1.2.2.4.7	50mm Granite Stone Paving	12 d	Sun 29/9/24	Thu 10/10/24	37FS+2 d		10/10
39	1.2.2.4.8	Glass Balustrade Installation	16 d	Fri 27/9/24	Sat 12/10/24	36FS+3 d		12/10
40	1.2.2.5	Rain Garden	31 d	Tue 17/9/24	Thu 17/10/24			
41	1.2.2.5.1	Excavation & Formation	3 d	Tue 17/9/24	Thu 19/9/24	35	46,42	19/9
42	1.2.2.5.2	Aggregate Filling	4 d	Fri 20/9/24	Mon 23/9/24	41	43	23/9
43	1.2.2.5.3	Coarse Sand Installation	4 d	Tue 24/9/24	Fri 27/9/24	42	44	27/9
44	1.2.2.5.4	Soil Mix Filling	8 d	Sat 28/9/24	Sat 5/10/24	43	45	5/10
45	1.2.2.5.5	Planting	10 d	Sun 6/10/24	Tue 15/10/24	44		15/10
46	1.2.2.5.6	Honed Concrete Seating (S2)	21 d	Fri 20/9/24	Thu 10/10/24	41	48SS+5 d,47SS+4 d	10/10
47	1.2.2.5.7	U-channel	14 d	Tue 24/9/24	Mon 7/10/24	46SS+4 d		7/10
48	1.2.2.5.8	Kerb Installation	12 d	Wed 25/9/24	Sun 6/10/24	46SS+5 d	49SS+2 d	6/10
49	1.2.2.5.9	Granite Paving path	21 d	Fri 27/9/24	Thu 17/10/24	48SS+2 d	77SS	17/10
50	1.2.2.6	walkway construction	58 d	Fri 23/8/24	Sat 19/10/24			
51	1.2.2.6.1	stainless steel channel for glass balstrade installation	13 d	Fri 23/8/24	Wed 4/9/24		73SS,52	4/9
52	1.2.2.6.2	Formation & Sub-base (Concrete)	16 d	Thu 5/9/24	Fri 20/9/24	51	53,228	20/9
53	1.2.2.6.3	glass balstrade installation (include E&M)	21 d	Sat 21/9/24	Fri 11/10/24	52	54SS+5 d	11/10
54	1.2.2.6.4	Porcelain Tile Paving	24 d	Thu 26/9/24	Sat 19/10/24	53SS+5 d		19/10
55	1.2.2.7	Rain Shelters (3 nos) & Bike Parking	40 d	Thu 12/9/24	Mon 21/10/24			



Acceleration Programme Rev 16C

Task		Summary		Start-only		Critical		Progress	
Milestone		Project Summary		Finish-only		Critical Split		Manual Progress	



ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	Gantt Chart	
111	1.2.4.2.2.1	Floor tile & wall tile at refuse chamber	14 d	Tue 1/10/24	Mon 14/10/24	112	115	14/10	
112	1.2.4.2.2.1	install re-order door at refuse chamber	5 d	Thu 26/9/24	Mon 30/9/24		111	30/9	
113	1.2.4.2.2.1	install roller shutter	5 d	Fri 13/9/24	Tue 17/9/24		114	17/9	
114	1.2.4.2.2.1	floor finish (machinary store room)	7 d	Wed 18/9/24	Tue 24/9/24	113		24/9	
115	1.2.4.2.2.1	Touch Up works	3 d	Tue 15/10/24	Thu 17/10/24	111		17/10	
116	1.2.4.2.2.2	E&M	88 d	Fri 5/7/24	Mon 30/9/24				
117	1.2.4.2.2.2	Electrical works	88 d	Fri 5/7/24	Mon 30/9/24		118SS,119SS,120SS	30/9	
118	1.2.4.2.2.2	MVAC works	88 d	Fri 5/7/24	Mon 30/9/24	117SS		30/9	
119	1.2.4.2.2.2	Fire service works	88 d	Fri 5/7/24	Mon 30/9/24	117SS		30/9	
120	1.2.4.2.2.2	plumbing and drainage works	88 d	Fri 5/7/24	Mon 30/9/24	117SS		30/9	
121	1.2.4.3	Kiosk	78 d	Sat 20/7/24	Sat 5/10/24				
122	1.2.4.3.1	Construction after drainage works beside complete	45 d	Sat 20/7/24	Mon 2/9/24			2/9	
123	1.2.4.3.2	install door & door frame	3 d	Mon 16/9/24	Wed 18/9/24		124	18/9	
124	1.2.4.3.3	floor screeding	3 d	Mon 23/9/24	Wed 25/9/24	123	126	25/9	
125	1.2.4.3.4	floor paint	3 d	Thu 3/10/24	Sat 5/10/24	126		5/10	
126	1.2.4.3.5	wall finish	7 d	Thu 26/9/24	Wed 2/10/24	124	125	2/10	
127	1.2.5	FS Inspection of POS	14 d	Wed 25/9/24	Tue 8/10/24				
128	1.2.5.1	Form 501 submission	0 d	Wed 25/9/24	Wed 25/9/24		129	25/9	
129	1.2.5.2	Review document by FS department (assume 10 days)	14 d	Wed 25/9/24	Tue 8/10/24	128	130	8/10	
130	1.2.5.3	actual FS inspection	0 d	Tue 8/10/24	Tue 8/10/24	129		8/10	
131	1.3	Area no.2	107 d	Thu 8/8/24	Fri 22/11/24				
132	1.3.1	EVA	98 d	Fri 9/8/24	Thu 14/11/24				
133	1.3.1.1	EVA no. 2 (obstruct by observation deck)	73 d	Tue 3/9/24	Thu 14/11/24				
134	1.3.1.1.1	Duct and drawpits of this section of EVA	14 d	Tue 3/9/24	Mon 16/9/24		135	16/9	
135	1.3.1.1.2	U-channel Construction and the drinking fountain installation	10 d	Tue 17/9/24	Thu 26/9/24	134	136	26/9	
136	1.3.1.1.3	Formation of the EVA	4 d	Fri 27/9/24	Mon 30/9/24	135	137	30/9	
137	1.3.1.1.4	Sub-base laying	3 d	Tue 1/10/24	Thu 3/10/24	136	138	3/10	
138	1.3.1.1.5	Road Base	2 d	Fri 4/10/24	Sat 5/10/24	137	139,150	5/10	
139	1.3.1.1.6	Paving Blocks Construction	14 d	Sun 6/10/24	Sat 19/10/24	138	140SS+10 d,142	19/10	
140	1.3.1.1.7	6 nos. lighting poles installation	12 d	Wed 16/10/24	Sun 27/10/24	139SS+10 d		27/10	
141	1.3.1.1.8	matching cover installation to drawpits (assume matching cover deliver to site mid Oct)	16 d	Wed 30/10/24	Thu 14/11/24			14/11	
142	1.3.1.1.9	irrigation; drinking fountain and cleansing pipes installation	8 d	Sun 20/10/24	Sun 27/10/24	139		27/10	
143	1.3.1.2	EVA no.2 (beside toilet cum)	98 d	Fri 9/8/24	Thu 14/11/24				
144	1.3.1.2.1	Duct and drawpits beside toilet cum	9 d	Fri 9/8/24	Sat 17/8/24		147	17/8	
145	1.3.1.2.2	Firemain Laying	8 d	Wed 14/8/24	Wed 21/8/24			21/8	
146	1.3.1.2.3	Sewer Pipe Installation (Crossing EVA)	10 d	Wed 14/8/24	Fri 23/8/24		147	23/8	
147	1.3.1.2.4	Formation of the EVA	7 d	Sat 24/8/24	Fri 30/8/24	144,146	148	30/8	
148	1.3.1.2.5	Subbase laying	3 d	Sat 31/8/24	Mon 2/9/24	147	149	2/9	
149	1.3.1.2.6	Road Base	2 d	Tue 3/9/24	Wed 4/9/24	148	151FS+18 d	4/9	
150	1.3.1.2.7	paving blocks construction (after road base of EVA no. 2 obstruct by C)	10 d	Sun 6/10/24	Tue 15/10/24	138	152SS+7 d,153	15/10	
151	1.3.1.2.8	U-channel construction	10 d	Mon 23/9/24	Wed 2/10/24	149FS+18 d		2/10	
152	1.3.1.2.9	6 nos. of lighting installation	10 d	Sun 13/10/24	Tue 22/10/24	150SS+7 d		22/10	
153	1.3.1.2.10	irrigation; drinking fountain and cleansing pipes installation	7 d	Wed 16/10/24	Tue 22/10/24	150		22/10	
154	1.3.1.2.11	matching cover installation to drawpits (assume matching cover deliver to site mid Oct)	16 d	Wed 30/10/24	Thu 14/11/24			14/11	
155	1.3.1.3	EVA no. 2 (from toilet cum to the current entrance)	79 d	Wed 28/8/24	Thu 14/11/24				
156	1.3.1.3.1	Duct and drawpits	8 d	Wed 28/8/24	Wed 4/9/24		157SS	4/9	
157	1.3.1.3.2	fire main installation	10 d	Wed 28/8/24	Fri 6/9/24	156SS	158FS-3 d	6/9	
158	1.3.1.3.3	u-channel construction	9 d	Wed 4/9/24	Thu 12/9/24	157FS-3 d	159	12/9	
159	1.3.1.3.4	formation of the EVA	12 d	Fri 13/9/24	Tue 24/9/24	158	160	24/9	
160	1.3.1.3.5	subbase laying	6 d	Wed 25/9/24	Mon 30/9/24	159	161	30/9	
161	1.3.1.3.6	Road Base	4 d	Tue 1/10/24	Fri 4/10/24	160	162	4/10	
162	1.3.1.3.7	paving blocks construction	14 d	Sat 5/10/24	Fri 18/10/24	161	163SS+8 d,164	18/10	
163	1.3.1.3.8	6 Nos. lighting and bollard installation	14 d	Sun 13/10/24	Sat 26/10/24	162SS+8 d		26/10	
164	1.3.1.3.9	irrigation; drinking fountain and cleansing pipes installation	8 d	Sat 19/10/24	Sat 26/10/24	162		26/10	

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Task Summary Start-only Critical Progress

Milestone Project Summary Finish-only Critical Split Manual Progress

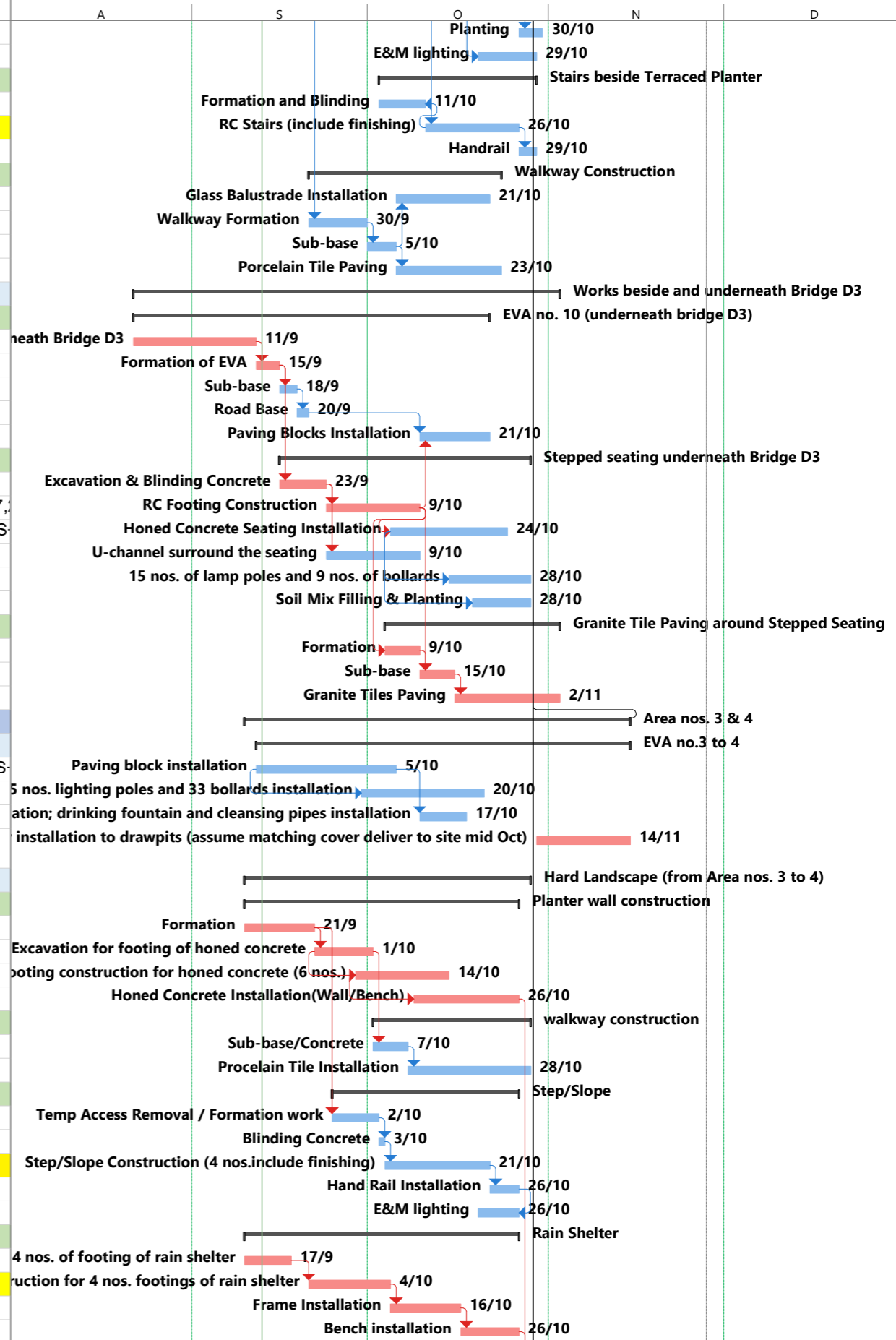
ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	
165	1.3.1.3.10	matching cover installation to drawpits (assume matching cover deliver to site mid Oct)	16 d	Wed 30/10/24	Thu 14/11/24			installation to drawpits (assume matching cover deliver to site mid Oct) 14/11
166	1.3.2	Toilet Cum	107 d	Thu 8/8/24	Fri 22/11/24			Toilet Cum
167	1.3.2.1	Ground Floor	107 d	Thu 8/8/24	Fri 22/11/24			Ground Floor
168	1.3.2.1.1	ABWF	71 d	Fri 13/9/24	Fri 22/11/24			ABWF
169	1.3.2.1.1.1	install roller shutter	7 d	Fri 13/9/24	Thu 19/9/24		171	install roller shutter 19/9
170	1.3.2.1.1.2	wall compact board installation	14 d	Thu 19/9/24	Wed 2/10/24			wall compact board installation 2/10
171	1.3.2.1.1.3	paint on baffle ceiling frame	10 d	Fri 20/9/24	Sun 29/9/24	169		paint on baffle ceiling frame 29/9
172	1.3.2.1.1.4	baffle ceiling setting out for E&M work	2 d	Mon 7/10/24	Tue 8/10/24		182	baffle ceiling setting out for E&M work 8/10
173	1.3.2.1.1.5	baffle ceiling installation after E&M completion	12 d	Fri 8/11/24	Tue 19/11/24	182	174SS+7 d,175SS+	baffle ceiling installation after E&M completion 19/11
174	1.3.2.1.1.6	toilet cubicle installation	8 d	Fri 15/11/24	Fri 22/11/24	173SS+7 d		toilet cubicle installation 22/11
175	1.3.2.1.1.7	sanitary fitment installation	12 d	Mon 11/11/24	Fri 22/11/24	173SS+3 d		sanitary fitment installation 22/11
176	1.3.2.1.1.8	furnitue(locker, bench)	14 d	Mon 14/10/24	Sun 27/10/24			furnitue(locker, bench) 27/10
177	1.3.2.1.2	E&M	92 d	Thu 8/8/24	Thu 7/11/24			E&M
178	1.3.2.1.2.1	MVAC works	47 d	Thu 8/8/24	Mon 23/9/24			works 23/9
179	1.3.2.1.2.2	Electrical works	47 d	Thu 8/8/24	Mon 23/9/24			works 23/9
180	1.3.2.1.2.3	Fire service works	35 d	Tue 20/8/24	Mon 23/9/24			service works 23/9
181	1.3.2.1.2.4	Plumbing and drainage works	47 d	Thu 8/8/24	Mon 23/9/24			works 23/9
182	1.3.2.1.2.5	reinstatement after baffle ceiling setting out	30 d	Wed 9/10/24	Thu 7/11/24	172	173	reinstatement after baffle ceiling setting out 7/11
183	1.3.2.2	External works	30 d	Tue 10/9/24	Wed 9/10/24			External works
184	1.3.2.2.1	Apply skimcoat	7 d	Tue 10/9/24	Mon 16/9/24		185	Apply skimcoat 16/9
185	1.3.2.2.2	Apply SKK paint	12 d	Tue 17/9/24	Sat 28/9/24	184	186SS+7 d	Apply SKK paint 28/9
186	1.3.2.2.3	Installation of vertical fins	16 d	Tue 24/9/24	Wed 9/10/24	185SS+7 d		Installation of vertical fins 9/10
187	1.3.3	Hard Landscape & soft landscape	73 d	Fri 23/8/24	Sun 3/11/24			Hard Landscape & soft landscape
188	1.3.3.1	Amphitheatre	43 d	Tue 10/9/24	Tue 22/10/24			Amphitheatre
189	1.3.3.1.1	Water Treatment Plant Removal	3 d	Tue 10/9/24	Thu 12/9/24		190	Water Treatment Plant Removal 12/9
190	1.3.3.1.2	Excavation and Formation	8 d	Fri 13/9/24	Fri 20/9/24	189	191	Excavation and Formation 20/9
191	1.3.3.1.3	Sub-soil Drain Installation	8 d	Sat 21/9/24	Sat 28/9/24	190	192	Sub-soil Drain Installation 28/9
192	1.3.3.1.4	Soil Mix Filling	12 d	Sun 29/9/24	Thu 10/10/24	191	193,194SS	Soil Mix Filling 10/10
193	1.3.3.1.5	Planting	12 d	Fri 11/10/24	Tue 22/10/24	192		Planting 22/10
194	1.3.3.1.6	granite paving around the amphitheatre	14 d	Sun 29/9/24	Sat 12/10/24	192SS		granite paving around the amphitheatre 12/10
195	1.3.3.2	Amphitheatre Seating (Honed Concrete)	35 d	Tue 24/9/24	Mon 28/10/24			Amphitheatre Seating (Honed Concrete)
196	1.3.3.2.1	Formation and Blinding Concrete	4 d	Tue 24/9/24	Fri 27/9/24		197,201SS,206SS	Formation and Blinding Concrete 27/9
197	1.3.3.2.2	RC Footing	14 d	Sat 28/9/24	Fri 11/10/24	196	198FS-7 d,202	RC Footing 11/10
198	1.3.3.2.3	Honed Concrete Seating	20 d	Sat 5/10/24	Thu 24/10/24	197FS-7 d	199	Honed Concrete Seating 24/10
199	1.3.3.2.4	Round Side Tables	4 d	Fri 25/10/24	Mon 28/10/24	198		Round Side Tables 28/10
200	1.3.3.3	Stairs beside Amphitheatre Seating	41 d	Tue 24/9/24	Sun 3/11/24			Stairs beside Amphitheatre Seating
201	1.3.3.3.1	Formation and Blinding Concrete	4 d	Tue 24/9/24	Fri 27/9/24	196SS		Formation and Blinding Concrete 27/9
202	1.3.3.3.2	RC Stair Structures (include finishes)	14 d	Sat 12/10/24	Fri 25/10/24	197	203	RC Stair Structures (include finishes) 25/10
203	1.3.3.3.3	Handrail installation	4 d	Sat 26/10/24	Tue 29/10/24	202	204	Handrail installation 29/10
204	1.3.3.3.4	E&M lighting	5 d	Wed 30/10/24	Sun 3/11/24	203		E&M lighting 3/11
205	1.3.3.4	Lawn beside toilet cum	28 d	Tue 24/9/24	Mon 21/10/24			Lawn beside toilet cum
206	1.3.3.4.1	duct and drawpits	12 d	Tue 24/9/24	Sat 5/10/24	196SS	207	duct and drawpits 5/10
207	1.3.3.4.2	soil mixing and planting	16 d	Sun 6/10/24	Mon 21/10/24	206	208SS	soil mixing and planting 21/10
208	1.3.3.4.3	granite paving beside the lawn	16 d	Sun 6/10/24	Mon 21/10/24	207SS		granite paving beside the lawn 21/10
209	1.3.3.5	Event Deck No. 2	18 d	Fri 23/8/24	Mon 9/9/24			Event Deck No. 2
210	1.3.3.5.1	Sub-base	3 d	Fri 23/8/24	Sun 25/8/24		213,212	Sub-base 25/8
211	1.3.3.5.2	Granite Stone Paving	5 d	Thu 5/9/24	Mon 9/9/24	214,212		Granite Stone Paving 9/9
212	1.3.3.5.3	Glass Barustrade	10 d	Mon 26/8/24	Wed 4/9/24	210	211	Glass Barustrade 4/9
213	1.3.3.5.4	RC Foundation of Long Table Sets	3 d	Mon 26/8/24	Wed 28/8/24	210	214	RC Foundation of Long Table Sets 28/8
214	1.3.3.5.5	Long Table Sets	7 d	Thu 29/8/24	Wed 4/9/24	213	211	Long Table Sets 4/9
215	1.3.3.6	Terraced Planter	44 d	Tue 17/9/24	Wed 30/10/24			Terraced Planter
216	1.3.3.6.1	Blinding	10 d	Tue 17/9/24	Thu 26/9/24		217	Blinding 26/9
217	1.3.3.6.2	RC Footing	14 d	Fri 27/9/24	Thu 10/10/24	216	218FS-5 d,224	RC Footing 10/10
218	1.3.3.6.3	Honed Concrete Planter	18 d	Sun 6/10/24	Wed 23/10/24	217FS-5 d	219,221FS-4 d	Honed Concrete Planter 23/10
219	1.3.3.6.4	Soil Mix Filling	3 d	Thu 24/10/24	Sat 26/10/24	218	220	Soil Mix Filling 26/10

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Task █ Summary Start-only Critical █ Progress █

Milestone ◆ Project Summary Finish-only Critical Split Manual Progress █

ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	A		S	O	N	D
220	1.3.3.6.5	Planting	4 d	Sun 27/10/24	Wed 30/10/24	219							
221	1.3.3.6.6	E&M lighting	10 d	Sun 20/10/24	Tue 29/10/24	218FS-4 d							
222	1.3.3.7	Stairs beside Terraced Planter	27 d	Thu 3/10/24	Tue 29/10/24								
223	1.3.3.7.1	Formation and Blinding	8 d	Thu 3/10/24	Fri 11/10/24	224SF							
224	1.3.3.7.2	RC Stairs (include finishing)	16 d	Fri 11/10/24	Sat 26/10/24	217	223SF,225						
225	1.3.3.7.3	Handrail	3 d	Sun 27/10/24	Tue 29/10/24	224							
226	1.3.3.8	Walkway Construction	33 d	Sat 21/9/24	Ned 23/10/24								
227	1.3.3.8.1	Glass Balustrade Installation	16 d	Sun 6/10/24	Mon 21/10/24	229							
228	1.3.3.8.2	Walkway Formation	10 d	Sat 21/9/24	Mon 30/9/24	52	229						
229	1.3.3.8.3	Sub-base	5 d	Tue 1/10/24	Sat 5/10/24	228	227,230						
230	1.3.3.8.4	Porcelain Tile Paving	18 d	Sun 6/10/24	Ned 23/10/24	229							
231	1.3.4	Works beside and underneath Bridge D3	73 d	Thu 22/8/24	Sat 2/11/24								
232	1.3.4.1	EVA no. 10 (underneath bridge D3)	61 d	Thu 22/8/24	Mon 21/10/24								
233	1.3.4.1.1	Duct and drawpits underneath Bridge D3	21 d	Thu 22/8/24	Wed 11/9/24		234						
234	1.3.4.1.2	Formation of EVA	4 d	Thu 12/9/24	Sun 15/9/24	233	235,239						
235	1.3.4.1.3	Sub-base	3 d	Mon 16/9/24	Wed 18/9/24	234	236						
236	1.3.4.1.4	Road Base	2 d	Thu 19/9/24	Fri 20/9/24	235	237						
237	1.3.4.1.5	Paving Blocks Installation	12 d	Thu 10/10/24	Mon 21/10/24	236,240							
238	1.3.4.2	Stepped seating underneath Bridge D3	43 d	Mon 16/9/24	Mon 28/10/24								
239	1.3.4.2.1	Excavation & Blinding Concrete	8 d	Mon 16/9/24	Mon 23/9/24	234	240,242						
240	1.3.4.2.2	RC Footing Construction	16 d	Tue 24/9/24	Wed 9/10/24	239	237,241FS-5 d,247,						
241	1.3.4.2.3	Honed Concrete Seating Installation	20 d	Sat 5/10/24	Thu 24/10/24	240FS-5 d	244SS+14 d,243SS-						
242	1.3.4.2.4	U-channel surround the seating	16 d	Tue 24/9/24	Wed 9/10/24	239							
243	1.3.4.2.5	15 nos. of lamp poles and 9 nos. of bollards	14 d	Tue 15/10/24	Mon 28/10/24	241SS+10 d							
244	1.3.4.2.6	Soil Mix Filling & Planting	10 d	Sat 19/10/24	Mon 28/10/24	241SS+14 d							
245	1.3.4.3	Granite Tile Paving around Stepped Seating	30 d	Fri 4/10/24	Sat 2/11/24								
246	1.3.4.3.1	Formation	6 d	Fri 4/10/24	Wed 9/10/24	240FS-6 d	247						
247	1.3.4.3.2	Sub-base	6 d	Thu 10/10/24	Tue 15/10/24	240,246	248						
248	1.3.4.3.3	Granite Tiles Paving	18 d	Ned 16/10/24	Sat 2/11/24	247							
249	1.4	Area nos. 3 & 4	66 d	Tue 10/9/24	Thu 14/11/24		2						
250	1.4.1	EVA no.3 to 4	64 d	Thu 12/9/24	Thu 14/11/24								
251	1.4.1.1	Paving block installation	24 d	Thu 12/9/24	Sat 5/10/24		252SS+18 d,253FS-						
252	1.4.1.2	25 nos. lighting poles and 33 bollards installation	21 d	Mon 30/9/24	Sun 20/10/24	251SS+18 d							
253	1.4.1.3	irrigation; drinking fountain and cleansing pipes installation	8 d	Thu 10/10/24	Thu 17/10/24	251FS+4 d							
254	1.4.1.4	matching cover installation to drawpits (assume matching cover deliver to site mid Oct)	16 d	Wed 30/10/24	Thu 14/11/24								
255	1.4.2	Hard Landscape (from Area nos. 3 to 4)	49 d	Tue 10/9/24	Mon 28/10/24								
256	1.4.2.1	Planter wall construction	47 d	Tue 10/9/24	Sat 26/10/24								
257	1.4.2.1.1	Formation	12 d	Tue 10/9/24	Sat 21/9/24		258,265FS+3 d						
258	1.4.2.1.2	Excavation for footing of honed concrete	10 d	Sun 22/9/24	Tue 1/10/24	257	259SS+7 d,262						
259	1.4.2.1.3	Footing construction for honed concrete (6 nos.)	16 d	Sun 29/9/24	Mon 14/10/24	258SS+7 d	260SS+10 d						
260	1.4.2.1.4	Honed Concrete Installation(Wall/Bench)	18 d	Wed 9/10/24	Sat 26/10/24	259SS+10 d	276						
261	1.4.2.2	walkway construction	27 d	Wed 2/10/24	Mon 28/10/24								
262	1.4.2.2.1	Sub-base/Concrete	6 d	Wed 2/10/24	Mon 7/10/24	258	263						
263	1.4.2.2.2	Procelain Tile Installation	21 d	Tue 8/10/24	Mon 28/10/24	262							
264	1.4.2.3	Step/Slope	32 d	Wed 25/9/24	Sat 26/10/24								
265	1.4.2.3.1	Temp Access Removal / Formation work	8 d	Wed 25/9/24	Wed 2/10/24	257FS+3 d	266						
266	1.4.2.3.2	Blinding Concrete	1 d	Thu 3/10/24	Thu 3/10/24	265	267						
267	1.4.2.3.3	Step/Slope Construction (4 nos.include finishing)	18 d	Fri 4/10/24	Mon 21/10/24	266	268						
268	1.4.2.3.4	Hand Rail Installation	5 d	Tue 22/10/24	Sat 26/10/24	267	269FF						
269	1.4.2.3.5	E&M lighting	7 d	Sun 20/10/24	Sat 26/10/24	268FF							
270	1.4.2.4	Rain Shelter	47 d	Tue 10/9/24	Sat 26/10/24								
271	1.4.2.4.1	Excavation for 4 nos. of footing of rain shelter	8 d	Tue 10/9/24	Tue 17/9/24		272FS+3 d						
272	1.4.2.4.2	Construction for 4 nos. footings of rain shelter	14 d	Sat 21/9/24	Fri 4/10/24	271FS+3 d	273						
273	1.4.2.4.3	Frame Installation	12 d	Sat 5/10/24	Ned 16/10/24	272	274						
274	1.4.2.4.4	Bench installation	10 d	Thu 17/10/24	Sat 26/10/24	273	277						



Acceleration Programme Rev 16C

Task █ Summary Start-only Critical █ Progress

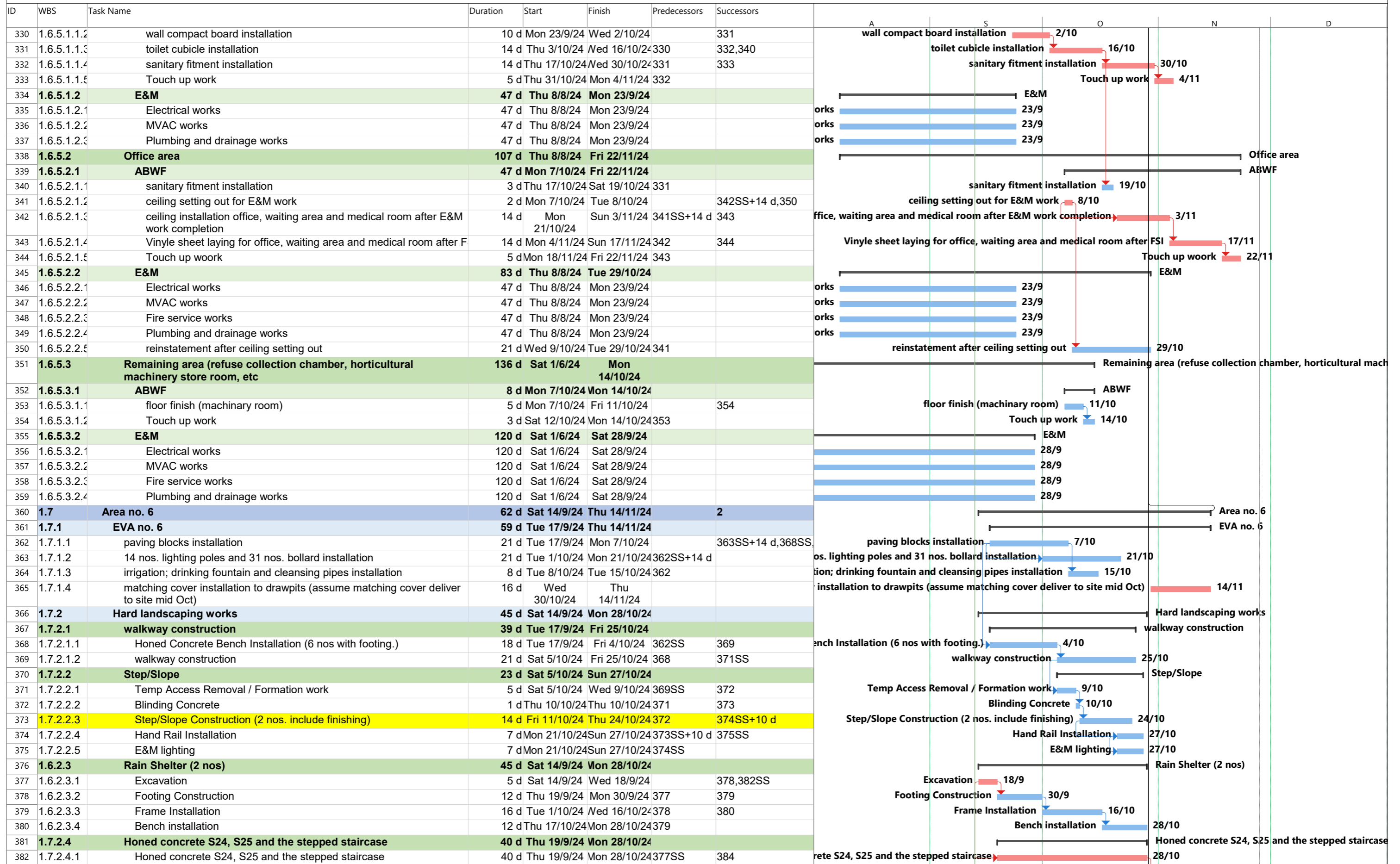
Milestone ◆ Project Summary Finish-only Critical Split █ Manual Progress

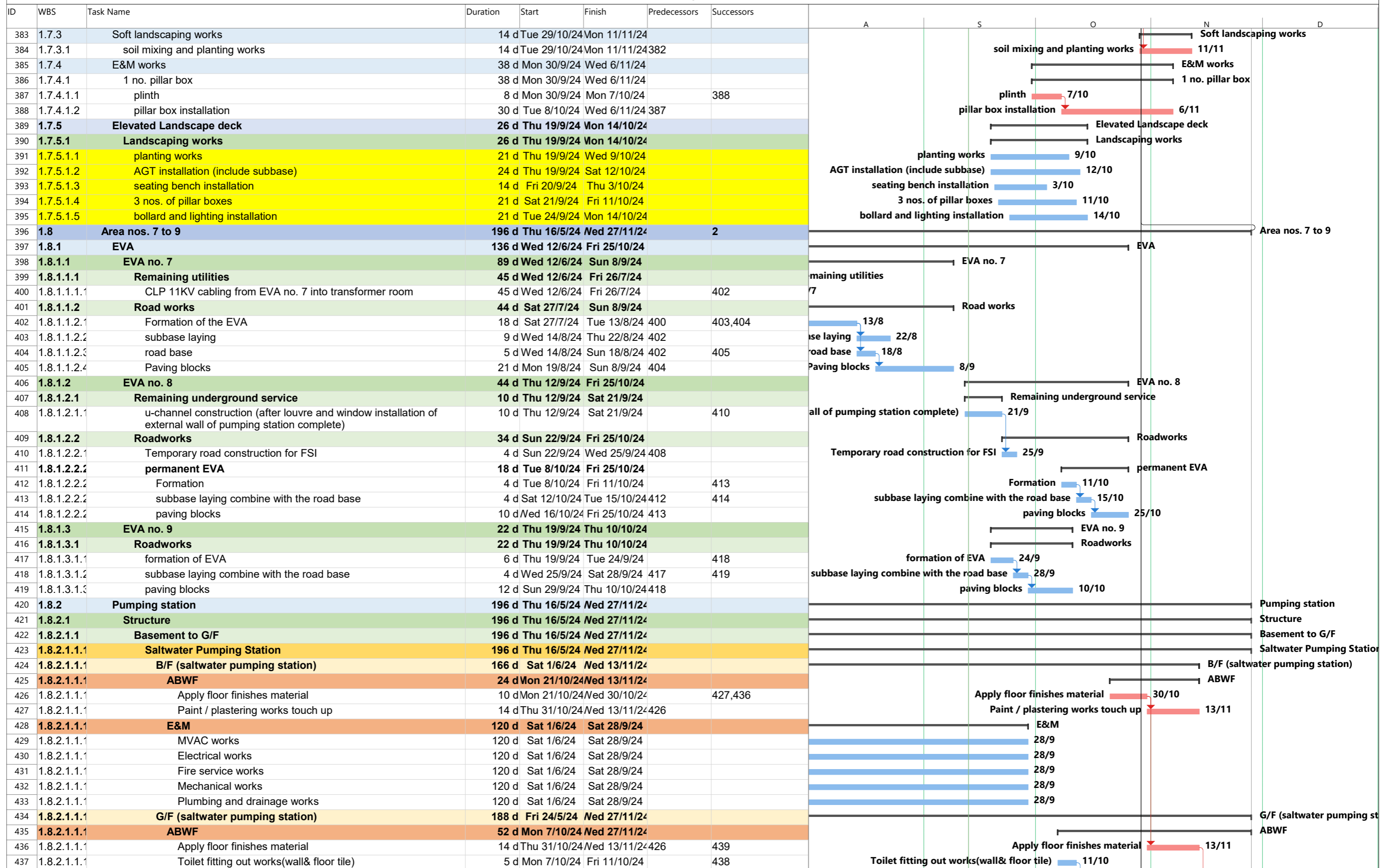
ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	Gantt Chart				
								A	S	O	N	D
275	1.4.3	Soft landscaping works	14 d	Sun 27/10/24	Sat 9/11/24			Soft landscaping works				
276	1.4.3.1	soil mixing and planting works (river side)	14 d	Sun 27/10/24	Sat 9/11/24	260		soil mixing and planting works (river side) 9/11				
277	1.4.3.2	soil mixing and planting works (beside NDR)	14 d	Sun 27/10/24	Sat 9/11/24	274		soil mixing and planting works (beside NDR) 9/11				
278	1.4.4	E&M works	38 d	Mon 30/9/24	Wed 6/11/24			E&M works				
279	1.4.4.1	4 nos. of pillar boxes	38 d	Mon 30/9/24	Wed 6/11/24			4 nos. of pillar boxes				
280	1.4.4.1.1	plinths	8 d	Mon 30/9/24	Mon 7/10/24		281	plinths 7/10				
281	1.4.4.1.2	pillar box installation	30 d	Tue 8/10/24	Wed 6/11/24	280		pillar box installation 6/11				
282	1.5	Area no. 4 to 5 (between NDR and Underpass)	36 d	Tue 15/10/24	Tue 19/11/24		2	Area no. 4 to 5 (between NDR and Underpass)				
283	1.5.1	1st half of EVA and soft landscaping works	18 d	Tue 15/10/24	Fri 1/11/24			1st half of EVA and soft landscaping works				
284	1.5.1.1	EVA construction	18 d	Tue 15/10/24	Fri 1/11/24		285SS,287	EVA construction 1/11				
285	1.5.1.2	soft landscaping works	18 d	Tue 15/10/24	Fri 1/11/24	284SS		soft landscaping works 1/11				
286	1.5.2	2nd half of EVA and soft landscaping works	18 d	Sat 2/11/24	Tue 19/11/24			2nd half of EVA and soft landscaping works				
287	1.5.2.1	EVA construction	18 d	Sat 2/11/24	Tue 19/11/24	284	288SS	EVA construction 19/11				
288	1.5.2.2	soft landscaping works	18 d	Sat 2/11/24	Tue 19/11/24	287SS		soft landscaping works 19/11				
289	1.6	Area no. 5	802 d	Thu 1/9/22	Fri 22/11/24		2	Area no. 5				
290	1.6.1	EVA	63 d	Fri 13/9/24	Thu 14/11/24			EVA				
291	5/9/24	paving blocks construction	24 d	Fri 13/9/24	Sun 6/10/24		292SS+20 d,294	paving blocks construction 6/10				
292	1.6.1.2	14 nos. lighting and 35 nos. bollard installation	22 d	Thu 3/10/24	Thu 24/10/24	291SS+20 d		14 nos. lighting and 35 nos. bollard installation 24/10				
293	1.6.1.3	matching cover installation to drawpits (assume matching cover deliver to site mid Oct)	16 d	Wed 30/10/24	Thu 14/11/24			matching cover installation to drawpits (assume matching cover deliver to site mid Oct) 14/11				
294	1.6.1.4	irrigation; drinking fountain and cleansing pipes installation	8 d	Mon 7/10/24	Mon 14/10/24	291		irrigation; drinking fountain and cleansing pipes installation 14/10				
295	1.6.2	Hard landscaping works	57 d	Tue 17/9/24	Tue 12/11/24			Hard landscaping works				
296	1.6.2.1	walkway construction (floating stage)	41 d	Tue 17/9/24	Sun 27/10/24			walkway construction (floating stage)				
297	1.6.2.1.1	formation	8 d	Tue 17/9/24	Tue 24/9/24		298	formation 24/9				
298	1.6.2.1.2	subbase laying	4 d	Wed 25/9/24	Sat 28/9/24	297	299	subbase laying 28/9				
299	1.6.2.1.3	glass balstrade for floating stage installation	21 d	Sun 29/9/24	Sat 19/10/24	298	300SS+8 d	glass balstrade for floating stage installation 19/10				
300	1.6.2.1.4	porcelain Tile paving	21 d	Mon 7/10/24	Sun 27/10/24	299SS+8 d		porcelain Tile paving 27/10				
301	1.6.2.2	Honed concrete DS2 & 3 installation (floating stage)	41 d	Fri 20/9/24	Ned 30/10/24			Honed concrete DS2 & 3 installation (floating stage)				
302	1.6.2.2.1	Excavation of footing for honed concrete DS2 & 3	10 d	Fri 20/9/24	Sun 29/9/24		303,306	Excavation of footing for honed concrete DS2 & 3 29/9				
303	1.6.2.2.2	Footing construction for honed concrete DS2 & 3	14 d	Mon 30/9/24	Sun 13/10/24	302	304SS+10 d	Footing construction for honed concrete DS2 & 3 13/10				
304	1.6.2.2.3	Honed concrete DS2 & 3 installation	21 d	Thu 10/10/24	Ned 30/10/24	303SS+10 d	321	Honed concrete DS2 & 3 installation 30/10				
305	1.6.2.3	Step/Slope	25 d	Mon 30/9/24	Thu 24/10/24			Step/Slope				
306	1.6.2.3.1	Temp Access Removal / Formation work	6 d	Mon 30/9/24	Sat 5/10/24	302	307	Temp Access Removal / Formation work 5/10				
307	1.6.2.3.2	Blinding Concrete	1 d	Sun 6/10/24	Sun 6/10/24	306	308	Blinding Concrete 6/10				
308	1.6.2.3.3	Step/Slope Construction (3 nos. include finishing)	18 d	Mon 7/10/24	Thu 24/10/24	307	309SS+4 d	Step/Slope Construction (3 nos. include finishing) 24/10				
309	1.6.2.3.4	Hand Rail Installation	6 d	Fri 11/10/24	Ned 16/10/24	308SS+4 d	310FF	Hand Rail Installation 16/10				
310	1.6.2.3.5	E&M lighting	6 d	Fri 11/10/24	Ned 16/10/24	309FF		E&M lighting 16/10				
311	1.5.2.3	Rain Shelter (4 nos)	40 d	Thu 19/9/24	Mon 28/10/24			Rain Shelter (4 nos)				
312	1.5.2.3	Excavation	6 d	Thu 19/9/24	Tue 24/9/24		313SS+4 d	Excavation 24/9				
313	1.5.2.3	Footing Construction	12 d	Mon 23/9/24	Fri 4/10/24	312SS+4 d	314	Footing Construction 4/10				
314	1.5.2.3	Frame Installation	12 d	Sat 5/10/24	Ned 16/10/24	313	315	Frame Installation 16/10				
315	1.5.2.3	Bench installation	12 d	Thu 17/10/24	Mon 28/10/24	314		Bench installation 28/10				
316	1.6.2.5	paving blocks beside TMO	20 d	Thu 24/10/24	Tue 12/11/24			paving blocks beside TMO				
317	1.6.2.5.1	paving blocks beside TMO (1st half; 2nd half serve as access)	12 d	Thu 24/10/24	Mon 4/11/24		318FS-4 d,320	paving blocks beside TMO (1st half; 2nd half serve as access) 4/11				
318	1.6.2.5.2	paving blocks beside TMO (2nd half)	12 d	Fri 1/11/24	Tue 12/11/24	317FS-4 d		paving blocks beside TMO (2nd half) 12/11				
319	1.6.3	soft landscaping works	18 d	Thu 31/10/24	Sun 17/11/24			soft landscaping works				
320	1.6.3.1	soil mixing and planting works (beside TMO)	12 d	Tue 5/11/24	Sat 16/11/24	317		soil mixing and planting works (beside TMO) 16/11				
321	1.6.3.2	soil mixing and planting works (beside DS2 & DS3)	18 d	Thu 31/10/24	Sun 17/11/24	304		soil mixing and planting works (beside DS2 & DS3) 17/11				
322	1.6.4	E&M works	38 d	Mon 30/9/24	Wed 6/11/24			E&M works				
323	1.6.4.1	1 no. pillar box	38 d	Mon 30/9/24	Wed 6/11/24			1 no. pillar box				
324	1.6.4.1.1	plinth	8 d	Mon 30/9/24	Mon 7/10/24		325	plinth 7/10				
325	1.6.4.1.2	pillar box installation	30 d	Tue 8/10/24	Wed 6/11/24	324		pillar box installation 6/11				
326	1.6.5	Temporary Management Office	802 d	Thu 1/9/22	Fri 22/11/24			Temporary Management Office				
327	1.6.5.1	Toilet area	784 d	Thu 1/9/22	Mon 4/11/24			Toilet area				
328	1.6.5.1.1	ABWF	784 d	Thu 1/9/22	Mon 4/11/24			ABWF				
329	1.6.5.1.1.1	wall tiles and floor tiles laying	21 d	Thu 1/9/22	Wed 21/9/22			wall tiles and floor tiles laying				

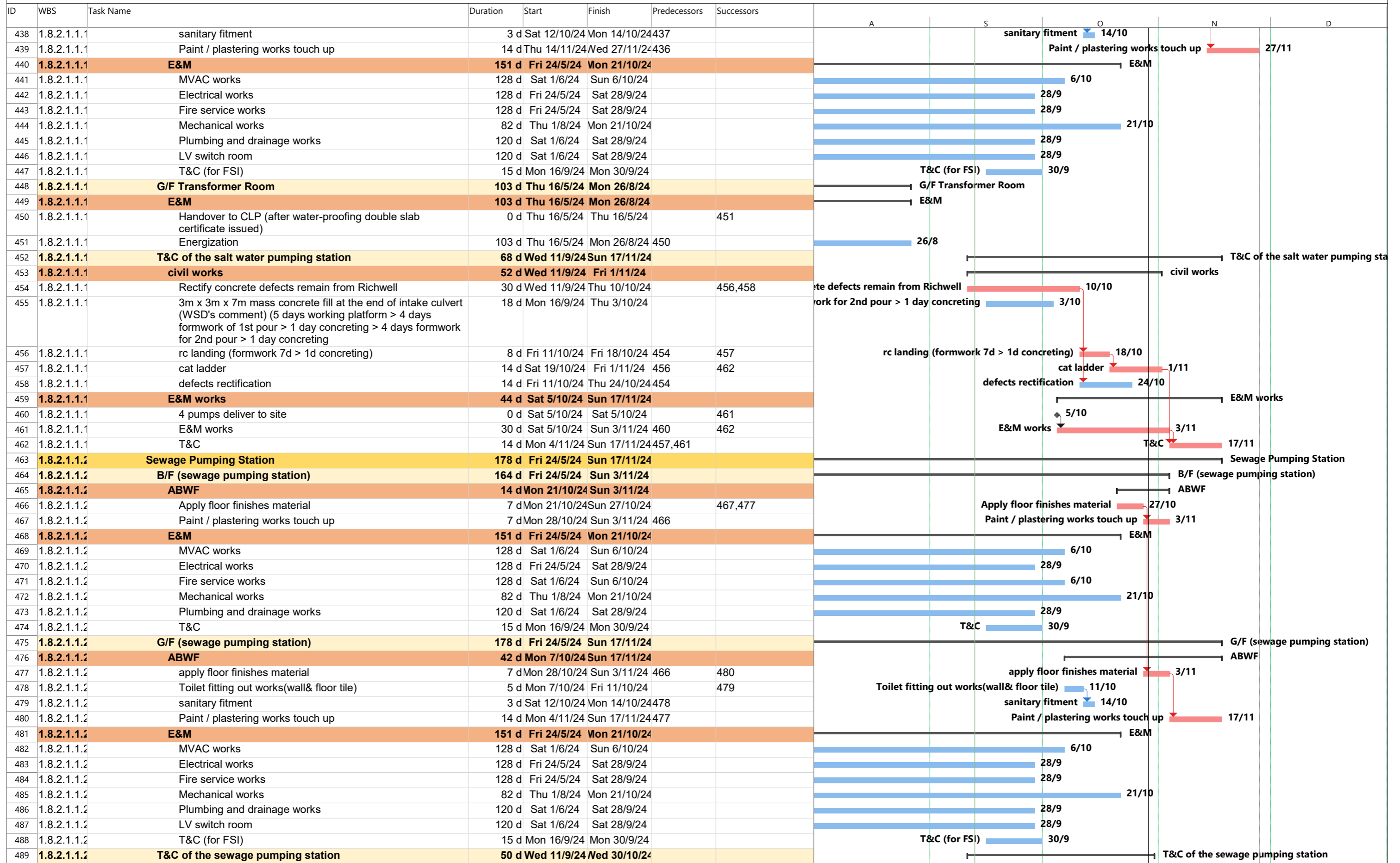
Acceleration Programme Rev 16C

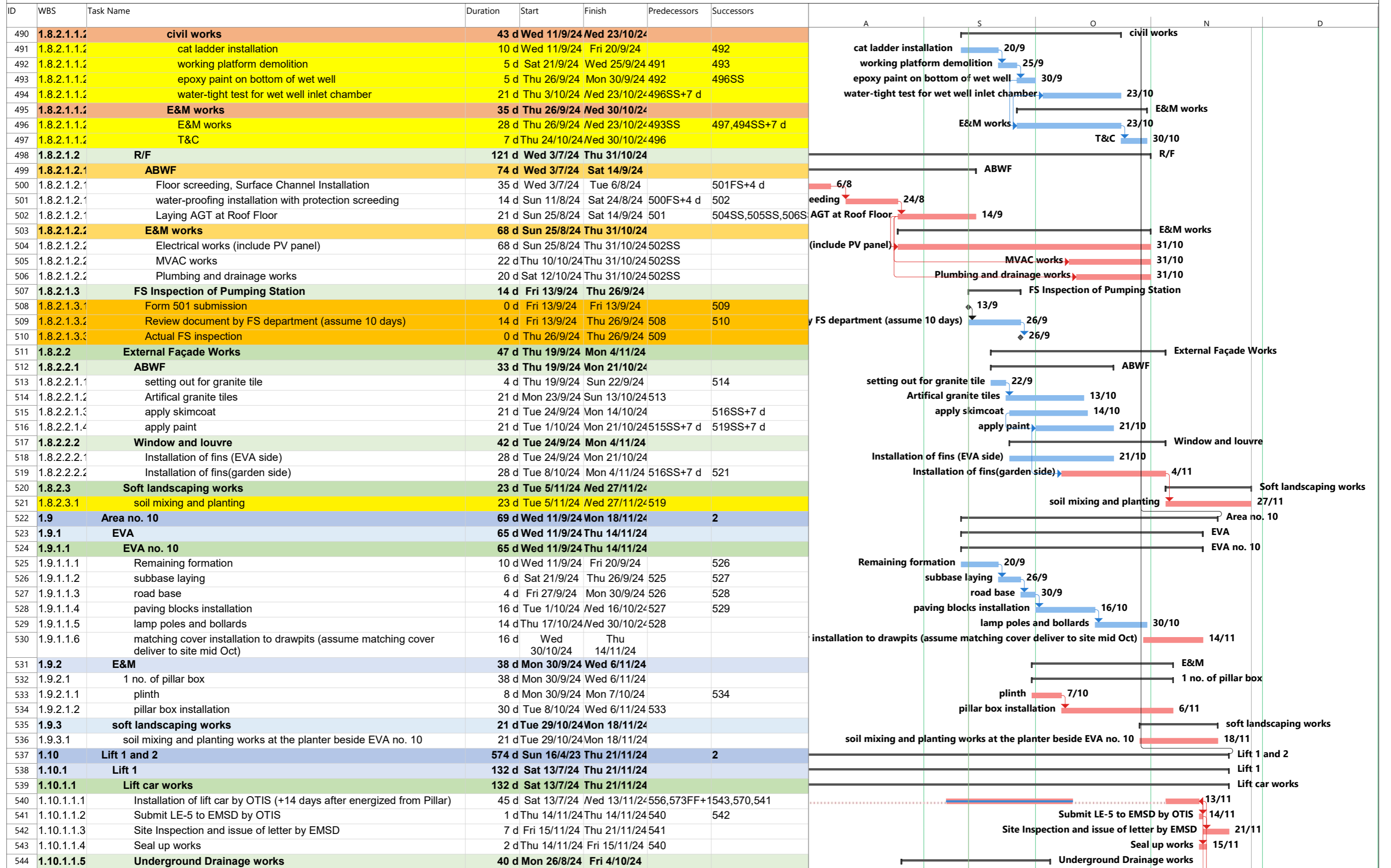
Task █ Summary Start-only Critical █ Progress █

Milestone ◆ Project Summary Finish-only Critical Split Manual Progress █





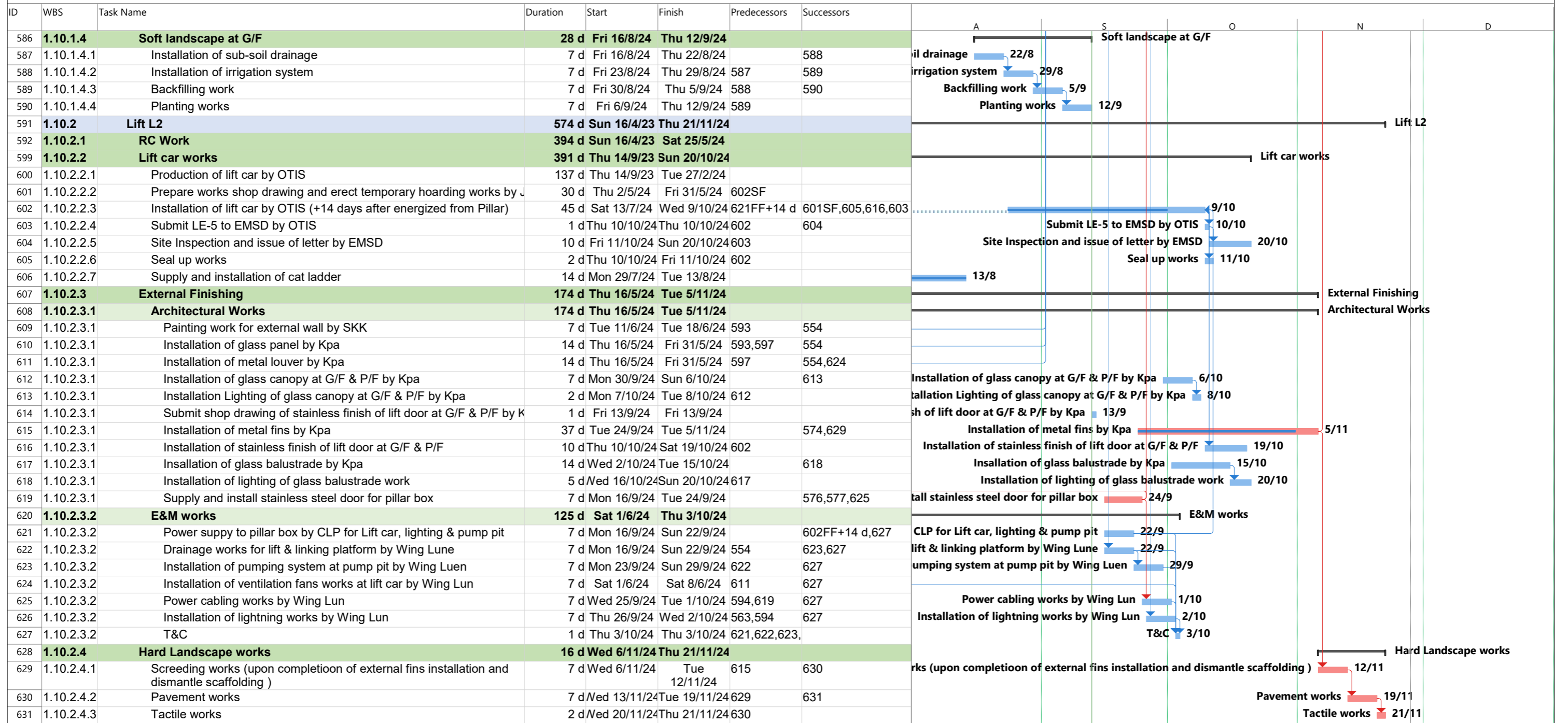




ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	Gantt Chart				
545	1.10.1.1.5	Provide drainage drawings at staircase by Mannings (due to revised pavement level under PMI additional bus stop, refer to email dated 8/8/24 and commence works after completed	1 d	Tue 27/8/24	Tue 27/8/24		570	Completed pavement works) 27/8				
546	1.10.1.1.5	Construct surface channel and manhole at staircase by Yeung Kong	14 d	Mon 16/9/24	Sun 29/9/24		547	manhole at staircase by Yeung Kong 29/9				
547	1.10.1.1.5	Connect drain pipe from sump pit to manhole by Yeung Kong	5 d	Mon 30/9/24	Fri 4/10/24	546	570	pipe from sump pit to manhole by Yeung Kong 4/10				
548	1.10.1.1.5	Provide drainage drawings at pavement between 4E1 and Lift LT1 by Mannings (due to revised pavement level under PMI additional bus stop, refer to email dated 8/8/24 and commence works after completed pavement works)	1 d	Mon 26/8/24	Mon 26/8/24		549					
549	1.10.1.1.5	Carry out drainage works at pavement between 4E1/ Lift LT1 by JHL (upon provided drainage plan)	19 d	Tue 27/8/24	Sun 15/9/24	548		by JHL (not yet issue SIS) 14/9				
550	1.10.1.1.5	Carry out lighting box with cable ducts at pavement between 4E1/ Lift LT1 by JHL (not yet issue SIS)	13 d	Mon 2/9/24	Sat 14/9/24		580					
551	1.10.1.2	External Finishing	113 d	Wed 31/7/24	Ned 20/11/24							External Finishing
552	1.10.1.2.1	Architectural Works	80 d	Mon 2/9/24	Ned 20/11/24							Architectural Works
553	1.10.1.2.1	Installation of glass canopy at G/F & P/F by Kpa	7 d	Mon 23/9/24	Sun 29/9/24			Installation of glass canopy at G/F & P/F by Kpa 29/9				
554	1.10.1.2.1	Installation of metal fins by Kpa (upon completion of pavement work	14 d	Mon 2/9/24	Sun 15/9/24	593,609,610,622		Installation of pavement works) 15/9				
555	1.10.1.2.1	Submit shop drawing of stainless finish of lift door at G/F & P/F by K	1 d	Mon 16/9/24	Mon 16/9/24		556	Installation of lift door at G/F & P/F by Kpa 16/9				
557	1.10.1.2.1	Modification works at r.c. curb of staircase by JHL	3 d	Tue 24/9/24	Thu 26/9/24		558	Modification works at r.c. curb of staircase by JHL 26/9				
558	1.10.1.2.1	Setting out works at as-built holding down bolt for fabrication of curve staircase by Kpa	1 d	Fri 27/9/24	Fri 27/9/24	557	559	Setting out works at as-built holding down bolt for fabrication of curve staircase by Kpa 27/9				
559	1.10.1.2.1	Fabrication of glass balustrade by Kpa	21 d	Sat 28/9/24	Fri 18/10/24	558	560	Fabrication of glass balustrade by Kpa 18/10				
560	1.10.1.2.1	Installation of glass balustrade by Kpa	14 d	Sat 19/10/24	Fri 1/11/24	559	561	Installation of glass balustrade by Kpa 1/11				
561	1.10.1.2.1	Installation of lighting of glass balustrade works by Wing Luen	7 d	Sat 2/11/24	Fri 8/11/24	560		Installation of lighting of glass balustrade works by Wing Luen 8/11				
562	1.10.1.2.1	Modification works at pillar box to match revised pavement level (due to revised pavement level under PMI additional bus stop, refer to email dated 8/8/24 and commence works after completed	18 d	Mon 2/9/24	Thu 19/9/24		563	Completed pavement works) 19/9				
564	1.10.1.2.1	Re-construct Footing of 2 street lighting pillar boxes to match revised pavement level (due to revised pavement level under PMI additional bus stop, refer to email dated 8/8/24 and commence works after completed pavement works)	21 d	Mon 2/9/24	Sun 22/9/24		565	Completed pavement works) 22/9				
565	1.10.1.2.1	Install cover of street lighting pillar box	3 d	Mon 23/9/24	Wed 25/9/24	564	573	Install cover of street lighting pillar box 25/9				
566	1.10.1.2.1	Installation of glass canopy at G/F & P/F by Kpa	7 d	Mon 16/9/24	Sun 22/9/24		567	Installation of glass canopy at G/F & P/F by Kpa 22/9				
567	1.10.1.2.1	Installation Lighting of glass canopy at G/F & P/F by Kpa	2 d	Mon 23/9/24	Tue 24/9/24	566		Lighting of glass canopy at G/F & P/F by Kpa 24/9				
568	1.10.1.2.1	Installation of metal fins by Kpa (Upon completion of pavement work	14 d	Tue 24/9/24	Mon 7/10/24		574	Kpa (Upon completion of pavement works) 7/10				
569	1.10.1.2.1	Submit shop drawings of stainless steel finish lift door by Kpa (issue SIS date 19/8/24)	7 d	Fri 13/9/24	Thu 19/9/24		570	or by Kpa (issue SIS date 19/8/24) 19/9				
570	1.10.1.2.1	Supply & Installation of stainless steel finish of lift door at G/F & P/F	7 d	Thu 14/11/24	Ned 20/11/24	540,545,547,		Supply & Installation of stainless steel finish of lift door at G/F & P/F by Kpa 20/11				
571	1.10.1.2.1	Painting works for Column (Pending ADRG issue drawing and seeking supplier)	3 d	Mon 30/9/24	Wed 2/10/24			Painting works for Column (Pending ADRG issue drawing and seeking supplier) 2/10				
563	1.10.1.2.1	Supply and install stainless steel door for pillar box	5 d	Fri 20/9/24	Wed 25/9/24	562	626	install stainless steel door for pillar box 25/9				
556	1.10.1.2.1	Installation of stainless finish of lift door at G/F & P/F	7 d	Mon 28/10/24	Mon 4/11/24	555	540	Installation of stainless finish of lift door at G/F & P/F 4/11				
572	1.10.1.2.2	E&M works	112 d	Wed 31/7/24	Tue 19/11/24							E&M works
573	1.10.1.2.2	Power supply to pillar box by CLP for Lift car, lighting & pump pit	7 d	Thu 26/9/24	Wed 2/10/24	565	540FF+14 d,579,578	Power supply to pillar box by CLP for Lift car, lighting & pump pit 2/10				
574	1.10.1.2.2	Drainage works for lift & linking platform by Wing Luen	7 d	Wed 6/11/24	Tue 12/11/24	568,615	575,579,578	Drainage works for lift & linking platform by Wing Luen 12/11				
575	1.10.1.2.2	Installation of pumping system at pump pit by Wing Luen	6 d	Ned 13/11/24	Mon 18/11/24	574	579,578	Installation of pumping system at pump pit by Wing Luen 18/11				
576	1.10.1.2.2	Power cabling works by Wing Lun	7 d	Wed 31/7/24	Sat 28/9/24	619	578	Power cabling works by Wing Lun 28/9				
577	1.10.1.2.2	Installation of lightning works by Wing Lun	7 d	Wed 25/9/24	Tue 1/10/24	619	578	Installation of lightning works by Wing Lun 1/10				
578	1.10.1.2.2	T&C	1 d	Tue 19/11/24	Tue 19/11/24	573,574,575,		T&C 19/11				
579	1.10.1.3	Hard Landscape works	69 d	Fri 13/9/24	Ned 20/11/24	573,574,575						Hard Landscape works
580	1.10.1.3.1	Pavement Works between 4E1/ LT1 by On Woo	6 d	Tue 17/9/24	Sun 22/9/24	550						
581	1.10.1.3.2	Revised Staircase drawing by Mannings (due to revised pavement level under PMI additional bus stop, refer to email dated 8/8/24 and commence works after completed pavement works)	1 d	Fri 13/9/24	Fri 13/9/24		582					
582	1.10.1.3.3	Carry out modification works for additional 2 nos. of step at staircase by Yeung Kong(due to revised pavement level under PMI additional bus stop, refer to email dated 8/8/24 and commence works after completed pavement works)	14 d	Sat 14/9/24	Fri 27/9/24	581	583					
583	1.10.1.3.4	Screeding works	7 d	Mon 30/9/24	Sun 6/10/24	582	584					
584	1.10.1.3.5	Pavement works	7 d	Wed 9/10/24	Tue 15/10/24	583	585					
585	1.10.1.3.6	Tactile works	2 d	Tue 19/11/24	Ned 20/11/24	584		Tactile works 20/11				

Acceleration Programme Rev 16C

Task		Summary		Start-only		Critical		Progress	
Milestone		Project Summary		Finish-only		Critical Split		Manual Progress	



Appendix C – Apply permission for Environmental Monitoring

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

Status: Rejected application

Email on: 10 May 2022

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



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

Date 2022-05-10 15:48

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

Company: The Lok Sin Tong Benevolent Society Kowloon

By Email ([Redacted])

Dear Madam
5 May 2022

Dear Sir/ Madam, [Redacted]

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

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

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

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

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

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

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

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

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

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Email on: 13 October 2022

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



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

Date 2022-10-13 15:52

Company: The Lok Sin Tong Benevolent Society Kowloon

By Email [Redacted]

Dear Sir/ [Redacted]

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

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

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

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

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

Email on: 19 July 2022

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



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

Date 2022-07-19 13:33

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

Company: Freder Centre

By Email [Redacted]
Dear Sir [Redacted]

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

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

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

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

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

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

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

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

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

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

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

Email on: 19 July 2022

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



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

Date 2022-07-19 13:33

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

Company: New Port Centre & Synergis management services limited

By Email [Redacted]

Dear Sir,

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

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

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

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

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

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

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

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

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

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Email on: 17 August 2022

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



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

Date 2022-08-17 11:54

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

Company: Kum Shing Group and Hong Kong Energy Infrastructure Limited

By Email [Redacted]

Dear Sir,

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

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

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

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

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

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

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

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

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

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

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

Email on: 19 August 2022

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



From

To

Cc

Date 2022-08-19 08:36

Dear Mr. LEE,

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

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

best,
Paul Lee

Email on: 15 September 2022

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



From

To
Bcc

Date 2022-09-15 15:35

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

Company: New Port Centre & Synergis management services limited

By Email

Dear Sir,

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

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

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

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

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

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

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

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

Yours Sincerely,

Lee Wing Hang
Ka Shing Management Consultant Limited

Appendix D – Environmental monitoring schedules

Contract No. EDO 15/2018 Environmental Monitoring at Kai Tak Development Stage 4 Infrastructure at the former runway and south apron
Tentative Environmental Monitoring and Weekly Site Inspection Schedule for August 2024

August 2024

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

AM3 - Sky Tower
AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop
AM7 - Hong Kong Children's Hospital

Noise Quality Monitoring Station

M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop
M12 - Hong Kong Children's Hospital

Contract No. EDO 15/2018 Environmental Monitoring at Kai Tak Development Stage 4 Infrastructure at the former runway and south apron

Tentative Environmental Monitoring and Weekly Site Inspection Schedule for September 2024

September 2024

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

NOTE:

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

Air Quality Monitoring Station

AM3 - Sky Tower

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

AM7 - Hong Kong Children's Hospital

Noise Quality Monitoring Station

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

M12 - Hong Kong Children's Hospital

Appendix E – Photographic records

Impact TSP Monitoring



Measurement setup at AM3



Measurement setup at AM4(A)



Measurement setup at AM7

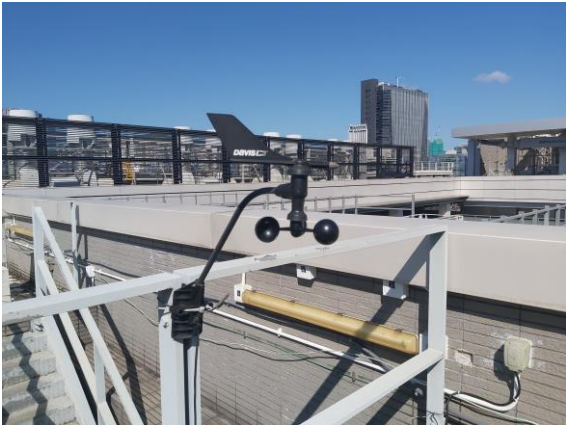
Impact Noise Monitoring



Measurement setup at M11



Measurement setup at M12



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

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

Catalogue of High Volume Sampler (HVS)



TSP MFC

Total Suspended Particulate, Mass Flow Controlled



MFC TSP
Ambient Air Sampler

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

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

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

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www.tischinternational.com



www.tisch-env.com

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



TSP MFC

MFC TSP Ambient Air Sampler

General System Specifications

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

Applications

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

Optional Equipment

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

Available Models

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

Calibration Equipment

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

Physical Specifications

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

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www.tisch-env.com



Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2024060701 Date of calibration : 07/06/2024

Location : Sky Tower Sampler : TE-5170X

Calibration Data

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

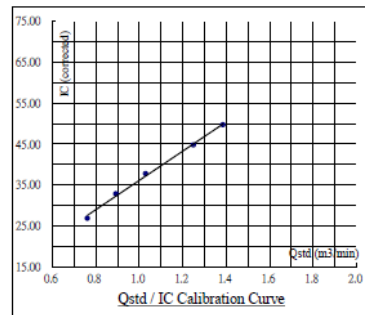
Qstd Slope, m = 2.03976 Qstd Intercept, b = -0.012990

Calibration Curve

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

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1 / m [(I) (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	35.732	0.3774	0.9980



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

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

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

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

Calibrated by : Poon Tsz Wing Checked by : Choy Ching Yee

Name : (Poon Tsz Wing) Name : (Choy Ching Yee)

Form No. DNS-HVS-CAL-04 16 01 2020

Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2024080601 Date of calibration : 06/08/2024

Location : Sky Tower Sampler : TE-5170X

Calibration Data

Ambient barometric pressure, Pa = 753.8 (mmHg) Ambient temperature, Ta = 306.95 (deg K)

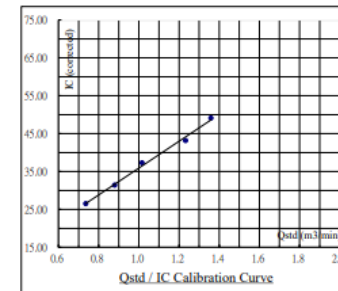
Qstd Slope, m = 2.03976 Qstd Intercept, b = -0.012990

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ / min)	I (chart)	IC (corrected)
18	7.90	1.359	50.0	49.07
13	6.50	1.233	44.0	43.18
10	4.40	1.016	38.0	37.29
7	3.30	0.880	32.0	31.40
5	2.30	0.736	27.0	26.50

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1 / m [(I) (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	35.390	0.5128	0.9971



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

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

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

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

Calibrated by : Poon Tsz Wing Checked by : Choy Ching Yee

Name : (Poon Tsz Wing) Name : (Choy Ching Yee)

Form No. DNS-HVS-CAL-04 16 01 2020

Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2024060703 Date of calibration : 07/06/2024

Location : Hong Kong Children's Hospital Sampler : TE-5170X

Calibration Data

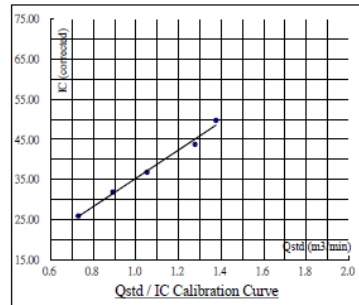
Ambient barometric pressure, Pa = 755.4 (mmHg) Ambient temperature, Ta = 299.75 (deg K)
Qstd Slope, m = 2.03976 Qstd Intercept, b = -0.012990

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	7.90	1.376	50.0	49.70
13	6.80	1.277	44.0	43.74
10	4.60	1.052	37.0	36.78
7	3.30	0.892	32.0	31.81
5	2.20	0.729	26.0	25.85

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1 / m [I (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	35.218	0.0617	0.9954



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

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

Calibrated by : (Signature) Checked by : (Signature)
Name : (Poon Tsz Wing) Name : (Choy Ching Yee)

Form No. DNS-HVS-CAL-04 16.01.2020

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2024080603 Date of calibration : 06/08/2024

Location : Hong Kong Children's Hospital Sampler : TE-5170X

Calibration Data

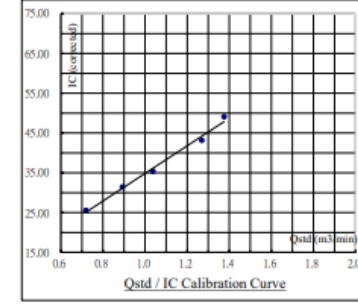
Ambient barometric pressure, Pa = 753.8 (mmHg) Ambient temperature, Ta = 306.95 (deg K)
Qstd Slope, m = 2.03976 Qstd Intercept, b = -0.012990

Calibration Curve

Plate No.	H ₂ O (in)	Qstd (m ³ /min)	I (chart)	IC (corrected)
18	8.10	1.376	50.0	49.07
13	6.90	1.270	44.0	43.18
10	4.60	1.038	36.0	35.33
7	3.40	0.893	32.0	31.40
5	2.20	0.720	26.0	25.51

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1 / m [I (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	34.697	0.1402	0.9952



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

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

Calibrated by : (Signature) Checked by : (Signature)
Name : (Poon Tsz Wing) Name : (Choy Ching Yee)

Form No. DNS-HVS-CAL-04 16.01.2020

Calibration Certificate of HVS

Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2024053001 Date of calibration : 30/05/2024

Model no : GS2310 Serial number : 10346

Calibration Data

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

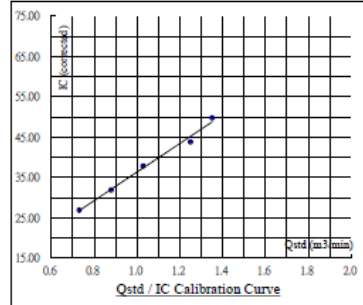
Qstd Slope, m = 2.03976 Qstd Intercept, b = -0.012990

Calibration Curve

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

Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff, r
Dickson recorder	$Qstd = 1 / ml [(I) (\text{Sqrt} ((Pa / 760) (298 / Ta))) - b]$	35.445	0.8648	0.9952



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

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

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

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

Calibrated by : Poon Tsz Wing Checked by : Choy Chung Yee

Name : (Poon Tsz Wing) Name : (Choy Chung Yee)

Form No. DNS-HVS-CAL-04 16 01 2020

Orifice Transfer Standard Certification Worksheet TE-5025A



RECALIBRATION DUE DATE: May 6, 2025
--

Certificate of Calibration

Calibration Certification Information			
Cal. Date: May 6, 2024	Rootsmer 5/N: 438320	Ta: 295 °K	
Operator: Jim Tisch		Pa: 748.5 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 0006		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4190	3.2	2.00
2	3	4	1	1.0030	6.4	4.00
3	5	6	1	0.8950	7.9	5.00
4	7	8	1	0.8520	8.8	5.50
5	9	10	1	0.7040	12.7	8.00

Data Tabulation						
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H (\frac{Pa}{Pstd}) (\frac{Tstd}{Ta})}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta / Pa)}$ (y-axis)	
0.9907	0.6982	1.4106	0.9957	0.7017	0.8878	
0.9864	0.9835	1.9949	0.9914	0.9885	1.2556	
0.9844	1.0999	2.2304	0.9894	1.1055	1.4037	
0.9832	1.1540	2.3393	0.9882	1.1599	1.4723	
0.9781	1.3893	2.8213	0.9830	1.3964	1.7756	
QSTD			QA			
m= 2.03976			m= 1.27726			
b= -0.01299			b= -0.00818			
r= 1.00000			r= 1.00000			

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

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

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

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

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

Catalogue of Dust Meter (TSI Sidepak AM510)

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

User Friendly

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

Advanced Features

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

Quick and Easy Reports

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

Power to Spare

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

Model AMS10

SidePak Personal Aerosol Monitor

Sensitivity

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

Flow Rate

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

Temperature Range

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

Operational Humidity

0 to 95% RH, non-condensing

Time Constant (LCD display)

Range	User-adjustable, 1 to 60 seconds
-------	----------------------------------

Data Logging

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

User-Select Calibration Factors

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

Physical

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

Power Supply/Charger (P/N 2613210)

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

Maintenance

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

Communications Interface

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

Minimum Computer Requirements for TrakPro™ Data Analysis Software

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

Battery Performance

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

*Of a fully depleted battery

**All dust plugs and dust gaskets must be installed.

***Using Energizer AA-size, E91 alkaline batteries.

Battery Level Indicator

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



Calibration Certificate of Dust Meter (TSI Sidepak AM510)



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



Calibration Certificate No.: CC0072312

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.
Aerosol Monitor	TSI	SidePak AM510	11306015	AAST-RSP-03

Certificate Information

Date of Receipt:	8 December 2023	Calibration Condition:	21.3°C, 56%RH, 1014hPa
Date of Calibration:	18 December 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	ISO 21501-4:2018	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Aerosol Monitor	8534	8534182605	24 November 2024

Result of Calibration

Gas	Reference Setting (mg/m ³)	Measured reading (mg/m ³)	Error (%)	Uncertainty (%)	Technical Requirement	Technical Reference Doc.
Dust - TSP	0.103	0.100	-2.9	14.0	N/A	Mfr's Spec.
Dust - TSP	0.202	0.200	-1.0	14.0	N/A	Mfr's Spec.
Dust - TSP	0.300	0.299	-0.3	14.0	N/A	Mfr's Spec.

CF-GAS-01

- Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
- Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognised 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 shown in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Wing Cheng

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 19 December 2023

CF-REG-04

*** End of Certificate ***

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CC0072312
 Page 1 of 1

Personal Aerosol Monitor Performance check with High Volume Sampler

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

Objective:

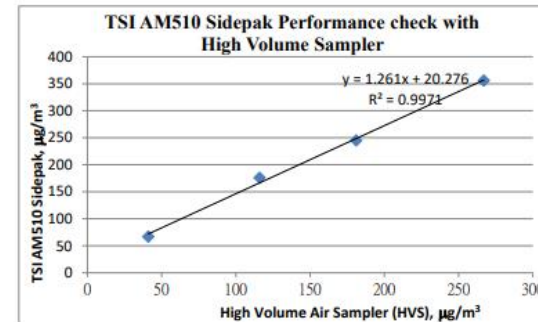
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

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

Result:

Equipment	Measurement Result, µg/m ³			
TSI AM510 Sidepak	67	176	245	356
High Volume Air Sampler (HVS)	41	116	181	267



Tested by:

Name: (Poon Tsz Wing)

Checked by:

Name: (Choy Ching Yee)

Form No. ENV CAL SAMPLER CCI (d12/12/2003)

Calibration Certificate of Dust Meter (TSI Sidepak AM510)



Cal Lab Limited 校正實驗室有限公司
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 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0212312

Information provided by customer

Customer: Casco 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.
Aerosol Monitor	TSI	SidePak AM510	11506009	AAST-RSP-08

Certificate Information

Date of Receipt:	14 December 2023	Calibration Condition:	21.3°C, 56%RH, 1014hPa
Date of Calibration:	18 December 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	ISO 21501-4:2018	Remark:	N/A

Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Aerosol Monitor	8534	8534182605	24 November 2024

Result of Calibration

Gas	Reference Setting (mg/m ³)	Measured reading (mg/m ³)	Error (%)	Uncertainty (%)	Technical Requirement	Technical Reference Doc.
Dust - TSP	0.103	0.113	9.7	14.0	N/A	Mfr's Spec.
Dust - TSP	0.202	0.218	7.9	14.0	N/A	Mfr's Spec.
Dust - TSP	0.300	0.296	-1.3	14.0	N/A	Mfr's Spec.

CF-6A5-01

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 shown in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Wing Cheng

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 19 December 2023

CF-BEG-04

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CC0212312
 Page 1 of 1

Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0240523-2 Report Issue Date 23/05/2024
 Date of performance check 23/05/2024

Objective:

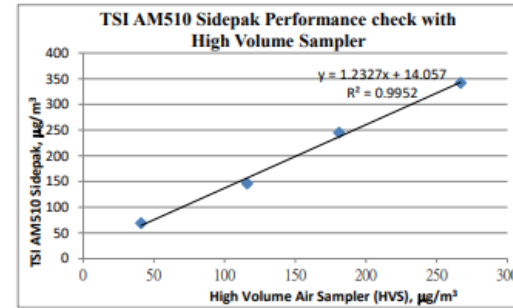
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

Equipment Used:

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11506009
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

Result:

Equipment	Measurement Result, µg/m ³			
	69	146	245	342
TSI AM510 Sidepak	69	146	245	342
High Volume Air Sampler (HVS)	41	116	181	267



Tested by:
 Name: (Poon Tsz Wing)

Checked by:
 Name: (Choy Ching Yee)

Form No. ENV CAL SAMPLER CCI 6012/12/2003

Catalogue of Weather Station

Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations



**6152C
6162C**
Vantage Pro2™

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

Integrated Sensor Suite (ISS)

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

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

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

ISS Dimensions(not including anemometer or bird spikes):

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

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

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

7
Vantage Pro2™

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

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

Wind

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

Calibration Certificate of Weather Station



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

Calibration Certificate No.: CC0852407

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	AZ170710016	AAST-WS-03


Certificate Information

Date of Receipt:	18 July 2024	Calibration Condition:	24.4°C, 54%RH, 998hPa
Date of Calibration:	24 July 2024	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	JIF 1183-2007, JIF 1076-2020, SDP-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 estimate to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
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 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 shown 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: 29 July 2024

CF-BEG-04

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CC0852407
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Appendix G – Weather information

General Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)	Total Rainfall (mm)
01/08/2024	28.2	32.9	2.3
02/08/2024	28.2	31.5	0.4
03/08/2024	28.7	33.3	0
04/08/2024	28.3	34.2	0
05/08/2024	29.3	35.4	0
06/08/2024	26.6	34.9	10.3
07/08/2024	28.6	33.7	0
08/08/2024	29.3	33.2	0
09/08/2024	28.7	33	0
10/08/2024	29	32.7	Trace
11/08/2024	29.2	32	0
12/08/2024	26	31.8	20.9
13/08/2024	28	33.4	5
14/08/2024	28.2	30.5	0.1
15/08/2024	26	29.9	8
16/08/2024	26.5	29.5	0.4
17/08/2024	25.2	28.8	116.2
18/08/2024	25.8	30.3	32.5
19/08/2024	26.9	28.8	19.3
20/08/2024	25.6	28.5	11.4
21/08/2024	26.3	28.2	3.9
22/08/2024	26.6	32	0
23/08/2024	28	31.4	0
24/08/2024	28.1	34.3	0
25/08/2024	28	33.7	0
26/08/2024	28.4	33.8	0
27/08/2024	28.5	34.1	0
28/08/2024	27.6	34.8	Trace
29/08/2024	28.3	33.6	Trace
30/08/2024	27.9	33.7	23.3
31/08/2024	27.8	32.2	7.5

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

NOTE2: race means rainfall less than 0.05 mm

<https://www.hko.gov.hk/en/cis/dailyExtract.htm?y=2024&m=8>

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/08/2024	0:00	1.3	90	02/08/2024	0:00	0.4	270	03/08/2024	0:00	0.4	67.5	04/08/2024	0:00	0.4	112.5
01/08/2024	1:00	2.2	90	02/08/2024	1:00	0.4	270	03/08/2024	1:00	0.4	112.5	04/08/2024	1:00	0.4	112.5
01/08/2024	2:00	1.3	67.5	02/08/2024	2:00	0.4	270	03/08/2024	2:00	0.9	22.5	04/08/2024	2:00	0.4	135
01/08/2024	3:00	1.8	22.5	02/08/2024	3:00	0.9	247.5	03/08/2024	3:00	0.9	90	04/08/2024	3:00	0.9	135
01/08/2024	4:00	1.3	67.5	02/08/2024	4:00	0.4	270	03/08/2024	4:00	0.9	292.5	04/08/2024	4:00	0.4	112.5
01/08/2024	5:00	1.3	90	02/08/2024	5:00	0.9	270	03/08/2024	5:00	0.4	292.5	04/08/2024	5:00	0.4	157.5
01/08/2024	6:00	1.8	135	02/08/2024	6:00	1.3	247.5	03/08/2024	6:00	0.4	292.5	04/08/2024	6:00	0.4	135
01/08/2024	7:00	1.8	67.5	02/08/2024	7:00	0.9	270	03/08/2024	7:00	0.9	22.5	04/08/2024	7:00	0.4	112.5
01/08/2024	8:00	1.3	225	02/08/2024	8:00	0.9	135	03/08/2024	8:00	0.4	22.5	04/08/2024	8:00	0.9	292.5
01/08/2024	9:00	1.3	157.5	02/08/2024	9:00	1.3	247.5	03/08/2024	9:00	0.9	337.5	04/08/2024	9:00	0.4	112.5
01/08/2024	10:00	1.8	112.5	02/08/2024	10:00	0.9	112.5	03/08/2024	10:00	0.9	270	04/08/2024	10:00	0.4	135
01/08/2024	11:00	1.8	67.5	02/08/2024	11:00	0.9	112.5	03/08/2024	11:00	0.4	22.5	04/08/2024	11:00	0.4	112.5
01/08/2024	12:00	2.2	22.5	02/08/2024	12:00	0.9	112.5	03/08/2024	12:00	0.9	202.5	04/08/2024	12:00	0.9	135
01/08/2024	13:00	2.7	45	02/08/2024	13:00	0.4	135	03/08/2024	13:00	0.4	270	04/08/2024	13:00	0.4	90
01/08/2024	14:00	2.2	45	02/08/2024	14:00	0.9	157.5	03/08/2024	14:00	0.4	247.5	04/08/2024	14:00	0.4	45
01/08/2024	15:00	2.7	45	02/08/2024	15:00	0.4	135	03/08/2024	15:00	1.3	202.5	04/08/2024	15:00	0.4	90
01/08/2024	16:00	3.1	90	02/08/2024	16:00	0.4	202.5	03/08/2024	16:00	1.3	247.5	04/08/2024	16:00	0.4	67.5
01/08/2024	17:00	1.3	67.5	02/08/2024	17:00	0.4	247.5	03/08/2024	17:00	0.4	247.5	04/08/2024	17:00	0.4	135
01/08/2024	18:00	1.3	67.5	02/08/2024	18:00	0.4	247.5	03/08/2024	18:00	0.4	157.5	04/08/2024	18:00	0.4	90
01/08/2024	19:00	1.3	135	02/08/2024	19:00	0.4	247.5	03/08/2024	19:00	0.9	202.5	04/08/2024	19:00	0.4	112.5
01/08/2024	20:00	0.4	67.5	02/08/2024	20:00	0.9	247.5	03/08/2024	20:00	0.4	225	04/08/2024	20:00	0.4	157.5
01/08/2024	21:00	1.3	90	02/08/2024	21:00	0.4	22.5	03/08/2024	21:00	0.4	225	04/08/2024	21:00	0.9	135
01/08/2024	22:00	0.9	67.5	02/08/2024	22:00	0.4	225	03/08/2024	22:00	0.4	225	04/08/2024	22:00	1.3	135
01/08/2024	23:00	0.9	67.5	02/08/2024	23:00	0.9	112.5	03/08/2024	23:00	0.4	225	04/08/2024	23:00	0.9	135

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
05/08/2024	0:00	0.9	112.5	06/08/2024	0:00	0.9	337.5	07/08/2024	0:00	0.4	247.5	08/08/2024	0:00	0.4	247.5
05/08/2024	1:00	0.9	112.5	06/08/2024	1:00	0.4	337.5	07/08/2024	1:00	0.4	225	08/08/2024	1:00	0.4	225
05/08/2024	2:00	0.4	135	06/08/2024	2:00	0.4	337.5	07/08/2024	2:00	0.4	247.5	08/08/2024	2:00	0.9	270
05/08/2024	3:00	0.9	157.5	06/08/2024	3:00	1.3	337.5	07/08/2024	3:00	0.4	270	08/08/2024	3:00	1.3	247.5
05/08/2024	4:00	0.4	135	06/08/2024	4:00	2.2	45	07/08/2024	4:00	0.9	270	08/08/2024	4:00	1.3	135
05/08/2024	5:00	0.4	202.5	06/08/2024	5:00	2.2	292.5	07/08/2024	5:00	0.4	247.5	08/08/2024	5:00	0.4	112.5
05/08/2024	6:00	0.4	247.5	06/08/2024	6:00	1.8	337.5	07/08/2024	6:00	0.9	270	08/08/2024	6:00	0.4	157.5
05/08/2024	7:00	0.4	247.5	06/08/2024	7:00	1.8	22.5	07/08/2024	7:00	1.8	247.5	08/08/2024	7:00	0.4	135
05/08/2024	8:00	0.4	247.5	06/08/2024	8:00	2.2	45	07/08/2024	8:00	1.8	247.5	08/08/2024	8:00	0.4	112.5
05/08/2024	9:00	0.9	247.5	06/08/2024	9:00	1.8	45	07/08/2024	9:00	1.3	247.5	08/08/2024	9:00	0.9	292.5
05/08/2024	10:00	1.3	202.5	06/08/2024	10:00	1.3	315	07/08/2024	10:00	1.3	270	08/08/2024	10:00	0.4	112.5
05/08/2024	11:00	1.8	202.5	06/08/2024	11:00	2.2	202.5	07/08/2024	11:00	0.9	270	08/08/2024	11:00	0.4	135
05/08/2024	12:00	1.3	225	06/08/2024	12:00	0.9	247.5	07/08/2024	12:00	0.9	225	08/08/2024	12:00	0.4	112.5
05/08/2024	13:00	0.4	270	06/08/2024	13:00	1.3	22.5	07/08/2024	13:00	0.4	225	08/08/2024	13:00	0.9	135
05/08/2024	14:00	0.9	247.5	06/08/2024	14:00	1.3	202.5	07/08/2024	14:00	0.9	315	08/08/2024	14:00	1.3	90
05/08/2024	15:00	0.4	225	06/08/2024	15:00	1.8	270	07/08/2024	15:00	0.4	315	08/08/2024	15:00	1.3	22.5
05/08/2024	16:00	0.4	292.5	06/08/2024	16:00	1.8	247.5	07/08/2024	16:00	1.3	315	08/08/2024	16:00	0.9	112.5
05/08/2024	17:00	0.9	315	06/08/2024	17:00	0.9	247.5	07/08/2024	17:00	1.3	157.5	08/08/2026	17:00	1.3	157.5
05/08/2024	18:00	0.9	247.5	06/08/2024	18:00	0.9	247.5	07/08/2024	18:00	1.3	157.5	08/08/2024	18:00	0.9	135
05/08/2024	19:00	1.3	225	06/08/2024	19:00	1.3	315	07/08/2024	19:00	1.3	202.5	08/08/2024	19:00	1.3	112.5
05/08/2024	20:00	1.3	157.5	06/08/2024	20:00	1.3	270	07/08/2024	20:00	0.9	202.5	08/08/2024	20:00	1.3	157.5
05/08/2024	21:00	1.3	202.5	06/08/2024	21:00	1.3	270	07/08/2024	21:00	0.9	292.5	08/08/2024	21:00	1.3	112.5
05/08/2024	22:00	0.9	202.5	06/08/2024	22:00	0.9	337.5	07/08/2024	22:00	0.9	247.5	08/08/2024	22:00	1.3	90
05/08/2024	23:00	1.3	247.5	06/08/2024	23:00	1.3	247.5	07/08/2024	23:00	0.9	270	08/08/2024	23:00	0.9	22.5

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
09/08/2024	0:00	0.9	90	10/08/2024	0:00	0.9	270	11/08/2024	0:00	0.9	112.5	12/08/2024	0:00	1.8	45
09/08/2024	1:00	0.9	22.5	10/08/2024	1:00	0.9	292.5	11/08/2024	1:00	0.9	90	12/08/2024	1:00	1.8	112.5
09/08/2024	2:00	0.4	45	10/08/2024	2:00	0.9	135	11/08/2024	2:00	0.9	135	12/08/2024	2:00	1.8	22.5
09/08/2024	3:00	1.3	67.5	10/08/2024	3:00	0.9	112.5	11/08/2024	3:00	0.9	135	12/08/2024	3:00	0.4	112.5
09/08/2024	4:00	1.3	112.5	10/08/2024	4:00	0.9	135	11/08/2028	4:00	0.9	112.5	12/08/2024	4:00	1.3	90
09/08/2024	5:00	0.9	157.5	10/08/2024	5:00	1.3	112.5	11/08/2024	5:00	0.9	135	12/08/2024	5:00	0.9	45
09/08/2024	6:00	0.9	315	10/08/2024	6:00	0.9	135	11/08/2024	6:00	0.9	90	12/08/2024	6:00	0.4	45
09/08/2024	7:00	0.9	292.5	10/08/2024	7:00	0.4	45	11/08/2024	7:00	1.3	112.5	12/08/2024	7:00	0.4	292.5
09/08/2024	8:00	0.9	135	10/08/2024	8:00	0.4	135	11/08/2024	8:00	1.3	112.5	12/08/2024	8:00	0.9	22.5
09/08/2024	9:00	0.9	45	10/08/2024	9:00	0.4	112.5	11/08/2024	9:00	0.9	112.5	12/08/2024	9:00	2.2	247.5
09/08/2024	10:00	1.3	202.5	10/08/2024	10:00	0.4	67.5	11/08/2024	10:00	1.8	112.5	12/08/2024	10:00	2.7	337.5
09/08/2024	11:00	0.9	135	10/08/2024	11:00	0.4	90	11/08/2026	11:00	0.9	112.5	12/08/2024	11:00	2.2	270
09/08/2024	12:00	0.9	112.5	10/08/2024	12:00	0.4	135	11/08/2024	12:00	1.3	112.5	12/08/2024	12:00	2.2	247.5
09/08/2024	13:00	0.9	45	10/08/2024	13:00	0.4	90	11/08/2024	13:00	1.3	67.5	12/08/2024	13:00	2.7	337.5
09/08/2024	14:00	0.9	135	10/08/2024	14:00	0.4	90	11/08/2024	14:00	0.9	112.5	12/08/2024	14:00	2.2	270
09/08/2024	15:00	0.9	180	10/08/2024	15:00	0.4	112.5	11/08/2024	15:00	0.9	67.5	12/08/2024	15:00	1.8	157.5
09/08/2024	16:00	0.9	112.5	10/08/2024	16:00	0.4	112.5	11/08/2024	16:00	1.3	112.5	12/08/2024	16:00	2.2	270
09/08/2024	17:00	0.9	135	10/08/2024	17:00	0.9	90	11/08/2024	17:00	0.9	135	12/08/2024	17:00	1.8	270
09/08/2024	18:00	0.9	112.5	10/08/2024	18:00	1.3	112.5	11/08/2024	18:00	0.9	157.5	12/08/2024	18:00	2.2	22.5
09/08/2024	19:00	0.9	112.5	10/08/2024	19:00	1.3	90	11/08/2024	19:00	0.9	90	12/08/2024	19:00	1.3	22.5
09/08/2024	20:00	1.3	135	10/08/2024	20:00	1.8	90	11/08/2024	20:00	0.9	135	12/08/2024	20:00	1.8	90
09/08/2024	21:00	0.9	135	10/08/2024	21:00	1.8	90	11/08/2024	21:00	0.9	112.5	12/08/2024	21:00	1.3	135
09/08/2024	22:00	1.8	135	10/08/2024	22:00	1.8	90	11/08/2024	22:00	0.9	90	12/08/2024	22:00	2.2	270
09/08/2024	23:00	1.8	112.5	10/08/2024	23:00	0.9	112.5	11/08/2024	23:00	0.4	90	12/08/2024	23:00	2.2	315

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
13/08/2024	0:00	2.2	67.5	14/08/2024	0:00	1.3	135	15/08/2024	0:00	0.4	135	16/08/2024	0:00	0.9	45
13/08/2024	1:00	1.8	135	14/08/2024	1:00	0.9	112.5	15/08/2024	1:00	1.3	90	16/08/2024	1:00	0.4	337.5
13/08/2024	2:00	1.3	22.5	14/08/2024	2:00	1.8	90	15/08/2024	2:00	0.9	135	16/08/2024	2:00	0.4	270
13/08/2024	3:00	0.9	135	14/08/2024	3:00	1.3	112.5	15/08/2024	3:00	0.4	90	16/08/2024	3:00	0.9	315
13/08/2024	4:00	1.3	112.5	14/08/2024	4:00	1.3	135	15/08/2024	4:00	0.4	292.5	16/08/2024	4:00	0.4	45
13/08/2024	5:00	1.3	112.5	14/08/2024	5:00	1.3	180	15/08/2024	5:00	0.4	67.5	16/08/2024	5:00	0.9	270
13/08/2024	6:00	1.3	112.5	14/08/2024	6:00	0.9	90	15/08/2024	6:00	0.4	90	16/08/2024	6:00	0.4	45
13/08/2024	7:00	1.8	135	14/08/2024	7:00	0.9	135	15/08/2024	7:00	0.4	157.5	16/08/2024	7:00	0.4	22.5
13/08/2024	8:00	1.3	112.5	14/08/2024	8:00	1.8	45	15/08/2024	8:00	0.4	112.5	16/08/2024	8:00	0.9	45
13/08/2024	9:00	1.3	112.5	14/08/2024	9:00	1.3	135	15/08/2024	9:00	0.4	67.5	16/08/2024	9:00	0.4	90
13/08/2024	10:00	1.3	67.5	14/08/2024	10:00	1.8	112.5	15/08/2024	10:00	0.4	135	16/08/2024	10:00	0.4	270
13/08/2024	11:00	2.2	157.5	14/08/2024	11:00	1.8	112.5	15/08/2024	11:00	0.4	157.5	16/08/2024	11:00	0.9	135
13/08/2024	12:00	1.3	112.5	14/08/2024	12:00	1.3	90	15/08/2024	12:00	0.4	157.5	16/08/2024	12:00	0.9	135
13/08/2024	13:00	1.3	180	14/08/2024	13:00	0.9	135	15/08/2024	13:00	0.9	112.5	16/08/2024	13:00	0.9	112.5
13/08/2024	14:00	1.3	112.5	14/08/2024	14:00	0.4	135	15/08/2024	14:00	1.3	112.5	16/08/2024	14:00	0.4	247.5
13/08/2024	15:00	0.9	90	14/08/2024	15:00	0.9	112.5	15/08/2024	15:00	0.9	112.5	16/08/2024	15:00	0.4	202.5
13/08/2024	16:00	1.8	135	14/08/2024	16:00	0.9	112.5	15/08/2024	16:00	0.9	67.5	16/08/2024	16:00	0.4	112.5
13/08/2024	17:00	0.4	112.5	14/08/2024	17:00	0.9	135	15/08/2024	17:00	0.9	112.5	16/08/2024	17:00	0.4	135
13/08/2024	18:00	1.3	157.5	14/08/2024	18:00	0.9	112.5	15/08/2024	18:00	0.4	337.5	16/08/2024	18:00	0.4	112.5
13/08/2024	19:00	1.3	90	14/08/2024	19:00	0.9	67.5	15/08/2024	19:00	0.4	135	16/08/2024	19:00	0.4	112.5
13/08/2024	20:00	0.9	90	14/08/2024	20:00	1.8	90	15/08/2024	20:00	0.9	112.5	16/08/2024	20:00	0.4	90
13/08/2024	21:00	1.3	22.5	14/08/2024	21:00	1.8	135	15/08/2024	21:00	0.9	22.5	16/08/2024	21:00	0.4	90
13/08/2024	22:00	1.3	90	14/08/2024	22:00	1.8	45	15/08/2024	22:00	1.3	135	16/08/2024	22:00	0.4	112.5
13/08/2024	23:00	1.8	45	14/08/2024	23:00	1.3	90	15/08/2024	23:00	1.8	112.5	16/08/2024	23:00	0.9	112.5

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/08/2024	0:00	1.8	90	18/08/2024	0:00	1.8	112.5	19/08/2024	0:00	1.3	90	20/08/2024	0:00	1.3	90
17/08/2024	1:00	2.7	90	18/08/2024	1:00	1.8	90	19/08/2024	1:00	1.3	135	20/08/2024	1:00	1.3	112.5
17/08/2024	2:00	3.1	112.5	18/08/2024	2:00	1.3	45	19/08/2024	2:00	1.8	135	20/08/2024	2:00	1.3	90
17/08/2024	3:00	2.2	202.5	18/08/2024	3:00	2.2	22.5	19/08/2024	3:00	1.8	90	20/08/2024	3:00	1.3	112.5
17/08/2024	4:00	4.5	45	18/08/2024	4:00	1.3	67.5	19/08/2024	4:00	0.9	112.5	20/08/2024	4:00	1.3	90
17/08/2024	5:00	5.4	45	18/08/2024	5:00	2.2	135	19/08/2024	5:00	1.8	337.5	20/08/2024	5:00	1.8	112.5
17/08/2024	6:00	3.1	90	18/08/2024	6:00	3.1	135	19/08/2024	6:00	1.3	112.5	20/08/2024	6:00	1.3	67.5
17/08/2024	7:00	3.1	112.5	18/08/2024	7:00	2.7	180	19/08/2024	7:00	1.3	90	20/08/2024	7:00	1.3	112.5
17/08/2024	8:00	4	112.5	18/08/2024	8:00	3.1	67.5	19/08/2024	8:00	1.3	90	20/08/2024	8:00	1.3	67.5
17/08/2024	9:00	3.6	112.5	18/08/2024	9:00	0.9	45	19/08/2024	9:00	1.3	112.5	20/08/2024	9:00	2.2	67.5
17/08/2024	10:00	4.5	247.5	18/08/2024	10:00	1.3	270	19/08/2024	10:00	1.3	112.5	20/08/2024	10:00	1.3	112.5
17/08/2024	11:00	3.6	315	18/08/2024	11:00	1.3	247.5	19/08/2024	11:00	2.2	135	20/08/2024	11:00	1.3	112.5
17/08/2024	12:00	3.6	315	18/08/2024	12:00	1.3	247.5	19/08/2024	12:00	1.3	135	20/08/2024	12:00	1.3	90
17/08/2024	13:00	2.7	315	18/08/2024	13:00	0.9	292.5	19/08/2024	13:00	1.8	112.5	20/08/2024	13:00	0.9	135
17/08/2024	14:00	2.2	315	18/08/2024	14:00	1.3	225	19/08/2024	14:00	1.3	90	20/08/2024	14:00	1.8	135
17/08/2024	15:00	2.2	247.5	18/08/2024	15:00	0.9	247.5	19/08/2024	15:00	1.3	135	20/08/2024	15:00	1.3	112.5
17/08/2024	16:00	2.7	247.5	18/08/2024	16:00	0.9	247.5	19/08/2024	16:00	1.8	135	20/08/2024	16:00	1.3	112.5
17/08/2024	17:00	2.2	157.5	18/08/2024	17:00	0.9	157.5	19/08/2024	17:00	1.8	112.5	20/08/2024	17:00	1.3	112.5
17/08/2024	18:00	1.8	135	18/08/2024	18:00	0.4	112.5	19/08/2024	18:00	1.3	135	20/08/2024	18:00	0.9	90
17/08/2024	19:00	2.2	157.5	18/08/2024	19:00	0.9	157.5	19/08/2024	19:00	1.3	90	20/08/2024	19:00	1.3	112.5
17/08/2024	20:00	1.8	135	18/08/2024	20:00	1.3	157.5	19/08/2024	20:00	1.8	45	20/08/2024	20:00	0.4	112.5
17/08/2024	21:00	2.2	112.5	18/08/2024	21:00	0.9	247.5	19/08/2024	21:00	1.3	22.5	20/08/2024	21:00	0.4	90
17/08/2024	22:00	2.7	135	18/08/2024	22:00	0.4	112.5	19/08/2024	22:00	2.7	45	20/08/2024	22:00	0.9	135
17/08/2024	23:00	3.1	157.5	18/08/2024	23:00	0.9	112.5	19/08/2024	23:00	1.8	135	20/08/2024	23:00	0.9	90

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
21/08/2024	0:00	0.9	67.5	22/08/2024	0:00	0.4	90	23/08/2024	0:00	0.9	315	24/08/2024	0:00	0.4	90
21/08/2024	1:00	0.4	112.5	22/08/2024	1:00	0.4	22.5	23/08/2024	1:00	1.3	292.5	24/08/2024	1:00	0.4	22.5
21/08/2024	2:00	0.4	90	22/08/2024	2:00	0.9	90	23/08/2024	2:00	0.4	45	24/08/2024	2:00	1.3	90
21/08/2024	3:00	0.9	112.5	22/08/2024	3:00	0.9	67.5	23/08/2024	3:00	0.4	45	24/08/2024	3:00	0.9	112.5
21/08/2024	4:00	0.9	90	22/08/2024	4:00	0.4	112.5	23/08/2024	4:00	0.4	67.5	24/08/2024	4:00	0.9	112.5
21/08/2024	5:00	1.3	112.5	22/08/2024	5:00	0.4	90	23/08/2024	5:00	0.9	90	24/08/2024	5:00	0.9	135
21/08/2024	6:00	1.3	67.5	22/08/2024	6:00	0.9	112.5	23/08/2024	6:00	0.4	135	24/08/2024	6:00	0.9	90
21/08/2024	7:00	1.3	112.5	22/08/2024	7:00	0.9	90	23/08/2024	7:00	0.9	90	24/08/2024	7:00	0.9	112.5
21/08/2024	8:00	0.9	67.5	22/08/2024	8:00	1.3	112.5	23/08/2024	8:00	0.4	112.5	24/08/2024	8:00	1.8	112.5
21/08/2024	9:00	1.3	67.5	22/08/2024	9:00	1.3	67.5	23/08/2024	9:00	0.9	135	24/08/2024	9:00	0.9	112.5
21/08/2024	10:00	0.9	90	22/08/2024	10:00	1.3	112.5	23/08/2024	10:00	1.3	112.5	24/08/2024	10:00	0.9	90
21/08/2024	11:00	0.9	90	22/08/2024	11:00	0.9	67.5	23/08/2024	11:00	1.3	112.5	24/08/2024	11:00	1.3	90
21/08/2024	12:00	0.9	67.5	22/08/2024	12:00	1.3	67.5	23/08/2024	12:00	0.9	157.5	24/08/2024	12:00	0.9	90
21/08/2024	13:00	0.4	112.5	22/08/2024	13:00	0.9	90	23/08/2024	13:00	1.3	90	24/08/2024	13:00	0.4	67.5
21/08/2024	14:00	0.9	67.5	22/08/2024	14:00	0.9	90	23/08/2024	14:00	1.3	112.5	24/08/2024	14:00	0.4	112.5
21/08/2024	15:00	0.4	135	22/08/2024	15:00	0.9	67.5	23/08/2024	15:00	0.9	90	24/08/2024	15:00	0.4	22.5
21/08/2024	16:00	0.4	67.5	22/08/2024	16:00	0.4	112.5	23/08/2024	16:00	0.9	67.5	24/08/2024	16:00	2.7	270
21/08/2024	17:00	0.9	67.5	22/08/2024	17:00	0.4	90	23/08/2024	17:00	0.4	112.5	24/08/2024	17:00	3.1	0
21/08/2024	18:00	0.9	90	22/08/2024	18:00	0.9	112.5	23/08/2024	18:00	0.9	67.5	24/08/2024	18:00	2.2	270
21/08/2024	19:00	0.9	90	22/08/2024	19:00	0.9	90	23/08/2024	19:00	1.3	67.5	24/08/2024	19:00	0.4	337.5
21/08/2024	20:00	0.9	90	22/08/2024	20:00	1.3	112.5	23/08/2024	20:00	0.9	90	24/08/2024	20:00	1.3	270
21/08/2024	21:00	1.3	67.5	22/08/2024	21:00	1.3	67.5	23/08/2024	21:00	0.9	90	24/08/2024	21:00	0.9	247.5
21/08/2024	22:00	0.9	67.5	22/08/2024	22:00	1.3	112.5	23/08/2024	22:00	0.9	67.5	24/08/2024	22:00	0.4	225
21/08/2024	23:00	1.3	90	22/08/2024	23:00	0.9	67.5	23/08/2024	23:00	1.8	90	24/08/2024	23:00	0.4	180

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
25/08/2024	0:00	2.2	112.5	26/08/2024	0:00	1.3	67.5	27/08/2024	0:00	1.3	90	28/08/2024	0:00	1.3	90
25/08/2024	1:00	2.2	90	26/08/2024	1:00	0.9	90	27/08/2024	1:00	1.8	67.5	28/08/2024	1:00	0.9	270
25/08/2024	2:00	2.7	112.5	26/08/2024	2:00	0.9	90	27/08/2024	2:00	0.9	112.5	28/08/2024	2:00	0.4	225
25/08/2024	3:00	1.8	112.5	26/08/2024	3:00	0.9	45	27/08/2024	3:00	0.4	112.5	28/08/2024	3:00	0.9	225
25/08/2024	4:00	2.2	90	26/08/2024	4:00	0.9	247.5	27/08/2024	4:00	0.4	90	28/08/2024	4:00	1.3	292.5
25/08/2024	5:00	1.3	90	26/08/2024	5:00	0.4	225	27/08/2024	5:00	0.9	112.5	28/08/2024	5:00	0.9	247.5
25/08/2024	6:00	1.3	112.5	26/08/2024	6:00	0.9	67.5	27/08/2024	6:00	0.9	90	28/08/2024	6:00	1.8	270
25/08/2024	7:00	1.3	112.5	26/08/2024	7:00	0.4	270	27/08/2024	7:00	1.3	90	28/08/2024	7:00	2.2	270
25/08/2024	8:00	2.2	112.5	26/08/2024	8:00	0.4	247.5	27/08/2024	8:00	1.3	112.5	28/08/2024	8:00	1.3	135
25/08/2024	9:00	2.2	90	26/08/2024	9:00	0.4	180	27/08/2024	9:00	0.9	90	28/08/2024	9:00	0.9	315
25/08/2024	10:00	2.7	112.5	26/08/2024	10:00	0.4	247.5	27/08/2024	10:00	0.9	90	28/08/2024	10:00	0.4	315
25/08/2024	11:00	1.8	112.5	26/08/2024	11:00	0.4	270	27/08/2024	11:00	1.3	112.5	28/08/2024	11:00	0.9	45
25/08/2024	12:00	2.2	90	26/08/2024	12:00	0.4	135	27/08/2024	12:00	1.3	112.5	28/08/2024	12:00	0.9	247.5
25/08/2024	13:00	1.3	90	26/08/2024	13:00	0.4	157.5	27/08/2024	13:00	0.9	135	28/08/2024	13:00	1.8	270
25/08/2024	14:00	1.3	112.5	26/08/2024	14:00	0.4	157.5	27/08/2024	14:00	0.9	112.5	28/08/2024	14:00	1.3	270
25/08/2024	15:00	1.3	112.5	26/08/2024	15:00	0.4	202.5	27/08/2024	15:00	0.4	112.5	28/08/2024	15:00	1.8	270
25/08/2024	16:00	0.9	135	26/08/2024	16:00	1.3	225	27/08/2024	16:00	0.9	112.5	28/08/2024	16:00	1.3	247.5
25/08/2024	17:00	1.3	90	26/08/2024	17:00	1.3	247.5	27/08/2024	17:00	0.4	112.5	28/08/2024	17:00	1.3	135
25/08/2024	18:00	0.9	112.5	26/08/2024	18:00	0.9	135	27/08/2024	18:00	0.4	135	28/08/2024	18:00	1.3	135
25/08/2024	19:00	0.9	112.5	26/08/2024	19:00	0.9	112.5	27/08/2024	19:00	0.9	180	28/08/2024	19:00	1.8	135
25/08/2024	20:00	1.8	112.5	26/08/2024	20:00	1.3	22.5	27/08/2024	20:00	0.4	247.5	28/08/2024	20:00	1.3	202.5
25/08/2024	21:00	0.4	90	26/08/2024	21:00	1.3	135	27/08/2024	21:00	0.4	270	28/08/2024	21:00	0.9	270
25/08/2024	22:00	1.3	45	26/08/2024	22:00	2.2	90	27/08/2024	22:00	0.4	270	28/08/2024	22:00	1.3	247.5
25/08/2024	23:00	0.9	112.5	26/08/2024	23:00	1.8	112.5	27/08/2024	23:00	0.4	247.5	28/08/2024	23:00	1.3	225

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

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
29/08/2024	0:00	0.4	112.5	30/08/2024	0:00	1.3	247.5	31/08/2024	0:00	1.8	247.5				
29/08/2024	1:00	0.9	112.5	30/08/2024	1:00	1.8	247.5	31/08/2024	1:00	1.3	270				
29/08/2024	2:00	1.8	90	30/08/2024	2:00	1.3	270	31/08/2024	2:00	1.8	270				
29/08/2024	3:00	1.3	22.5	30/08/2024	3:00	1.3	247.5	31/08/2024	3:00	1.3	247.5				
29/08/2024	4:00	0.4	22.5	30/08/2024	4:00	1.3	247.5	31/08/2024	4:00	1.3	247.5				
29/08/2024	5:00	1.3	270	30/08/2024	5:00	1.8	270	31/08/2024	5:00	1.3	247.5				
29/08/2024	6:00	1.3	135	30/08/2024	6:00	2.7	270	31/08/2024	6:00	1.8	247.5				
29/08/2024	7:00	1.8	22.5	30/08/2024	7:00	2.2	247.5	31/08/2024	7:00	1.3	270				
29/08/2024	8:00	0.9	292.5	30/08/2024	8:00	1.8	247.5	31/08/2024	8:00	1.3	247.5				
29/08/2024	9:00	0.9	90	30/08/2024	9:00	2.2	247.5	31/08/2024	9:00	1.3	247.5				
29/08/2024	10:00	0.9	22.5	30/08/2024	10:00	2.2	270	31/08/2024	10:00	1.3	112.5				
29/08/2024	11:00	0.4	337.5	30/08/2024	11:00	1.8	247.5	31/08/2024	11:00	1.3	135				
29/08/2024	12:00	0.9	292.5	30/08/2024	12:00	1.3	135	31/08/2024	12:00	1.8	135				
29/08/2024	13:00	1.3	90	30/08/2024	13:00	1.3	90	31/08/2024	13:00	1.8	112.5				
29/08/2024	14:00	0.9	315	30/08/2024	14:00	1.8	247.5	31/08/2024	14:00	1.3	112.5				
29/08/2024	15:00	0.4	112.5	30/08/2024	15:00	1.3	22.5	31/08/2024	15:00	1.3	157.5				
29/08/2024	16:00	0.9	247.5	30/08/2024	16:00	0.9	90	31/08/2024	16:00	1.8	135				
29/08/2024	17:00	0.9	247.5	30/08/2024	17:00	1.3	22.5	31/08/2024	17:00	1.3	135				
29/08/2024	18:00	1.3	90	30/08/2024	18:00	0.9	315	31/08/2024	18:00	1.3	135				
29/08/2024	19:00	1.3	45	30/08/2024	19:00	0.9	90	31/08/2024	19:00	1.3	112.5				
29/08/2024	20:00	0.9	247.5	30/08/2024	20:00	1.3	67.5	31/08/2024	20:00	0.4	112.5				
29/08/2024	21:00	1.8	112.5	30/08/2024	21:00	0.9	22.5	31/08/2024	21:00	0.4	112.5				
29/08/2024	22:00	1.8	112.5	30/08/2024	22:00	0.9	90	31/08/2024	22:00	0.9	90				
29/08/2024	23:00	0.4	135	30/08/2024	23:00	1.8	337.5	31/08/2024	23:00	0.4	135				

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

Location: AM3 – Sky Tower

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
03/08/2024	Sunny	34.6	1008.7	15.3106	15.3924	0.0818	2024/8/3 9:34	2024/8/4 9:34	1440.0	46	46	1.25	1805	45
09/08/2024	Sunny	32.2	1005.6	18.4854	18.5609	0.0755	2024/8/9 13:23	2024/8/10 13:23	1440.0	48	48	1.32	1902	40
15/08/2024	Cloudy	30.6	1005.2	18.2312	18.3428	0.1116	2024/8/15 9:35	2024/8/16 9:35	1440.0	46	46	1.27	1826	61
21/08/2024	Cloudy	28.5	1009.8	15.4161	15.5062	0.0901	2024/8/21 13:24	2024/8/22 13:24	1440.0	46	46	1.28	1837	49
27/08/2024	Sunny	31.5	1005.4	18.0874	18.1897	0.1023	2024/8/27 9:36	2024/8/28 9:36	1440.0	46	46	1.27	1824	56
												Maximum	61	
												Minimum	40	
												Average	50	
												Action Level	182	
												Limit Level	260	

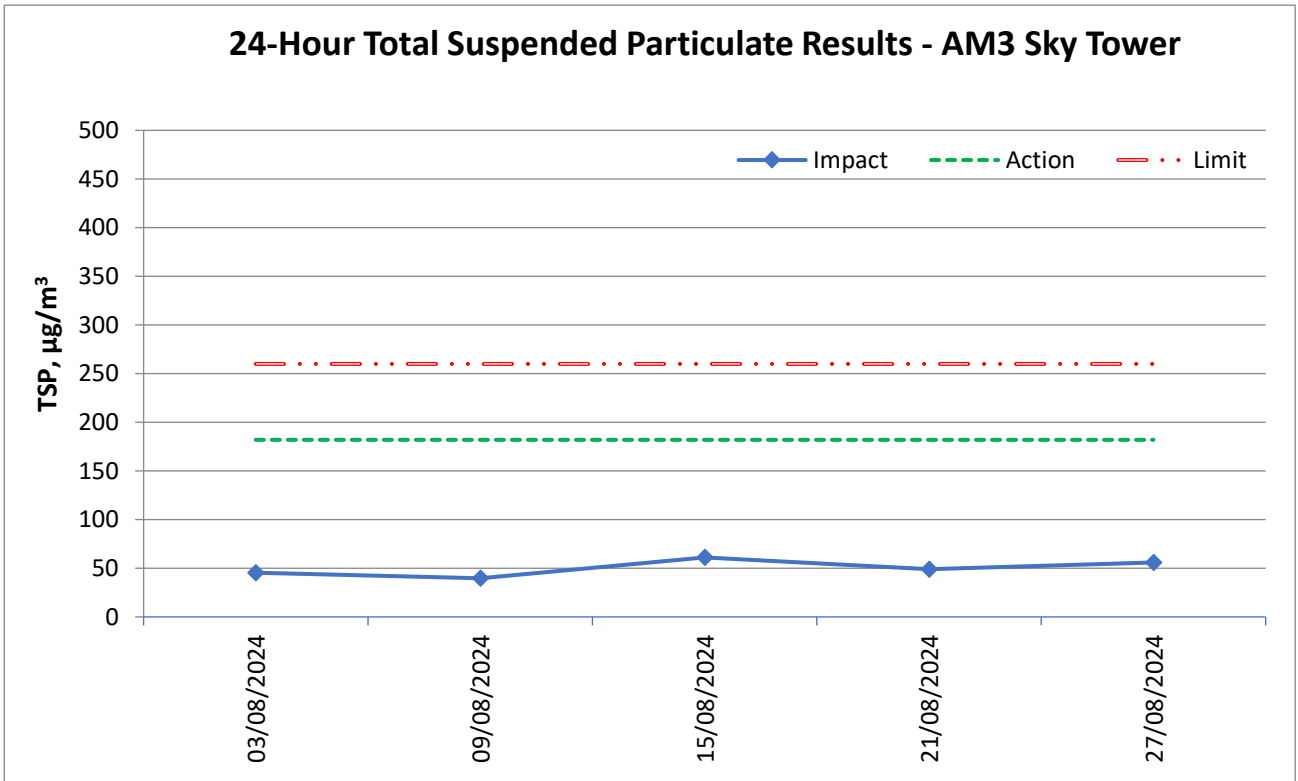
Location: AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A) ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

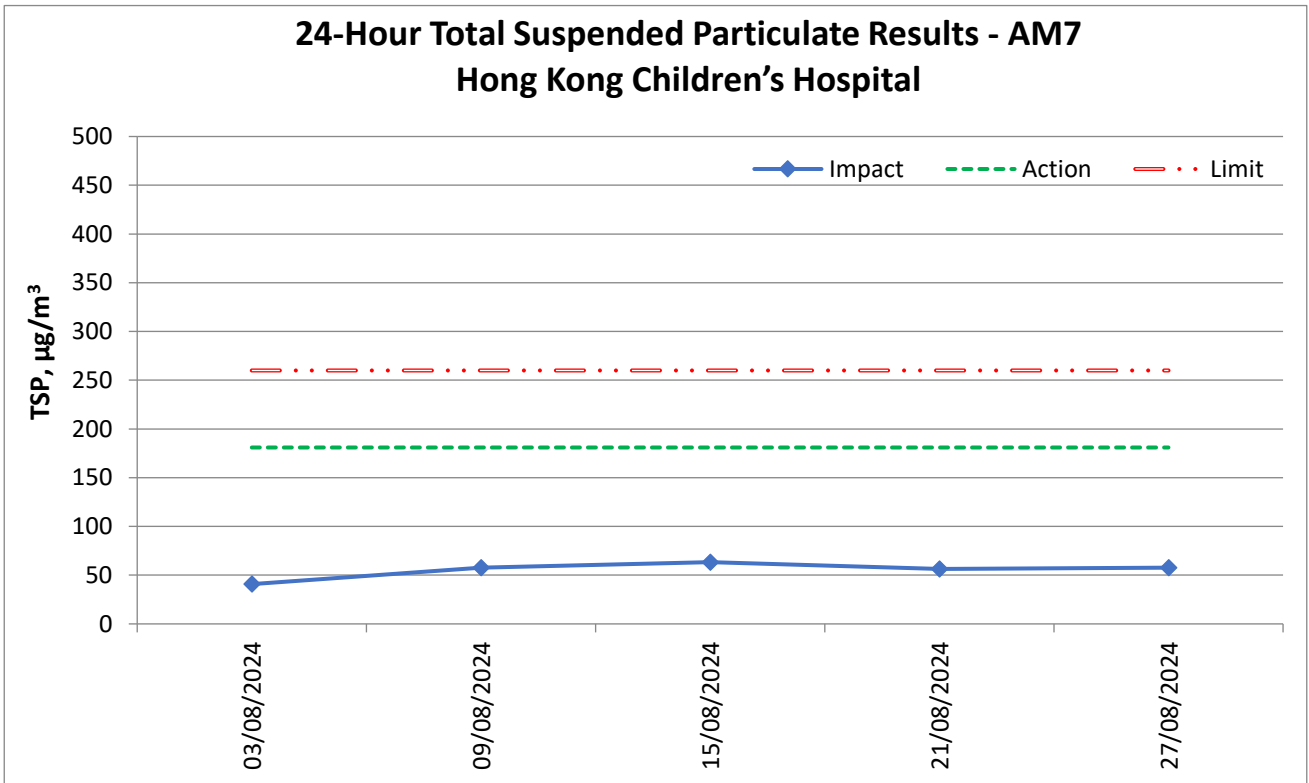
Location: AM7 – Hong Kong Children’s Hospital

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
03/08/2024	Sunny	34.6	1008.7	15.3046	15.3799	0.0753	2024/8/3 9:28	2024/8/4 9:28	1440.0	46	46	1.28	1845	41
09/08/2024	Sunny	32.2	1005.6	15.3362	15.4561	0.1199	2024/8/9 13:39	2024/8/10 13:39	1440.0	51	51	1.44	2078	58
15/08/2024	Cloudy	30.6	1005.2	18.1561	18.2855	0.1294	2024/8/15 9:27	2024/8/16 9:27	1440.0	50	50	1.42	2042	63
21/08/2024	Cloudy	28.5	1009.8	18.2196	18.3305	0.1109	2024/8/21 13:28	2024/8/22 13:28	1440.0	48	48	1.37	1971	56
27/08/2024	Sunny	31.5	1005.4	15.2615	15.3746	0.1131	2024/8/27 9:40	2024/8/28 9:40	1440.0	48	48	1.36	1957	58
													Maximum	63
													Minimum	41
													Average	55
													Action Level	181
													Limit Level	260

24-hour average TSP



Note: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. No 24-TSP monitoring was conducted at AM4(A). ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.



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

Location:
**AM3 -
 Sky Tower**

Date	Measurement Period			1-hr TSP concentration, g/m ³	Weather
03/08/2024	9:00	-	10:00	37	Sunny
	10:00	-	11:00	40	
	11:00	-	12:00	41	
09/08/2024	13:00	-	14:00	31	Sunny
	14:00	-	15:00	33	
	15:00	-	16:00	34	
15/08/2024	9:00	-	10:00	54	Cloudy
	10:00	-	11:00	54	
	11:00	-	12:00	50	
21/08/2024	13:00	-	14:00	36	Cloudy
	14:00	-	15:00	36	
	15:00	-	16:00	42	
27/08/2024	9:00	-	10:00	57	Sunny
	10:00	-	11:00	64	
	11:00	-	12:00	64	
Maximum				64	
Minimum				31	
Average				45	
Action Level				297	
Limit Level				500	

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

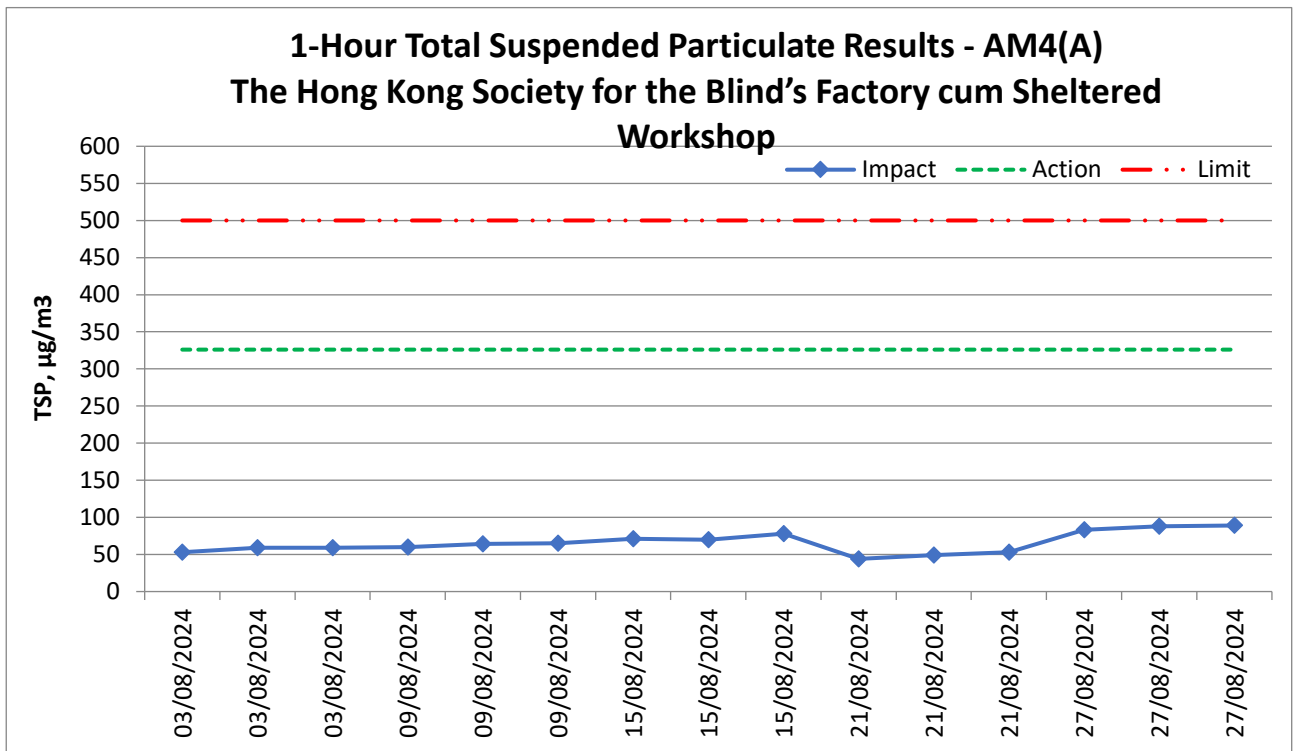
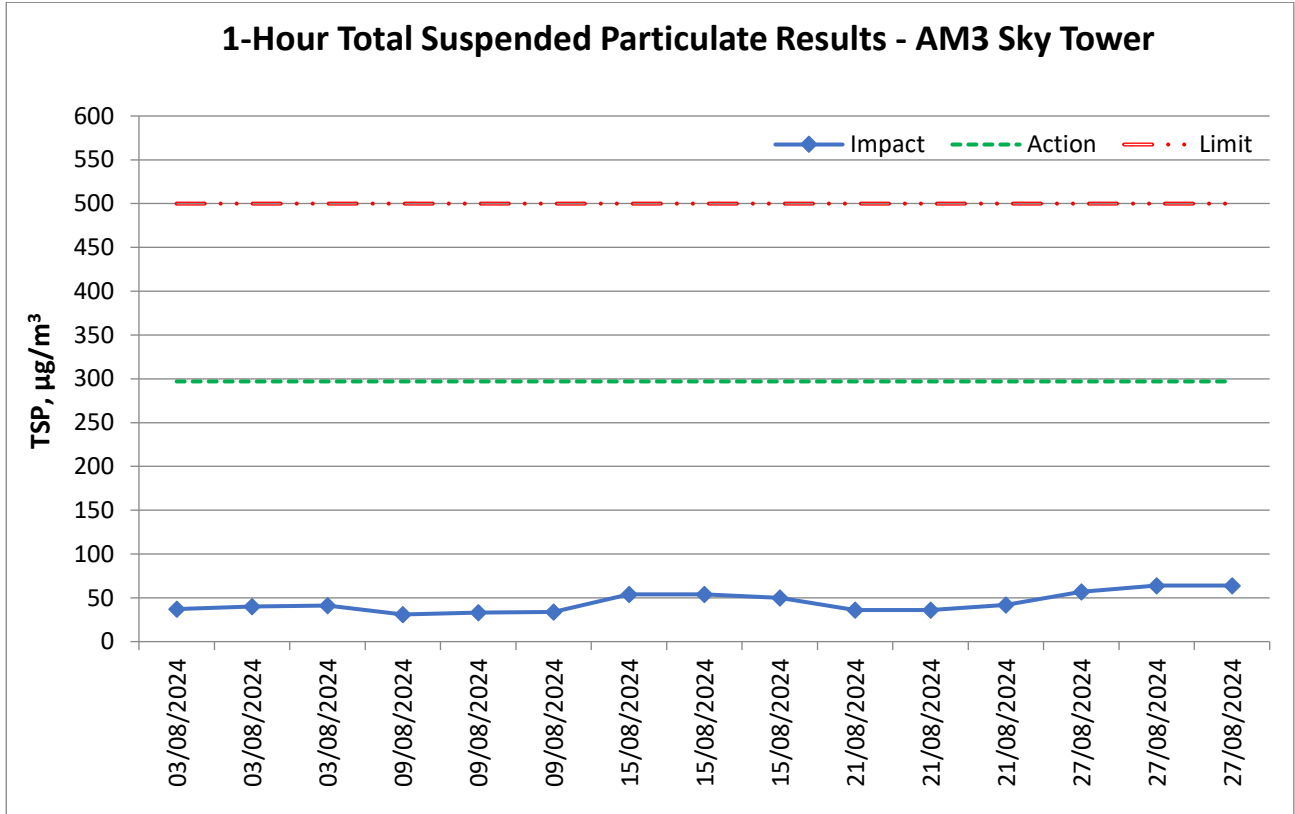
Date	Measurement Period			1-hr TSP concentration, $\mu\text{g}/\text{m}^3$	Weather
03/08/2024	13:00	-	14:00	53	Sunny
	14:00	-	15:00	59	
	15:00	-	16:00	59	
09/08/2024	9:00	-	10:00	60	Sunny
	10:00	-	11:00	64	
	11:00	-	12:00	65	
15/08/2024	13:00	-	14:00	71	Cloudy
	14:00	-	15:00	70	
	15:00	-	16:00	78	
21/08/2024	9:00	-	10:00	44	Cloudy
	10:00	-	11:00	49	
	11:00	-	12:00	53	
27/08/2024	14:45	-	15:45	83	Sunny
	15:45	-	16:45	88	
	16:45	-	17:45	89	
Maximum				89	
Minimum				44	
Average				66	
Action Level				326	
Limit Level				500	

NOTE: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hr TSP monitoring at AM4(A) were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

Location:
AM7 -
Hong Kong
Children's
Hospital

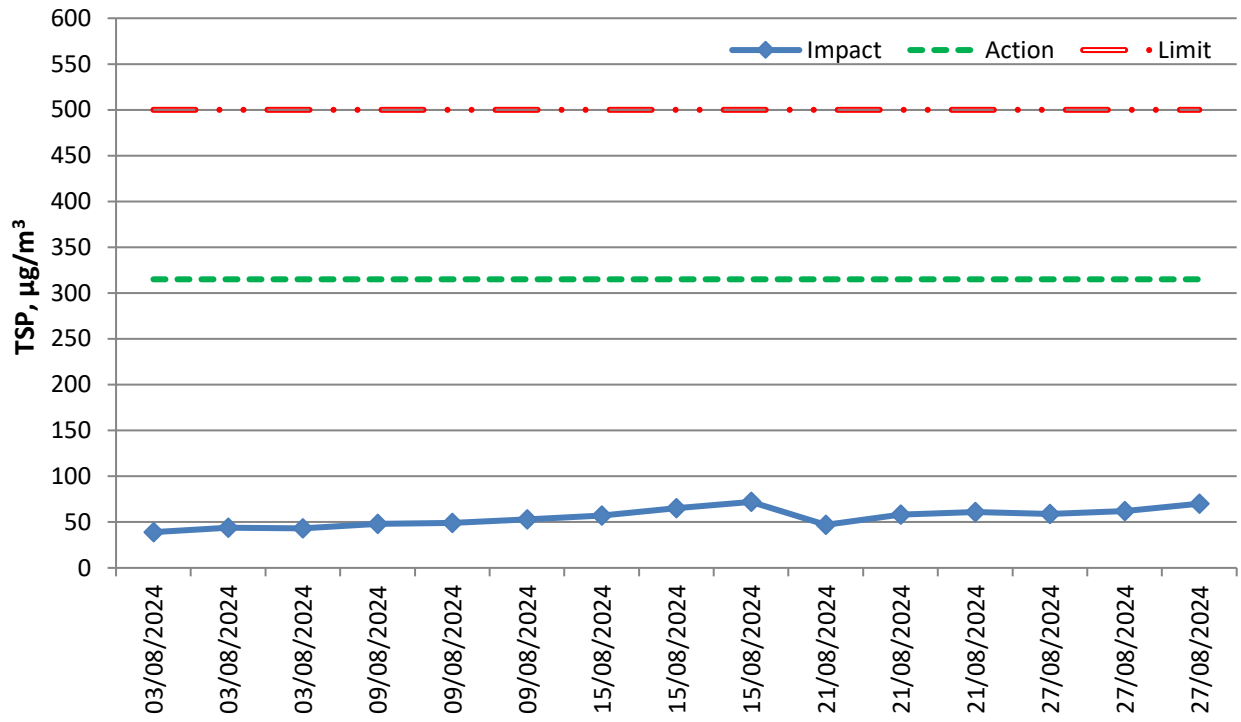
Date	Measurement Period			1-hr TSP concentration, $\mu\text{g}/\text{m}^3$	Weather
03/08/2024	9:00	-	10:00	39	Sunny
	10:00	-	11:00	44	
	11:00	-	12:00	43	
09/08/2024	13:00	-	14:00	48	Sunny
	14:00	-	15:00	49	
	15:00	-	16:00	53	
15/08/2024	9:00	-	10:00	57	Cloudy
	10:00	-	11:00	65	
	11:00	-	12:00	72	
21/08/2024	13:00	-	14:00	47	Cloudy
	14:00	-	15:00	58	
	15:00	-	16:00	61	
27/08/2024	9:30	-	10:30	59	Sunny
	10:30	-	11:30	62	
	13:00	-	14:00	70	
Maximum				72	
Minimum				39	
Average				55	
Action Level				315	
Limit Level				500	

1-hour average TSP



NOTE: Due to the relocation of The Hong Kong Society for the Blind's Factory cum Sheltered Workshop (AM4(A)), the premises owner rejected ET to conduct impact monitoring since 1 Sept 2022. 1-hr TSP monitoring at AM4(A) were conducted on the ground floor with orienting to the Project site. ET will resume the impact monitoring once the alternative monitoring location for AM4(A) is confirmed.

1-Hour Total Suspended Particulate Results - AM7 Hong Kong Children's Hospital



Appendix J – Event and Action Plan for air quality

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

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results.	on the effectiveness of the proposed remedial measures.	4. Implemented; Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	within three working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, Supervisor /ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, Supervisor /ER and Contractor to discuss the remedial action to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results; 7. If exceedance stop, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with Supervisor /ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposal for remedial actions to Supervisor /ER and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.

Appendix K – Calibration certificates, catalogue of noise monitoring equipment

Catalogue of Sound Level Meter

Specifications

	NL-52	NL-42
Applicable standards	IEC 61672-1: 2002 Class 1 ANSI S1.4-1983 Type 1 ANSI S1.4A-1985 Type 1 ANSI S1.43-1997 Type 1 JIS C 1509-1: 2005 Class 1	IEC 61672-1: 2002 Class 2 ANSI S1.4-1983 Type 2 ANSI S1.4A-1985 Type 2 ANSI S1.43-1997 Type 2 JIS C 1509-1: 2005 Class 2
Measurement functions	Simultaneous measurement of the following items, with selected time weighting and frequency weighting WEEE Directives, Chinese RoHS (export model for China only)	
Processing (main ch)	Instantaneous sound pressure level: L_p Equivalent continuous sound pressure level: L_{eq} Sound exposure level: L_E Maximum sound pressure level: L_{max} Minimum sound pressure level: L_{min} Percentage sound levels: L_N (0.1 to 99.9%, 0.1-increment steps, max. 5 values)	
Processing (sub ch)	Instantaneous sound pressure level: L_p	
Additional processing	In addition to main processing items, one of the following can be selected for simultaneous processing: C-weighted equivalent continuous sound level: L_{Ceq} C-weighted peak sound level: L_{Cpeak} Z-weighted peak sound level: L_{Zpeak} 1-time-weighted equivalent continuous sound level: L_{A1eq}^{*2} Maximum 1-time-weighted equivalent continuous sound level: L_{A1max}^{*2} The power average of the maximum level of each 5 second interval: L_{A1a5} 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_{A1a5} can be selected. When C-weighting (Z-weighting) is selected, the additional processing L_{Ceq} and L_{Cpeak} (L_{Zpeak}) are selectable.	
Measuring time	10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h)	
Microphone	Type UC-59 UC-52 Sensitivity level -27 dB -33 dB	
Measurement range	A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB Z-weighting: 38 dB to 138 dB C-weighting peak sound level: 55 dB to 141 dB Z-weighting peak sound level: 60 dB to 141 dB	
Inherent noise	A-weighting 17 dB or less C-weighting 25 dB or less Z-weighting 30 dB or less	19 dB or less 27 dB or less 32 dB or less
Frequency range	20 Hz to 20 kHz	20 Hz to 8 kHz
Frequency weighting	A, C, and Z	
Time weighting	F (Fast) and S (Slow)	
Level range	Single range (Linearity range: 113 dB) Bar graph display range max. 110 dB (20 to 130 dB) Switching of bar graph display Set the upper/lower limit in 10 dB increments.	
RMS detection circuit	Digital processing method	
Sampling cycle	20.8 μ s (L_p , L_{eq} , L_E , L_{max} , L_{min} , L_{peak} : sampling frequency: 48 kHz) 100 ms (L_N)	
Calibration	Measurement Law: electrical calibration performed according to IEC and JIS standards, using internally generated signals; acoustic calibration performed with the NC-74.	
Correction functions	Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed. Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.	
Delay time	The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.	
Back erase function	When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.	
Display	Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel) Numerical display update frequency: 1 s Bar graph update frequency: 100 ms	
Store	Manual Number of data Internal memory: max. 1000 sets SD Card: depends on the capacity of the SD Card *1	Auto *2 Instantaneous values (L_p mode) and processed values (L_{eq} mode) are stored continuously and automatically at preset intervals. LP sampling cycle 100 ms, 200 ms, 1 s, L_{eq} 1s Leq sampling cycle 10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h Measurement Time Max. 1000 h (depends on the capacity of the SD Card) *1

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

Distributed by:

This product is environment-friendly. It does not include toxic chemicals on our policy.
This product is certified as an International Protection rating of IP54 (dust protected and resistant to splashing water).
This leaflet is printed with environmentally friendly vegetable-based ink on recycled paper.

1011-4 212 P.D

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

Options

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

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

Precautions regarding waterproofing

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




RION CO., LTD.
http://www.rion.co.jp/english/

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

Calibration Certificate of Sound Level Meter

AAST-SLM-10
cal Date: 29 July 2024






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: 2HB24001410-0001
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.	00976203		
管理号: Asset No.	AAST-SLM-10		
接收日期: Rec. Date	2024-07-18	校准日期: Cal. Date	2024-07-29
签发日期: App. Date	2024-07-30	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

校验:
Inspected by

钟灏 钟灏



扫一扫查真伪

签发:
Approved by

郑木力 郑木力

印章:
Stamp

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

CEPREI Calibration and Testing Centre
HQ Addr: No.78,Zhuocun Avenue West,Zengcheng District,Guangzhou,China
Add. of the Lab: No.78,Zhuocun Avenue West,Zengcheng District,Guangzhou,China
Service Tel: 020-87237633 Fax: 020-87236189
Complaint Tel: 020-87236896
Email: cal@ceprei.com
Website: www.ceprei-cal.com

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证书编号(Certificate No.): 2HB24001410-0001

说明 DIRECTIONS

- 本机构是国家市场监督管理总局授权建立的法定计量检定机构;“国家环境综合试验设备计量站”,国家国防科工局授权建立的“国防科技工业4412二级计量站”,本机构质量管理体系符合ISO/IEC 17025:2017标准的要求。
This laboratory is the legal metrological institute authorized by the State Administration for Market Regulation. It is the "Nation Metrology Station of Combined Environmental Testing Equipment". It is the "No. 4412 Class 2 Metrology Station of Science, Technology and Industry for National Defense" authorized by the State Administration of Science, Technology and Industry for National Defense. The quality management system of this laboratory is in accordance with the ISO/IEC 17025:2017.
- 本证书中的数据可溯源到国际单位制(SI)单位和/或社会公用计量标准。
The data of the certificate is traceable to the International system of Units (SI) and/or the public metrological standards.
- 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.)
- 本次校准所使用的主要测量标准及溯源性声明(The main measurement standards used during the calibration and traceability declaration):

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(2239842)	LSs2024-02588/2025-03-12/中国计量院	频率响应: ±0.1dB	10Hz~50kHz
声校准器(2218291)	4GC23001017-0005/2025-01-29/赛宝(广州)	1级	94dB, 124dB@ (1000 Hz)
数字多用表(3146A63487)	4GC23000695-0001/2024-10-25/赛宝(广州)	直流电压: ±0.01%; 直流电流: ±0.01%; 交流电压: ±0.1%; 电阻: ±0.01%; 频率: ±0.01%	10mV~100V (10Hz~200 kHz)
功率放大器(2536312)	4GC23000907-0001/2024-12-14/赛宝(广州)	失真度: ≤0.2%; 频率响应: ±0.2dB	20Hz~50kHz
PULSE分析系统(3160-100186)	GFJGJL1001231007106/2024-10-24/航空304所	频率: U ₁₀ =0.001%, k=2; 电压: U ₁₀ =0.10%, k=2	频率: 0.001Hz~51.2kHz, 电压: (1~10 ⁻⁵ ~30V)
正弦信号发生器(243165)	SXE202301878/2024-11-21/广东计量院	频率响应MPE±0.1dB	10Hz~50kHz
信号发生器(389052)	4GC24000402-0001/2025-05-13/赛宝(广州)	1.衰减器: 10dB改变量±0.05dB, 1dB改变量±0.02dB; 2.频率响应: 10Hz~0.1dB改变量±0.01dB; 3.失真度: 频率响应±0.1dB; 4.频率±0.25%; 5.猝发音, 持续时间±1%	1.衰减器: (0~80) dB; 2.频率响应: 10Hz~20kHz, 3.频率: 10Hz~20kHz, 4.猝发音, 持续时间 (0.25~2000) ms
耦合腔(3081703)	SXE202483019/2026-02-04/广东计量院	失真度: <2%; 耦合腔一致性: ±0.3dB, 短期漂移: <0.5dB, 工作有效声压级: ≥80dB	10Hz~20kHz
实验室标准传声器(2246093)	GFJGJL1001240306537/2025-03-17/航空304所	LS级	10Hz~25kHz

计量溯源性声明(Metrological Traceability Declaration):

被校准器具 Instrument	设备名称 Standard Name	外部机构/溯源证书编号 Institute/Certificate No.
Sound Level Meter	前置放大器	中国计量院/LSs2024-02588
	声校准器	航空304所/GFJGJL1001230304185
	数字多用表	广东计量院/DBN202260767
	功率放大器	航空304所/GFJGJL1001231007106
	PULSE分析系统	航空304所/GFJGJL1001231007106
	正弦信号发生器	广东计量院/SXE202301878
信号发生器	航天514所/GFJGJL1004240400235	
耦合腔	广东计量院/SXE202483019	

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Calibration Certificate of Sound Level Meter

Sound Level Meter 实验室标准传声器 航空304所/GFJGIL1001240306537

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): 23.3°C 相对湿度(Relative Humidity): 66% 其它(Other): /

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。
The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1.本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2.本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)

3.“委托方”、“委托方联络信息”由委托方提供, “制造商”、“型号规格”、“出厂编号”以及“设备编号”为仪器上标注, 委托方对上面内容如有异议, 须在收到证书后二十个工作日内提出。

The information Client and Contact Information are provided by client, and the Manufacturer, Model/Type, Serial No. and Equipment No. are marked on the items. Client shall submit any objection within 20 working days after receiving the certificate for the information above.



证书编号(Certificate No.): 2HB24001410-0001

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

无影响证书中测量结果准确度的因素和缺陷。

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

2 指示声级调整 (Indication SPL Calibration)

传声器型号 (Microphone Type)	传声器编号 (Microphone SN.)	放大器型号 (Preamplifier Type)	频率(Frequency)=1000Hz 放大器编号 (Preamplifier SN.)
/	/	/	/

声校准器型号 (Calibrator Type)	标准声压级 (Reference SPL) (dB)	调整前示值 (Before Adjust) (dB)	调整后示值 (After Adjust) (dB)
4231	94.0	94.0	94.0

3 级线性 (Level Linearity)

3.1 参考级量程 (Reference Range)

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 (dB)
130.0	130.1	0.1	±0.8	P	0.3
129.0	129.1	0.1	±0.8	P	0.3
128.0	128.1	0.1	±0.8	P	0.3
127.0	127.1	0.1	±0.8	P	0.3
126.0	126.0	0.0	±0.8	P	0.3
125.0	125.0	0.0	±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	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	35.2	0.2	±0.8	P	0.3
34.0	34.2	0.2	±0.8	P	0.3
33.0	33.2	0.2	±0.8	P	0.3
32.0	32.2	0.2	±0.8	P	0.3
31.0	31.2	0.2	±0.8	P	0.3
30.0	30.2	0.2	±0.8	P	0.3

Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB24001410-0001

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	130.1	0.1	±0.8	P	0.3
129.0	129.1	0.1	±0.8	P	0.3
128.0	128.1	0.1	±0.8	P	0.3
127.0	127.1	0.1	±0.8	P	0.3
126.0	126.0	0.0	±0.8	P	0.3
125.0	125.0	0.0	±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	99.9	-0.1	±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	39.9	-0.1	±0.8	P	0.3
35.0	35.1	0.1	±0.8	P	0.3
34.0	34.1	0.1	±0.8	P	0.3
33.0	33.1	0.1	±0.8	P	0.3
32.0	32.1	0.1	±0.8	P	0.3
31.0	31.1	0.1	±0.8	P	0.3
30.0	30.1	0.1	±0.8	P	0.3

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证书编号(Certificate No.): 2HB24001410-0001

4 A计权特性(A-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	U (dB)
10	-70.8	-70.4	-0.4	-∞ ~ 3.0	P	0.5
16	-57.0	-56.7	-0.3	-4.0 ~ 2.0	P	0.5
31.5	-39.7	-39.4	-0.3	±1.5	P	0.5
63	-26.1	-26.2	0.1	±1.0	P	0.5
125	-16.1	-16.1	0.0	±1.0	P	0.5
250	-8.9	-8.6	-0.3	±1.0	P	0.5
500	-3.4	-3.2	-0.2	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
2000	1.1	1.2	-0.1	±1.0	P	0.6
4000	0.7	1.0	-0.3	±1.0	P	0.6
8000	-1.0	-1.1	0.1	-2.5 ~ 1.5	P	0.6
16000	-7.6	-6.6	-1.0	-16.0 ~ 2.5	P	1.0
20000	-14.4	-9.3	-5.1	-∞ ~ 3.0	P	1.0

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 (dB)
10	-14.8	-14.3	-0.5	-∞ ~ 3.0	P	0.5
16	-8.9	-8.5	-0.4	-4.0 ~ 2.0	P	0.5
31.5	-3.2	-3.0	-0.2	±1.5	P	0.5
63	-1.1	-0.8	-0.3	±1.0	P	0.5
125	-0.2	-0.2	0.0	±1.0	P	0.5
250	0.0	0.0	0.0	±1.0	P	0.5
500	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
4000	-0.8	-0.8	0.0	±1.0	P	0.6
8000	-2.9	-3.0	0.1	-2.5 ~ 1.5	P	0.6
16000	-10.0	-8.5	-1.5	-16.0 ~ 2.5	P	1.0
20000	-16.4	-11.2	-5.2	-∞ ~ 3.0	P	1.0

6 自生噪声 (Autogenous noise)

计权 (Weighting)	实测值 (Actual) (dB)
A	19.6

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Calibration Certificate of Sound Level Meter



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

校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB24001410-0002 Certificate No.



委托单位: Castco Testing Centre Limited
仪器名称: Sound Level Meter
型号规格: NL-52
制造商: Rion
机身号: 00976204
管理号: AAST-SLM-11
接收日期: 2024-07-18 校准日期: 2024-07-29
签发日期: 2024-07-30 建议校准周期: 12个月(12 months)
结论: 所校准项目符合技术要求(The calibrated items meet the technical requirements)

校准: 赵文钰
签发: 郑木力

检验: 钟灏
印章: [Stamp]



赛宝计量检测中心
总部地址: 广州市增城区朱村街东村大道西78号
实验室地址: 广州市增城区朱村街东村大道西78号

CEPREI Calibration and Testing Centre
HQ Addr: No.78,Zhuacan Avenue West,Zengcheng District,Guangzhou,China
Add of the Lab: No.78,Zhuacan Avenue West,Zengcheng District,Guangzhou,China

证书编号(Certificate No.): 2HB24001410-0002

说明 DIRECTIONS

- 1. 本机构是国家市场监督管理总局授权建立的法定计量检定机构; "国家环境综合试验设备计量站", 国家国防科工局授权建立的"国防科技工业4412二级计量站", 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求。
2. 本证书中的数据可溯源到国际单位制(SI)单位和/或社会公用计量标准。
3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):
4. 本次校准所使用的主要测量标准及溯源性声明(The main measurement standards used during the calibration and traceability declaration):

Table with 4 columns: Name (名称), Certificate No./Due Date/Traceability to, Technical Indicators (技术指标), and Measuring Range (测量范围). Rows include items like 前置放大器, 声校准器, 数字多用表, 功率放大器, PULSE分析系统, 正弦信号发生器, 信号发生器, 耦合腔, and 实验室标准传声器.

计量溯源性声明(Metrological Traceability Declaration):

Table with 3 columns: Instrument (被校准器具), Standard Name (设备名称), and Institute/Certificate No. (外部机构/溯源证书编号). Rows include 前置放大器, 声校准器, 数字多用表, 功率放大器, PULSE分析系统, 正弦信号发生器, 信号发生器, 耦合腔.

Calibration Certificate of Sound Level Meter

Sound Level Meter 实验室标准传声器 航空304所/GFJGJL1001240306537

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): 23.3°C 相对湿度(Relative Humidity): 66% 其它(Other): /

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。
The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1. 本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2. 本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)

3. “委托方”、“委托方联络信息”由委托方提供, “制造商”、“型号规格”、“出厂编号”以及“设备编号”为仪器上标注, 委托方对上面内容如有异议, 须在收到证书后二十个工作日内提出。

The information Client and Contact Information are provided by client, and the Manufacturer, Model/Type, Serial No. and Equipment No. are marked on the items. Client shall submit any objection within 20 working days after receiving the certificate for the information above.



证书编号(Certificate No.): 2HB24001410-0002

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)	调整前示值 (Before Adjust) (dB)	调整后示值 (After Adjust) (dB)
4231	94.0	94.4	94.0

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	129.9	-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	119.9	-0.1	±0.8	P	0.3
110.0	110.0	0.0	±0.8	P	0.3
100.0	100.0	0.0	±0.8	P	0.3
90.0	90.0	0.0	±0.8	P	0.3
80.0	79.9	-0.1	±0.8	P	0.3
70.0	69.9	-0.1	±0.8	P	0.3
60.0	60.0	0.0	±0.8	P	0.3
50.0	49.9	-0.1	±0.8	P	0.3
40.0	39.9	-0.1	±0.8	P	0.3
35.0	34.8	-0.2	±0.8	P	0.3
34.0	33.8	-0.2	±0.8	P	0.3
33.0	32.9	-0.1	±0.8	P	0.3
32.0	31.8	-0.2	±0.8	P	0.3
31.0	30.8	-0.2	±0.8	P	0.3
30.0	29.8	-0.2	±0.8	P	0.3


Calibration Certificate of Sound Level Meter


证书编号(Certificate No.): 2HB24001410-0002

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)	<i>U</i> (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	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	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	32.8	-0.2	±0.8	P	0.3
32.0	31.8	-0.2	±0.8	P	0.3
31.0	30.8	-0.2	±0.8	P	0.3
30.0	29.8	-0.2	±0.8	P	0.3

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4 A计权特性(A-Weighting Characteristic)

频率 (Frequency) (Hz)	实测值 (Actual) (dB)	理论值 (Theoretical value) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	<i>U</i> (k=2) (dB)
10	-70.8	-70.4	-0.4	-∞ ~ 3.0	P	0.5
16	-57.0	-56.7	-0.3	-4.0 ~ 2.0	P	0.5
31.5	-39.5	-39.4	-0.1	±1.5	P	0.5
63	-26.3	-26.2	-0.1	±1.0	P	0.5
125	-16.2	-16.1	-0.1	±1.0	P	0.5
250	-8.8	-8.6	-0.2	±1.0	P	0.5
500	-3.4	-3.2	-0.2	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
2000	1.1	1.2	-0.1	±1.0	P	0.6
4000	0.7	1.0	-0.3	±1.0	P	0.6
8000	-1.0	-1.1	0.1	-2.5 ~ 1.5	P	0.6
16000	-8.7	-6.6	-2.1	-16.0 ~ 2.5	P	1.0
20000	-18.6	-9.3	-9.3	-∞ ~ 3.0	P	1.0

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)	<i>U</i> (k=2) (dB)
10	-14.8	-14.3	-0.5	-∞ ~ 3.0	P	0.5
16	-8.9	-8.5	-0.4	-4.0 ~ 2.0	P	0.5
31.5	-3.2	-3.0	-0.2	±1.5	P	0.5
63	-0.9	-0.8	-0.1	±1.0	P	0.5
125	-0.2	-0.2	0.0	±1.0	P	0.5
250	-0.1	0.0	-0.1	±1.0	P	0.5
500	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
4000	-0.8	-0.8	0.0	±1.0	P	0.6
8000	-2.9	-3.0	0.1	-2.5 ~ 1.5	P	0.6
16000	-10.6	-8.5	-2.1	-16.0 ~ 2.5	P	1.0
20000	-20.5	-11.2	-9.3	-∞ ~ 3.0	P	1.0

6 自生噪声 (Autogenous noise)

加权 (Weighting)	实测值 (Actual) (dB)
A	19.7

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Catalogue of Sound Calibrator

For microphone calibration **NC-74**

How to use

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

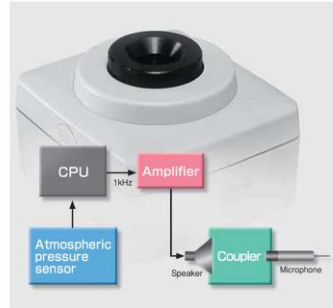


Usage example (NL series)

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

Atmospheric pressure compensation principle

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



Using the 1/2-inch adapter

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



Specifications

Applicable standards	IEC 60942:2003 Class 1 JIS C 1515:2004 Class 1	
Suitable microphones	1-inch microphones	IEC 61094-1 Type LS1P UC-27 UC-25 UC-34
	1/2-inch microphones	IEC 61094-1 Type LS2AP UC-59 UC-57 UC-58A UC-56 UC-30 UC-31 UC-33P
Nominal sound pressure level	94 dB	
Sound pressure level tolerance	±0.3 dB	
Nominal frequency	1 kHz	
Frequency tolerance	±1.0 % or less	
Power requirements	IEC LR6 (size AA) alkaline battery X 2	
Dimensions, mass	Approx. 49 (H) X 80 (W) X 74 (D) mm Approx. 200 g (including batteries)	
Supplied accessories	Case X 1	
	IEC LR6 (size AA) alkaline battery X 2 1/2-inch microphone adapter NC-74-002 X 1	

* Specification subject to change without notice.

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



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

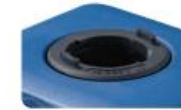


Usage example

How to use the adapter

1-inch microphones

To use the sound calibrator with 1-inch diameter microphones, remove the 1/2-inch microphone adapter.



1/2-inch microphones

To use the sound calibrator with 1/2-inch diameter microphones, the supplied 1/2-inch microphone adapter must be in place.



Make sure the 1/2-inch adapter is locked.

1/4-inch microphones

To use the sound calibrator with 1/4-inch diameter microphones, use the supplied 1/2-inch microphone adapter together with the optional 1/4-inch adapter.



Specifications (under standard ambient conditions*)

Applicable standards	IEC 60942:2017 class 1, ANSI/ASA S1.40-2008 class 1, JIS C 1515:2004 class 1, CE marking, WESEE directive, Chrome Plating
Supported microphones	Microphones made by RION and microphones made by other manufacturers that meet the IEC 61094-4 size specifications 1-inch microphones 1/2-inch microphones (with supplied adapter) 1/4-inch microphones (with optional adapter)
Nominal sound pressure level	94 dB
Sound pressure level tolerance	Max. ±0.30 dB
Operational frequency	1 000 Hz
Frequency tolerance	Max. ±0.5%
THD + noise	Max. 1.0 % (22.4 Hz to 22.4 kHz)
Dimensions and weight	Approx. 49 mm (H) x 77 mm (W) x 70 mm (D), approx. 200 g
Power supply	IEC LR6 (size AA) alkaline battery x 2
Battery life	IEC LR6 (size AA) nickel-hydrate rechargeable battery ("eneloop pro" supported) x 2
	50 hours or more (using two alkaline batteries, continuous use) 50 hours or more (using two nickel-hydrate rechargeable batteries (eneloop pro), continuous use)
Supplied accessories	Soft case x 1, 1/2-inch microphone adapter x 1, IEC LR6 (size AA) alkaline battery x 2, hand strap x 1, JCSS Calibration Certificate x 1
* RION standard ambient conditions: static pressure 101.325 kPa, ambient temperature 23°C, relative humidity 50 %	
Optional accessories	1/4-inch microphone adapter NC-75-011

Strap



Securely carry the unit with the supplied hand strap.

Soft case



Calibration can be performed with the calibrator inserted in the soft case.

PISTONPHONE NC-72A



Specifications (under standard ambient conditions*)

Applicable standards	IEC 60942:2017 class LS/M, class 1/M, JIS C 1515:2004 class L/S/C, class 1/C
Nominal sound pressure level	114.05, Sound pressure level tolerance ±0.10 dB



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

RION CO., LTD. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and issues its accreditation scheme an ISO/IEC 17025. JCSS is operated by the accreditation body (in Japan) which is a regulatory body (in the Asia Pacific region) of the International Cooperation (IAPAC) as well as the International Calibration Accreditation Cooperation (IAPAC). The Quality Assurance Section of RION CO., LTD. is an International ISO-compliant JCSS operator with the accreditation number: JCSS 0197.

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



This product is environment-friendly. It does not include toxic chemicals on our policy.
This wallet is printed with environmentally friendly UV-ink.

RION CO., LTD.
<https://rion-sv.com/>

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



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

Calibration Certificate of Sound Calibrator



证书编号(Certificate No.): 2HB23001715-0002

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	93.90	0.10	≤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	1000.0	0.00	≤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	0.60	≤2.50	P	5.0


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CEPREI

数据页(Data sheet) ID: 013393

第 5 页,共 5 页
Page of


AAST-SLC-05
 Cal Date: 30 July 2024





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: 2HB24001410-0003
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 Calibrator		
型号规格: Model/Type	NC-74		
制造商: Manufacturer	Rion		
机身号: Serial No.	34178129		
管理号: Asset No.	AAST-SLC-05		
接收日期: Rec. Date	2024-07-18	校准日期: Cal. Date	2024-07-30
签发日期: App. Date	2024-07-31	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

郑木力 郑木力

核验:
Inspected by

钟灏 钟灏

印章:
Stamp



扫一扫查真伪

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

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

第 1 页,共 4 页
Page of

Calibration Certificate of Sound Calibrator

证书编号(Certificate No.): 2HB24001410-0003

说明 DIRECTIONS

1. 本机构是国家市场监督管理总局授权建立的法定计量检定机构：“国家环境综合试验设备计量站”，国家国防科工局授权建立的“国防科技工业4412二级计量站”，本机构质量管理体系符合ISO/IEC 17025:2017标准的要求。

This laboratory is the legal metrological institute authorized by the State Administration for Market Regulation. It is the "Nation Metrology Station of Combined Environmental Testing Equipment". It is the "No. 4412 Class 2 Metrology Station of Science, Technology and Industry for National Defense" authorized by the State Administration of Science, Technology and Industry for National Defense. The quality management system of this laboratory is in accordance with the ISO/IEC 17025:2017.

2. 本证书中的数据可溯源到国际单位制(SI)单位和/或社会公用计量标准。

The data of the certificate is traceable to the International system of Units (SI) and/or the public metrological 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及溯源性声明(The main measurement standards used during the calibration and traceability declaration):

名称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
实验室标准传声器(2246 093)	GFJGJL1001240306537/2025-03-17/航空304所	LS级	10Hz~25kHz
前置放大器(2239842)	LSx2024-02588/2025-03-12/中国计量院	频率响应: ±0.1dB	10Hz~50kHz
PULSE分析系统(3160-1 00186)	GFJGJL1001231007106/2024-10-24/航空304所	频率: $U_{rel}=0.001\%$, $k=2$; 电压: $U_{rel}=0.10\%$, $k=2$	频率: 0.001Hz~51.2kHz, 电压: $(1 \cdot 10^{-3} \sim 30)V$
数字多用表(3146A63487)	4GC23000695-0001/2024-10-25/赛宝(广州)	直流电压: ±0.01%; 交流电压: ±0.1%; 电阻: ±0.01%; 频率: ±0.01%	10mV~100V (10Hz~200kHz)

计量溯源性声明(Metrological Traceability Declaration):

被校准器具 Instrument	设备名称 Standard Name	外部机构/溯源证书编号 Institute/Certificate No.
Sound Level Calibrator	实验室标准传声器	航空304所/GFJGJL1001240306537
	前置放大器	中国计量院/LSx2024-02588
	PULSE分析系统	航空304所/GFJGJL1001231007106
	数字多用表	广东计量院/DBN202260767

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): 24.2°C 相对湿度(Relative Humidity): 62% 其它(Other): /

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

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



证书编号(Certificate No.): 2HB24001410-0003

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

无影响证书中测量结果准确度的因素和缺陷。

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

2 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	94.06	0.06	≤0.25	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.)	测量频率 (Measured Fre.)	频率误差的绝对值 (Absolute value of Fre.)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} ($k=2$)
(Hz)	(Hz)	(%)	(%)		(%)
1000	1002.1	0.21	≤0.70	P	0.10

4 总失真+噪声 (Distortion and noise)

规定声压级 (Prescribed SPL)	规定频率 (Measured Fre.)	总失真+噪声 (Distortion and noise)	接受限 (Limit)	结论 (Pass/Fail)	U_{rel} ($k=2$)
(dB)	(Hz)	(%)	(%)		(%)
94	1000	0.68	≤2.50	P	5.0

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Catalogue of Air Flow Meter (TSI TA440)

SPECIFICATIONS

THERMAL ANEMOMETERS MODELS TA410, TA430 AND TA440

Velocity

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

Duct Size (TA430, TA440)

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

Volumetric Flow Rate (TA430, TA440)

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

Temperature

Range (TA410, TA430) -18 to 93°C (0 to 200°F)
 Range (TA440) -10 to 60°C (14 to 140°F)
 Accuracy³ ±0.3°C (±0.5°F)
 Resolution 0.1°C (0.1°F)

Relative Humidity (TA440 only)

Range 5 to 95% RH
 Accuracy⁴ ±3% RH
 Resolution 0.1% RH

Wet Bulb Temperature (TA440 only)

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

Dew Point (TA440 only)

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

Instrument Temperature Range

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

Data Storage Capabilities (TA430, TA440)

Range 12,700+ samples and 100 test IDs

Logging Interval (TA430, TA440)

1 second to 1 hour

Specifications subject to change without notice.

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

UK Tel: +44 149 4 450200 Germany Tel: +49 241 523030
 France Tel: +33 491 11 87 64

P/N 2980548 Rev D (A4) ©2014 TSI Incorporated

Time Constant (TA430, TA440)

User selectable

External Meter Dimensions

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

Meter Weight with Batteries

0.27 kg (0.6 lbs.)

Meter Probe Dimensions

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

Articulating Probe Dimensions

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

Power Requirements

Four AA-size batteries or AC adapter

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

¹Temperature compensated over an air temperature range of 5 to 65°C (40 to 150°F).

²The accuracy statement begins at 30 ft/min through 4000 ft/min (0.15 m/s through 20 m/s) for the Model TA410, and 30 ft/min through 6000 ft/min (0.15 m/s through 30 m/s) for Models TA430 and TA440.

³Accuracy with instrument case at 25°C (77°F), add uncertainty of 0.03°C/°C (0.05°F/°F) for change in instrument temperature.

⁴Accuracy with probe at 25°C (77°F). Add uncertainty of 0.2% RH/°C (0.1% RH/°F) for change in probe temperature. Includes 1% hysteresis.

Calibration Certificate of Air Flow Meter



Cal Lab Limited 校正實驗室有限公司

Room 2103, Technology Plaza, 29-35 Sha Tsui Road,
 Tsuen Wan, NT, Hong Kong
 Tel: +852 25680106 Email: info@callab.com.hk
 Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0242312

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.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401232005	AAST-FLOW-02

Certificate Information

Date of Receipt:	15 December 2023	Calibration Condition:	21.3°C, 56%RH, 1014hPa
Date of Calibration:	18 December 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	T93551316004	11 August 2024

Result of Calibration

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

CT-APR-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

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

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

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

Calibrated By:

Wing Cheng

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 19 December 2023

CT-REG-04

*** End of Certificate ***

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

CC0242312

Page 1 of 1

Appendix L – Noise monitoring results and graphical presentation

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

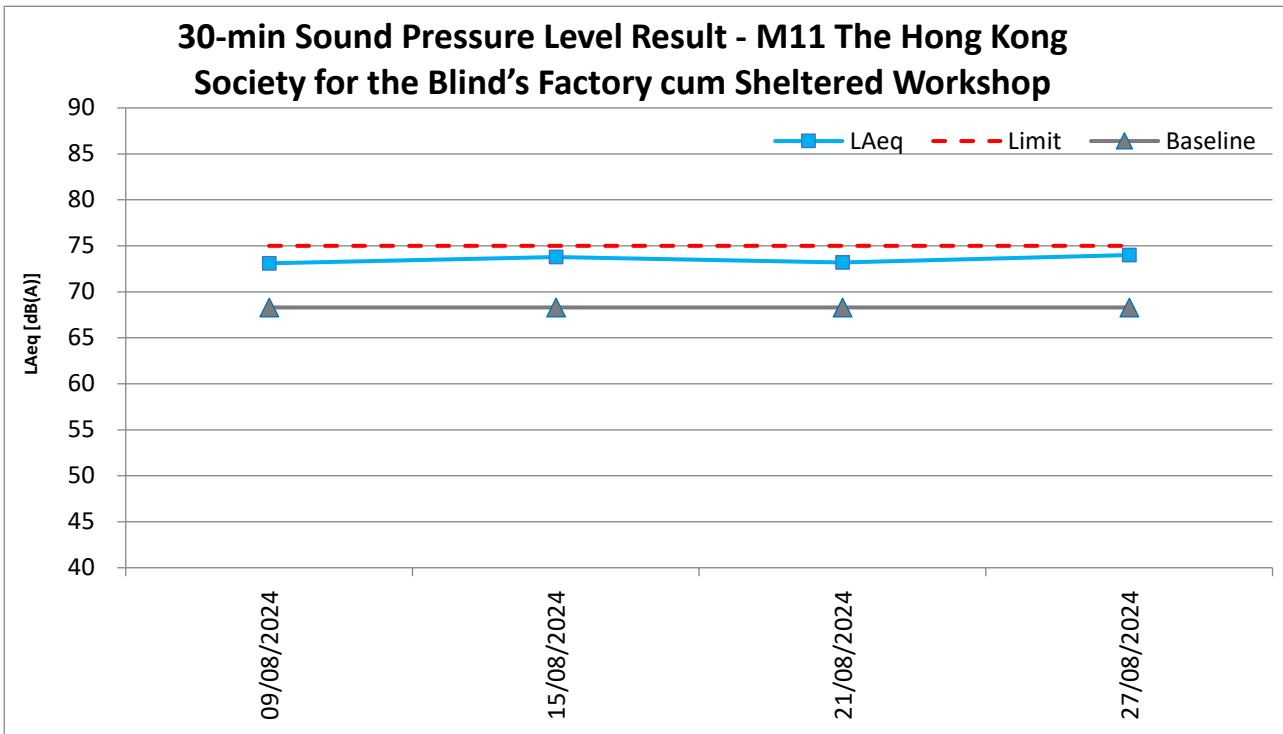
Date	Temp (°C)	Weather	Measured Noise Level at M11, dB(A)						Limit	
			Time		Baseline	L _{Aeq}	L _{A10}	L _{A90}		
09/08/2024	32.2	Sunny	11:09	-	11:39	68.3	73.1	76.7	65.6	75
15/08/2024	30.6	Cloudy	13:28	-	13:58	68.3	73.8	78.1	66.8	75
21/08/2024	28.5	Cloudy	10:11	-	10:41	68.3	73.2	77.4	66.4	75
27/08/2024	31.5	Sunny	15:24	-	15:54	68.3	74.0	77.9	66.1	75
Maximum							74.0			
Minimum							73.1			
Average							73.5			

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

M12 - Hong Kong Children's Hospital

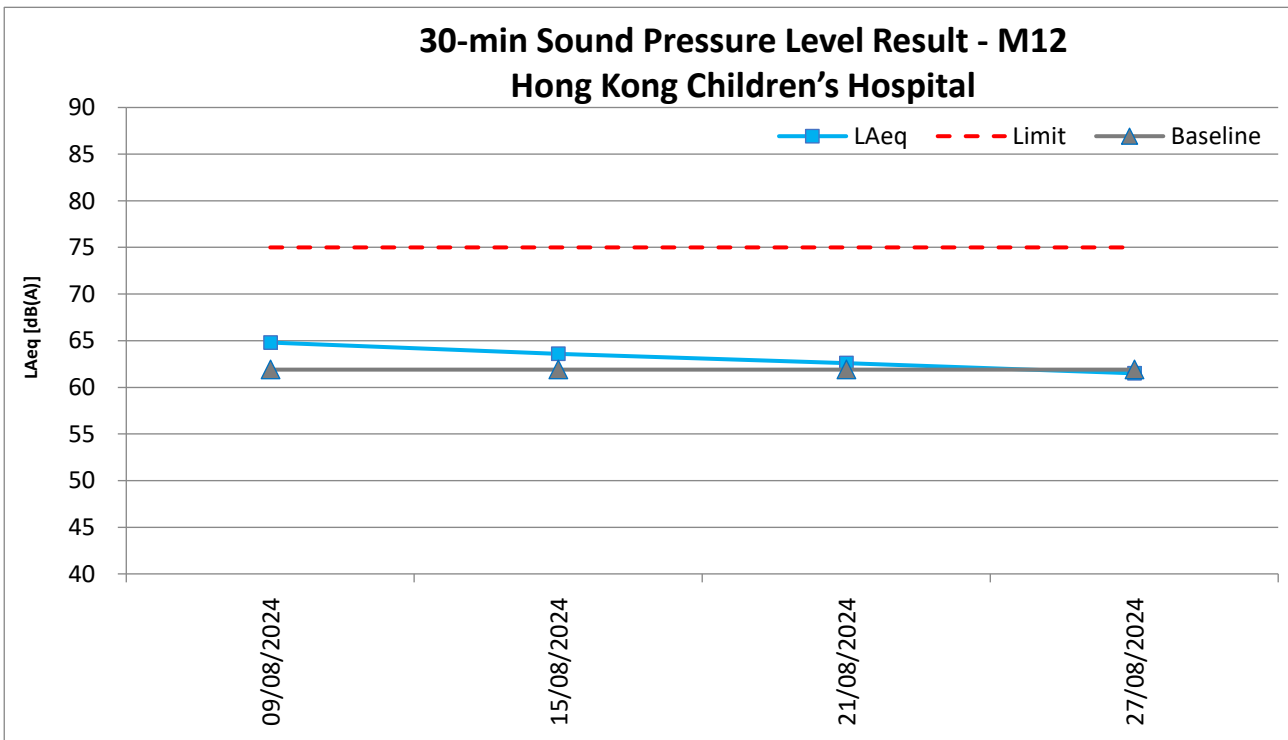
Date	Temp (°C)	Weather	Measured Noise Level at M12, dB(A)						Limit	
			Time		Baseline	L _{Aeq}	L _{A10}	L _{A90}		
09/08/2024	32.2	Sunny	14:18	-	14:48	61.9	64.8	67.1	62.2	75
15/08/2024	30.6	Cloudy	10:07	-	10:37	61.9	63.6	65.2	61.5	75
21/08/2024	28.5	Cloudy	14:44	-	15:14	61.9	62.6	64.3	60.7	75
27/08/2024	31.5	Sunny	9:54	-	10:24	61.9	61.5	62.6	60.1	75
Maximum							64.8			
Minimum							61.5			
Average							63.3			

L_{Aeq}, 30-min graphical results of M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop



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

L_{Aeq}, 30-min graphical results of M12 - Hong Kong Children's Hospital



Appendix M – Event and Action Plan for noise

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify Supervisor / ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, Supervisor / ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly; 3. Advise the Supervisor / ER on the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Submit noise mitigation proposal to IEC and Supervisor / ER; 2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, Supervisor /ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contract's working procedure; 6. Discuss remedial measures required with the IEC, Contractor and Supervisor /ER; 7. Assess effectiveness of 	<ol style="list-style-type: none"> 1. Discuss the potential remedial actions with Supervisor /ER, ET and Contractor; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly. <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and Supervisor /ER within 3 working days of notification; 3. Implement the agreed proposal; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated. <p>(The above actions should be</p>

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

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

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Design Check	<ol style="list-style-type: none"> 1. Check final design conforms to the requirements of EP and prepare report. 	<ol style="list-style-type: none"> 1. Check report. 2. Recommend remedial design if necessary. 	<ol style="list-style-type: none"> 1. Undertake remedial design if necessary. 	
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 4. Monitor remedial actions until rectification has been completed. 	<ol style="list-style-type: none"> 1. Check report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Notify Contractor. 2. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source. 2. Inform IEC and Supervisor /ER. 3. Increase monitoring frequency. 4. Discuss remedial actions with IEC, Supervisor /ER and Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If non-conformity stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring report. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise Supervisor /ER on effectiveness of proposed remedial measures. 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Notify Contractor. 2. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Amend working methods. 2. Rectify damage and undertake any necessary replacement.

Appendix O – Waste Flow Table

Appendix I - Monthly Summary Waste Flow Table

Name of Department: CEDD

Contract No.: ED/2018/01

Monthly Summary Waste Flow Table for August 2024

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	2.311	0.111	--	--	2.311	--	--	--	--	--	0.184
Feb	2.232	0.177	--	--	2.232	--	--	--	--	--	0.173
Mar	2.893	0.032	--	--	2.893	--	--	0.051	--	--	0.259
Apr	3.482	0.016	--	--	3.482	--	--	--	--	--	0.238
May	2.899	0.595	--	--	2.899	--	--	--	--	--	0.143
Jun	1.610	0.248	--	--	1.610	1.106	--	--	--	--	0.190
Sub-total	15.427	1.179	--	--	15.427	1.106	--	0.051	--	--	1.187
July	2.088	0.272	--	--	2.088	6.397	--	--	--	--	0.371
Aug	4.620	0.451	--	--	4.620	4.188	--	--	--	--	0.330
Sep											
Oct											
Nov											
Dec											
Total	22.135	1.902	--	--	22.135	11.691	--	0.051	--	--	1.888
Forecast of Total Quantities of C&D Materials to be Generated from the Contract*											
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse	
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	
320.000	27.000	10.200	41.000	320.000	10.000	420.000	2.000	4.000	0.300	10.000	

- Notes: (1) The performance targets are given in **ER Appendix 8I Clause 14** and the EM&A Manual
 (2) The waste flow table shall also include C&D materials to be imported for use at the Site
 (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and water barrier
 (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³ (**ER Part 8 Clause 8.7.5(d)(ii)**) refers)
 (5) Assume inert C&D materials density and non-inert C&D materials are 1.9 ton/m³ and 1.5 ton/m³

**Appendix P – Environmental Mitigation Implementation Schedule
(EMIS)**

Implementation Schedule for Air Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.2		8 times daily watering of the work site with active dust emitting activities.	^
S3.2	S4.8	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	^
		- Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	^
		- Misting for the dusty material should be carried out before being loaded into the vehicle.	^
		- Any vehicle with an open load carrying area should have properly fitted side and tail boards.	^
		- Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	^
		- The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary, before transportation.	^
		- The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials.	^
		- Vehicle washing facilities should be provided at every vehicle exit point.	^
		- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.	^
		- Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	^*
		- Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.	^
		- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	^

Implementation Schedule for Noise Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.3		Use of quiet PME, movable barriers for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S3.3		Good Site Practice:	
S3.3		- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	^*
		- Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	^
		- Mobile plant, if any, should be sited as far away from NSRs as possible.	^
		- Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.	^
		- Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	^
		- Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	^
		- Scheduling of Construction Works during School Examination Period	N/A

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.4		<u>Construction Runoff</u> Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:	^
S3.4		- use of sediment traps.	^
S3.4		- adequate maintenance of drainage systems to prevent flooding and overflow.	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
	S5.8	- Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins.	^
	S5.8	- Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	^
	S5.8	- Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distance of 100 m should be maintained between the discharge points of construction site run-off and the existing saltwater intakes.	^
	S5.8	- Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	^
	S5.8	- Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	^
	S5.8	- Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	^
	S5.8	- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		sewerage system.	
	S5.8	- Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	^
S3.4		Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^
S3.4	S5.8	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.	^
S3.4		Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		and particularly suited to applications where the influent is pumped.	
S3.4		Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	^
S3.4		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	^
S3.4		Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
S3.4		Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	NA
S3.4	S5.8	<u>Wheel Washing Water</u> All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	^
S3.4		<u>Drainage</u> It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	^
S3.4		All temporary and permanent drainage pipes and culverts provided	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	
S3.4		All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
S3.4	S5.8	<p><u>Sewage Effluent</u></p> <p>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.</p>	^
S3.4		<p><u>Stormwater Discharges</u></p> <p>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes</p>	^
S3.4		<p><u>Debris and Litter</u></p> <p>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised</p>	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		and that disposal of any solid materials, litter or wastes to marine waters does not occur.	
	S5.8	<u>Boring and Drilling Water</u> Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	^
	S5.8	<u>Acid Cleaning, Etching and Pickling Wastewater</u> Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers.	NA
	S5.8	<u>Effluent Discharge</u> There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office (RO) of EPD.	^
	S5.8	<u>Accidental Spillage</u> Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes. Any service shop and maintenance facilities should be located on	^

Implementation Schedule for Water Quality Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	
	S5.8	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: - Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.	^
	S5.8	- Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.	^
	S5.8	- Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.5		<u>Good Site Practices</u> It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:	
S3.5		- Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	^
	S6.7	- Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites.	^
S3.5	S6.7	- Training of site personnel in proper waste management and chemical waste handling procedures.	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.5	S6.7	- Provision of sufficient waste disposal points and regular collection for disposal.	^
S3.5	S6.7	- Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	^
S3.5		- A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	^
	S6.7	- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	^
	S6.7	- Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	^
S3.5		<u>Waste Reduction Measures</u> Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:	
S3.5	S6.7	- Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.	NA
S3.5	S6.7	- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	^
S3.5	S6.7	- Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.	^
S3.5		- Any unused chemicals or those with remaining functional capacity should be recycled.	^
S3.5	S6.7	- Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	^
S3.5		<u>Construction and Demolition Materials</u> Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:	
S3.5		- Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.	
S3.5		- Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	^
S3.5		- Skip hoist for material transport should be totally enclosed by impervious sheeting.	^
S3.5		- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	^
S3.5		- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	^
S3.5		- The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.	^
S3.5		- All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	^
S3.5		- The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	^
S3.5		- When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	^
	S6.7	- Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation	^

Implementation Schedule for Waste Management Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		of waste.	
S3.5		<u>Chemical Waste</u> After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	^
	S6.7	Separation of chemical wastes for special handling and appropriate treatment.	^
S3.5		<u>General Refuse</u> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem.	^

Implementation Schedule for Landscape and Visual Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
S3.8.12		All existing trees should be carefully protected during construction.	^
S3.8.12		Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	NA
S3.8.12		Control of night-time lighting.	^
S3.8.12		Erection of decorative screen hoarding.	^
	S7.9	<u>Construction Site Control</u> - CM1 - Minimized construction area and contractor's temporary works areas.	^
		- CM2- Control of night-time lighting and glare by hooding all lights.	^
		- CM3 - Erection of decorative mesh screens or construction	^

Implementation Schedule for Landscape and Visual Measures			
EIA for KTD Development Ref.	EIA for KTD – Roads D3A & D4A Ref.	Environmental Protection Measures / Mitigation Measures	Status
		hoardings around works areas in visually unobtrusive colours.	
		- CM4 - Reduction of construction period to practical minimum.	^
		- CM5 - Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas.	^
		- CM6 - Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.	NA

Remarks:			
^	Compliance of mitigation measure.	X	Non-compliance of mitigation measure.
N/A	Not Applicable at this stage.	●	Non-compliance but rectified by the contractor.
N/A (1)	Not observed.		
*	Recommendation was made during site audit but improved/rectified by the contractor.	#	Recommendation was made during audit and to be improved/ rectified by the contractor.

Mitigation Measures undertaken by the Contractor for site inspections



Date: 15 August 2024
Mitigation Measures: The stock of more than 20 bags of cement materials on sites were covered.

Date: 15 August 2024
Mitigation Measures: The silt curtains were deployed around the Harbour step.



Date: 22 August 2024
Mitigation Measures: The accumulated waste collection was cleared regularly by workers.

Date: 29 August 2024
Mitigation Measures: Haul road was sprayed with water to maintain the entire road surface wet.

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

Reporting Month: August 2024

Contract No.	Record of Complaint (Yes/No)	Record of Warning (Yes/No)	Notification of Summons and Successful Prosecutions (Yes/No)
ED/2018/01	No	No	No

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

Contract No.	Record of Complaint	Record of Warning	Notification of Summons and Successful Prosecutions
ED/2018/01	17	0	0

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
C0001	A dust complaint was referred from the Contractor on 21 Oct 2020 regarding a public complaint via 1823 hotline (Case no. 3-6518939602) on 20 Oct 2020.	<ol style="list-style-type: none"> The water spraying system was not operated in proper time. Stockpile was not covered properly. Haul road was not wetted. Materials transported on trucks were not provided with mechanical covers. 	<p><u>Investigation</u></p> <ol style="list-style-type: none"> Based on the information provided by the Contractor on 22 Oct 2020, the water sprinklers system was sprayed every 15 minutes with 70 seconds interval automatically. For the area that water sprinklers system was not covered, manual water spraying was provided. Dump trucks were covered with mechanical cover after loading the materials. The stockpile area was covered by the tarpaulin during night time. Based on the monitoring results on 16 Oct 2020, the 1-hour and 24-hour TSP results were below the Action Levels and Limit Levels. Regular site inspection was conducted by ET on 22 Oct 2020, no adverse observation against the dust impact was recorded. <p><u>Action taken</u></p> <p>As per the Contractor, the water sprinkler are now adjusted to start at 8:00am and end at 6:00pm for Monday to Saturday while from 8:00am to 5:00pm on Sunday. Water spraying are set with 5-minute time interval with duration 30-60 seconds.</p> <p><u>Recommendations</u></p> <p>To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:</p> <ol style="list-style-type: none"> Increase the frequency and duration for automatic water spraying system. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. Ensure stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process. 	<ul style="list-style-type: none"> - Closed-out on 5 Nov 2020. - No further complaint was received.
C0002	A dust complaint was referred from the Contractor on 8 Sep 2021 through E-Mail regarding a complaint	Complaint of dust problem at the pavement of Muk Tai Street near Sports	<p><u>Investigation</u></p> <p>As per contractor, part of the complaint area was within the site boundary of the project.</p> <ol style="list-style-type: none"> Manual water spraying was provided. The exposed surface and stockpile areas were covered by the impermeable 	<ul style="list-style-type: none"> - Closed-out on 4 Oct 2021. - No further complaint was received.

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	received by EPD (EPD ref.: K19/RE/00021205-21) on 7 Sep 2021.	Park.	<p>tarpaulin sheet.</p> <p><u>Action taken</u> The exposed surface and stockpile area was covered by the impermeable tarpaulin sheet.</p> <p><u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however the contractor is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Ensure stockpiling sites should be lined with impermeable sheeting and banded. 2. Stockpiles should be fully covered by impermeable sheeting at all time except during working process. 3. Ensure the work fulfill the relevant statutory requirements on control of air pollution. 4. Take necessary measures to minimize the environmental nuisance arising from the construction site. 	
C0003	A water discharge complaint was referred from the Contractor on 10 Dec 2021 through E-Mail regarding a complaint received by EPD (ref.: K19/RE/00029046-21) on 9 Dec 2021.	Complaint of muddy water being discharged into the sea of To Kwa Wan Typhoon Shelter via a DSD outfall near the roundabout of Shing Fung Road.	<p><u>Investigation</u> Joint site inspection was conducted by ER, IEC, ET and the contractor on 14 Dec 2021, no adverse observation against the water impact was recorded.</p> <ol style="list-style-type: none"> 1. There was no muddy water discharge to DSD outfall near the roundabout of Shing Fung Road. 2. The sandbag with layers and filter were provided at the manholes. <p><u>Action taken</u></p> <ul style="list-style-type: none"> - Sandbags and filter were used to block the manholes. - Manholes had been adequately covered and replace the filter frequently. <p><u>Recommendations</u> There was no direct evidence showing that the water nuisance was caused by the contractor at the complaint area.</p>	<ul style="list-style-type: none"> - Closed-out on 5 Jan 2022. - No further complaint was received.

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<p>Some of muddy water generated from wheel washing might be flow to the outfall inside the site boundary, however the contractor had taken the mitigation measure by using sandbag and filter to ease the nuisance. The contractor is recommended to implement the following measures to minimize the impact for waste water:</p> <ol style="list-style-type: none"> 1. Enhance the sandbag with several layers instead of one layer only and replace the filter frequently. 2. Modify the wheel washing area such that the muddy water will be directly flow to the pit and then waste water treatment facility. 3. Take necessary measures to minimize the environmental nuisance arising from the construction site. 	
C0004	<p>A dust complaint was received by EPD on 16 Dec 2022.</p> <p>Contractor received Notification of Environmental Complaints from EPD (ref.: K19/RE/00029136-22) by E-Mail on 22 Dec 2021.</p>	<p>Complaint of mud/ silt being brought out by vehicles from the project site casing mud/silt accumulation on Shing Fung Road.</p>	<p><u>Investigation</u> Regular site inspection was conducted by ET on 29 Dec 2022.</p> <ol style="list-style-type: none"> 1. As per the Contractor, mud / slit generated from nearby construction sites might be brought to Shing Fung Road roundabout. 2. No adverse observation against the dust impact was recorded during site inspection. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Watering manually frequently. 2. Haul Road surfaces were wetted by water truck. 3. Wheel washing for the trucks and vehicles before leaving the project site. <p><u>Recommendations</u> To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:</p> <ol style="list-style-type: none"> 1. Increase the frequency and duration for automatic water spraying system. 2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 3. Regular wash and clean the share haul road and roundabout in Shing Fung Road. 	<p>- Closed-out on 13 Jan 2023.</p> <p>- No further complaint was received.</p>

Complaint Log for ED/2018/01													
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status									
			4. Wheel washing for the trucks and vehicles before leaving the project site. The muddy water after the wheel washing should be directed to sedimentation tank and wastewater treatment facility before discharging to gully. 5. Ensure stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process. 6. Dusty materials transported on truck shall be covered.										
C0005	<p>A noise complaint was received by EPD on 21 Dec 2022.</p> <p>Contractor received Notification of Environmental Complaints from EPD (EPD ref.: K19/RE/00029422-22) on 22 Dec 2022.</p> <p>IEC received the notification on 22 Dec 2022 from EPD and forwarded the notification to CEDD, Contractor, ER and ET on same day.</p>	<p>Complaint of construction noise arising from the project site near Shing Kai Road and Muk Tai Street continued to 01:30 am on 21 Dec 2022.</p>	<p><u>Investigation</u></p> <p>Regular site inspection was conducted by ET and the Contractor on 29 Dec 2022</p> <ol style="list-style-type: none"> The complaint was project-related as construction noise arose from the project site near Shing Kai Road and Muk Tai Street. Status of CNPs in the work area near Shing Kai Road and Muk Tai Street were checked and all of them were valid. However, the CNPs only cover the period up to 2300. <table border="1"> <thead> <tr> <th>Construction Noise Permit</th> <th>Valid Form</th> <th>Valid Till</th> </tr> </thead> <tbody> <tr> <td>GW-RE1297-22</td> <td>10 Dec 2022</td> <td>08 Jun 2023</td> </tr> <tr> <td>GW-RE1299-22</td> <td>17 Dec 2022</td> <td>15 Jun 2023</td> </tr> </tbody> </table> <p><u>Actions taken</u></p> <ol style="list-style-type: none"> Refresher training about CNP was provided to the labour on 22 Dec 2022. No construction activities were allowed in the restricted hours for those areas without valid CNP. <p><u>Recommendations</u></p> <p>To minimize the impact of construction noise, the following mitigation measures are recommended:</p> <ol style="list-style-type: none"> Provide regular training about CNP and other environmental issues to staff. Regularly check the status of ALL CNP and other environmental permits. 	Construction Noise Permit	Valid Form	Valid Till	GW-RE1297-22	10 Dec 2022	08 Jun 2023	GW-RE1299-22	17 Dec 2022	15 Jun 2023	<ul style="list-style-type: none"> - After six months of receiving the complaint, there was no further action from EPD. - Closed-out on 29 Jun 2024.
Construction Noise Permit	Valid Form	Valid Till											
GW-RE1297-22	10 Dec 2022	08 Jun 2023											
GW-RE1299-22	17 Dec 2022	15 Jun 2023											
C0006	<p>A dust complaint was received by EPD on 6</p>	<p>Complaint of construction</p>	<p><u>Investigation</u></p> <p>Site inspections were conducted by ET on 26 Jan 2023 and joint site inspection</p>	<ul style="list-style-type: none"> - Closed-out on 16 Mar 2023. 									

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	<p>Dec 2022.</p> <p>Contractor (POC) received Notification of Environmental Complaints from EPD (ref.: K19/RE/00027862-22) by E-Mail on 7 Dec 2022.</p> <p>IEC received the notification on 19 Jan 2023 and forwarded the notification to CEDD, ER and ET on same day.</p>	<p>dust arising from construction sites along Shing Fung Road.</p>	<p>was conducted by Contractor (POC), ER, ET and IEC on 8 Feb 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (roundabout) is the common road for public vehicles. In addition, construction vehicles from several nearby construction sites also use the concerned road, especially a lots of dump trucks. 2. Construction vehicles from Contractor (POC) project site are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. 3. Worker of sub-contractor from Contractor (POC) wetted the part of the concerned road surface during the site inspection on 8 Feb 2023 to suppress dust emission. 4. No construction works was observed on 26 Jan 2023 and no adverse observation against the dust impact were found during the site inspection on both dates. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 2. Wheel washing for the trucks and vehicles before leaving the project site directly through Shing Fung Road exit. 3. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted manually in regular basis. 2. Regular wash the share haul road and roundabout in Shing Fung Road. 3. Wheel washing for the trucks and vehicles before leaving the project site. The muddy water after the wheel washing should be directed to sedimentation tank and wastewater treatment facility before discharging to 	

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			gully. 4. Dusty materials transported on truck shall be covered.	
C0007	A dust complaint was received by EPD on 19 Jan 2023. Contractor (POC) received Notification of Environmental Complaints from EPD (ref.: K19/RE/00001988-23) by E-Mail on 2 Feb 2023. IEC received the notification on 2 Feb 2023 and forwarded the notification to CEDD, ER and ET on the same day.	Complaint of dusty environment at the new road connecting Shing Fung Road and Shing Kai Road caused by vehicles from construction sites nearby.	<u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 8 Feb 2023. 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. 2. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 4. Worker of sub-contractor from Contractor (POC) wetted the part of the concerned road surface during the site inspection on 8 Feb 2023 to suppress dust emission. 5. No adverse observation against the dust impact were found during the site inspection along the new road. <u>Action taken</u> 1. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 2. Wheel washing for the trucks and vehicles before leaving the project site. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. <u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality: 1. Main haul road and the area that water sprinklers system was not covered in	- Closed-out on 16 Mar 2023.

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<p>the construction site should be wetted by water trucks or manually in regular basis.</p> <ol style="list-style-type: none"> 2. Regular wash the share haul road in Shing Fung Road. 3. Wheel washing for the trucks and vehicles before leaving the project site. The muddy water after the wheel washing should be directed to sedimentation tank and wastewater treatment facility before discharging to gully. 4. Dusty materials transported on truck shall be covered. 	
C0008	<p>A dust complaint was received by EPD on 13 Feb 2023.</p> <p>Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00003909-23) by E-Mail on 17 Feb 2023 and forwarded the E-mail to ER, ET and IEC on same day.</p>	<p>Complaint of silt / mud accumulation on the new road connecting Shing Fung Road and Shing Kai Road caused by vehicles from construction sites nearby.</p>	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 23 Feb 2023 and regular site inspection was conducted by Contractor (POC), ER and ET on 2 Mar 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust nuisance. 2. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 4. As per Contractor (POC), EPD conducted site visit on 16 Feb 2023. 5. No adverse observation against the dust / muddy water impact were found during the site inspection on both dates. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. 2. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 	- Closed-out on 29 Mar 2023.

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
			<p>3. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly.</p> <p>4. Wheel washing for the trucks and vehicles before leaving the project site.</p> <p>5. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> <p>6. During the two site inspections, mitigation measures implemented by the Contractor (POC) were found properly based on existing site condition and resources.</p> <p><u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 2. Regular wash the share haul road in Shing Fung Road. 3. Dusty materials transported on truck shall be covered. 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
Date	Road Washing by													
8 Mar 2023	Sweeper truck with water spraying truck													
9 Mar 2023	Sweeper truck with water spraying truck													
14 Mar 2023	Sweeper truck with water spraying truck													
22 Mar 2023	Sweeper truck with water spraying truck													
C0009	A dust complaint was received by EPD on 15 Feb 2023. Contractor (POC) received the Notification of Environmental	Complaint of mud / silt being brought out by vehicles from construction site at Shing Fung Road roundabout	<p><u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER, ET and IEC on 23 Feb 2023 and regular site inspection was conducted by Contractor (POC), ER and ET on 2 Mar 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust nuisance. 	- Closed-out on 29 Mar 2023.										

Complaint Log for ED/2018/01														
Complain t Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
	Complaints from EPD (ref.: K19/RE/00004280-23) by E-Mail on 22 Feb 2023 and forwarded the E-mail to ER, ET and IEC on same day.	(near Lamp Post DF4831) causing mud / silt accumulation along Shing Fung Road.	<p>2. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023.</p> <p>3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023.</p> <p>4. As per Contractor (POC), EPD conducted site visit on 16 Feb 2023.</p> <p>5. No adverse observation against the dust impact were found during the site inspection on both dates.</p> <p><u>Action taken</u></p> <p>1. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023.</p> <p>2. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023.</p> <p>3. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly.</p> <p>4. Wheel washing for the trucks and vehicles before leaving the project site.</p> <p>5. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> <p>6. During the two site inspections, mitigation measures implemented by the Contractor (POC) were found properly based on existing site condition and resources.</p> <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the</p>	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
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Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<p>contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis. 2. Regular wash the share haul road in Shing Fung Road. 3. Dusty materials transported on truck shall be covered. 	
C0010	<p>A dust and muddy water complaint was received by Hotline 1823 on 9 Mar 2023.</p> <p>ER received the transfer from the Hotline 1823 on 9 Mar 2023 and forwarded the E-mail to Contractor (POC), ET and IEC on same day.</p>	<p>Complaint of dusty environment at the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road roundabout.</p> <p>Worker wetted the road surface and might cause mud / silt problem.</p>	<p><u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER, and ET on 16 Mar 2023 and 23 Mar 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust nuisance. 2. Construction vehicles from POC are not allowed leaving the site to Shing Fung Road directly with barriers blocked since 21 Jan 2023. 3. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 4. The sandbags were provided around the manholes. 5. No adverse observation against the dust / muddy water impact were found during the site inspection on both dates. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Construction vehicles from Contractor (POC) are not allowed leaving the site to Shing Fung Road directly as the exit was blocked by barriers since 21 Jan 2023. 2. Contractor (POC) has restricted the construction vehicles from nearby construction site (Gammon site) using this site entrance for any construction activities since 4 Feb 2023. 3. Haul Road surfaces were wetted manually and washed the dusty water barrier regularly. 4. Wheel washing for the trucks and vehicles before leaving the project site. 	- Closed-out on 6 Apr 2023.

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
			<p>5. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> <p>6. The sandbags were provided around the manholes.</p> <p>7. During the two site inspections, mitigation measures implemented by the Contractor (POC) were found properly based on existing site condition and resources.</p> <p><u>Recommendations</u> There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air and water quality:</p> <ol style="list-style-type: none"> 1. Dusty materials transported on truck shall be covered. 2. Enhance the sandbags with several layers of filters and replace the filter frequently. 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
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14 Mar 2023	Sweeper truck with water spraying truck													
22 Mar 2023	Sweeper truck with water spraying truck													
C0011	A muddy water complaint was received by EPD on 9 Mar 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00004280-23)	Complaint of water being sprayed onto vehicles passing by and mud / silt being washed into roadside gully near Shing Fung Road roundabout.	<p><u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER and ET on 23 Mar 2023.</p> <ol style="list-style-type: none"> 1. The concerned area (new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 Dec 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust / mud / silt nuisance. 2. The sandbags were provided around the manholes. 3. No adverse observation against the muddy water impact were found during the site inspection on both dates. 	- Closed-out on 6 Apr 2023.										

Complaint Log for ED/2018/01														
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status										
	by E-Mail on 22 Feb 2023 and forwarded the E-mail to ER, ET and IEC on same day.		<p><u>Action taken</u></p> <ol style="list-style-type: none"> As per Contractor (POC), no manually road surfaces watering on Shing Fung Road after receiving complaint (16 Mar 2023). As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once a week as follow: <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>8 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>14 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>22 Mar 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> The sandbags were provided around the manholes. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the muddy water nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air and water quality:</p> <ol style="list-style-type: none"> Enhance the sandbags with several layers of filters and replace the filter frequently. 	Date	Road Washing by	8 Mar 2023	Sweeper truck with water spraying truck	9 Mar 2023	Sweeper truck with water spraying truck	14 Mar 2023	Sweeper truck with water spraying truck	22 Mar 2023	Sweeper truck with water spraying truck	
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14 Mar 2023	Sweeper truck with water spraying truck													
22 Mar 2023	Sweeper truck with water spraying truck													
C0012	A dust complaint was received by EPD on 31 May 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00013488-23) by E-Mail on 6 June	Complaint of silt / mud accumulation on the new road connecting Shing Fung Road and Shing Kai Road caused by vehicles from construction site nearby.	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER and ET on 8 June 2023.</p> <ol style="list-style-type: none"> As per Mr. Tony Tang from POC, the concerned area was the section of Shing Fung Road at the entrance of Gammon site accommodation. The new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 December 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust / silt nuisance. As per Mr. Tony Tang from POC, recycled water was used in wheel washing machine near the entrance of Gammon site. Those are the possible sources of mud nuisance. 	- Closed-out on 19 June 2023.										

Complaint Log for ED/2018/01																						
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status																		
	2023 and forwarded the E-mail to ER, ET and IEC on same day.		<p>4. No adverse observation against the dust impact were found during the site inspection.</p> <p><u>Action taken</u></p> <p>1. As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted twice a week start from 11 May 2023.</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Road Washing by</th> </tr> </thead> <tbody> <tr> <td>19 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>23 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>25 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>30 May 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>2 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>6 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>9 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> <tr> <td>13 June 2023</td> <td>Sweeper truck with water spraying truck</td> </tr> </tbody> </table> <p>2. Wheel washing for the vehicles before leaving the construction site.</p> <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> Regular wash the share haul road in Shing Fung Road and Shing Kai Road. Dusty materials transported on truck should be covered. 	Date	Road Washing by	19 May 2023	Sweeper truck with water spraying truck	23 May 2023	Sweeper truck with water spraying truck	25 May 2023	Sweeper truck with water spraying truck	30 May 2023	Sweeper truck with water spraying truck	2 June 2023	Sweeper truck with water spraying truck	6 June 2023	Sweeper truck with water spraying truck	9 June 2023	Sweeper truck with water spraying truck	13 June 2023	Sweeper truck with water spraying truck	
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13 June 2023	Sweeper truck with water spraying truck																					
C0013	A water complaint was received by EPD on 19 June 2023. Contractor (POC) received the Notification of Environmental	- Complaint of muddy water being discharged into Kai Tak Approach Channel on 18 Jun	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER and ET on 6 Jul 2023.</p> <ol style="list-style-type: none"> As per Mr. Tony Tang from POC, the concerned area was the section of Shing Fung Road at the nearby channel. Heavy raining was recorded on 18 Jun 2023. The recorded rainfall was 35.8mm (sourced from manned weather station of Hong Kong Observatory at https://www.hko.gov.hk/en/cis/dailyExtract.htm?y=2023&m=6). The 	- Closed-out on 2 Aug 2023.																		

Complaint Log for ED/2018/01				
Complain t Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
	Complaints from EPD (ref.: K19/RE/00014944-23) by E-Mail on 29 June 2023 and forwarded the E-mail to ER, ET and IEC on 4 July 2023.	2023. - Complaint of construction work being conducted on the Sunday of 18 Jun 2023.	<p>implication of heavy rainfall storm runoff might wash across the exposed soil surfaces which was direct muddy water discharge. This is the possible source of water nuisance.</p> <p>3. As per Mr. Tony Tang from POC, no construction work was conducted on 18 Jun 2023. Based on the attendance record, 6 employees including 4 watchman, labourer and driver, were on site on 18 Jun 2023 and they were not involved in the construction work. In the joint site inspection, no construction work was conducted on the nearby channel.</p> <p>4. No adverse observation against the muddy water impact were found during the site inspection on 14 and 20 June 2023, and 6 July 2023. The sedimentation tank and wastewater treatment plant are operating efficiently during the site inspection.</p> <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. The ditch is maintained regularly and excavated deeper by workers. 2. Pumps are placed at the ditch to prevent flooding and overflow. 3. Enhanced training for site workers to prevent flushing during heavy rain by placing pumps in the ditch to prevent flooding and overflow during periods of heavy rain during Tool- Box-Talk training. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the muddy water nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for water quality:</p> <ol style="list-style-type: none"> 1. Regular cleaning and maintenance drainage systems at the nearby Kai Tak Approach Channel. 	

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
C0014	A polluting discharge complaint was received by EPD on 16 October 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00024581-23) by E-Mail on 19 October 2023 and forwarded the E-mail to ER, ET and IEC on 21 October 2023.	- Complaint of polluting discharge from the construction site of Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City (“illegal discharge from kai tak 6577 construction site the main contractor should be hip hing)	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER and ET on 26 October 2023.</p> <ol style="list-style-type: none"> 1. The concerned area is near at Former Runway and South Apron, Kowloon City. Those are the possible sources should be illegal discharge from Kai Tak 6577 construction site which the main contractor should be hip hing. The possible source of polluting discharge does not come from the Contractor (POC). 2. No adverse observation against the muddy water impact were found during the site inspection on dates. No surface runoff is observed, and the sedimentation tank and wastewater treatment plant were implemented normally. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. As per Contractor (POC), no wastewater generated at concerned area and ensure fulfil the conditions stipulated in the valid WPCO licence after receiving complaint (16 October 2023). The effluent discharge has been implemented properly. 2. The silt curtain has been installed around the construction activities at the concerned area. (referring to Photo 2) The sedimentation tank and wastewater treatment has been implemented properly. 3. The pump has been installed and collected sewage at the channel which can minimize water quality impacts and prevent overload the foul sewage system. (referring to Photo 3) The channel and ditches have been clear after receiving complaint. <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the muddy water nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for water quality:</p>	- Closed-out on 15 November 2023.

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<ol style="list-style-type: none"> 1. The silt removal facilities, channels and manholes should be maintained regularly. 2. The silt curtain and equipment should be properly maintained. 	

Complaint Log for ED/2018/01					
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations		Close-Out Date / Status
C0015	A dust complaint was received by EPD on 12 December 2023. Contractor (POC) received the Notification of Environmental Complaints from EPD (ref.: K19/RE/00030287-23) by E-Mail on 19 December 2023 and forwarded the E-mail to ER, ET and IEC on 20 December 2023.	- Complaint of construction dust nuisance on Shing Fung Road.	<u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER, and ET on 21 December 2023. <ol style="list-style-type: none"> As per the email clarified by Mr. Tony Tang from POC on 20 December 2023, the concerned area (section of Shing Fung Road) was the junction of Road D3 and gate 2A& 2B. The new road connecting Shing Fung Road & Shing Kai Road) has been open for public vehicles (not only project related vehicles) since 31 December 2022. Vehicles from nearby construction sites also used the concerned road. Those are the possible sources of dust / silt nuisance. The non-project of stockpiles is founded near the concerned road during the site inspection. 3. As per Mr. Tony Tang from POC, recycled water was used in wheel washing machine near the entrance of Gammon site. The washing facilities and regular road watering are implemented. No adverse observation against the dust impact were found during the site inspection. The washing facilities and dust control measures are implemented properly. <u>Action taken</u> <ol style="list-style-type: none"> As per instruction from CEDD and AECOM, road washing along the new road (connecting Shing Fung Road and Shing Kai Road) and Shing Fung Road by water truck was conducted once per week in December 2023. 		- 17 January 2024
			Date	Road Washing by	

Complaint Log for ED/2018/01					
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations		Close-Out Date / Status
			07 December 2023	Sweeper truck with water spraying truck	
			16 December 2023	Sweeper truck with water spraying truck	
			21 December 2023	Sweeper truck with water spraying truck	
			29 December 2023	Sweeper truck with water spraying truck	
			<p>2. Wheel washing for the vehicles before leaving the construction site.</p> <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p> <ol style="list-style-type: none"> 1. Regular wash the share haul road in Shing Fung Road and Shing Kai Road. 2. Dusty materials transported on truck should be covered. 		

Complaint Log for ED/2018/01																											
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations				Close-Out Date / Status																				
C0016	A dust complaint was received by Hotline 1823 on 20 May 2024. ER (AECOM) and Contractor (POC) received the transferred from Hotline 1823 (Case No. 3-8226038234) on 20 May 2024 and forwarded the E-mail to ET, and IEC on same day.	- The dust emission generated from a excavator near EVA No. 10 which affecting the surrounding residents. The complainant also expressed doubt the effectiveness of implementation of environmental management system.	<u>Investigation</u> Joint site inspection was conducted by Contractor (POC), ER, and ET on 23 May 2024. <ol style="list-style-type: none"> The complaint is not directly project-related since C&D stockpiling works from nearby construction sites. (locations referring to Attachment 2) Those are the possible sources of dust nuisance. As per the email reply by Mr. Tony Tang from POC on 21 May 2024, the concerned area (section of Shing Fung Road) was near EVA No. 10. The POC proposed to implement measures for mitigate the dust nuisance. The nearest surrounding resident to the concerned area is 580.23m (locations referring to Attachment 1) As per Mr. Tony Tang from POC, POC will provide a worker starting from 22 May 2024 to spray water at the concerned location (Near EVA No. 10) within office hour to suppress dust emission no matter there is any loading or unloading of dusty materials site activities. (locations referring to Attachment 3) Based on the monitoring results on 20 May 2024, 1-hour and 24-hour TSP results were below the Action Levels and Limit as shown as below. <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">AM3</th> <th colspan="2">AM4(A)</th> <th colspan="2">AM7</th> </tr> <tr> <th>1-hour TSP</th> <th>24-hour TSP</th> <th>1-hour TSP</th> <th>24-hour TSP</th> <th>1-hour TSP</th> <th>24-hour TSP</th> </tr> </thead> <tbody> <tr> <td>Measured result (µg/m³)</td> <td>44 -48</td> <td>42</td> <td>56-63</td> <td>/</td> <td>53 – 57</td> <td>54</td> </tr> </tbody> </table>					AM3		AM4(A)		AM7		1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP	Measured result (µg/m ³)	44 -48	42	56-63	/	53 – 57	54	- Closed-out on 04 June 2024
	AM3		AM4(A)		AM7																						
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP																					
Measured result (µg/m ³)	44 -48	42	56-63	/	53 – 57	54																					

Complaint Log for ED/2018/01											
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations							Close-Out Date / Status	
			Action Level (µg/m ³)	297	182	326	187	315	181		
			Limit Level (µg/m ³)	500	260	500	260	500	260		
			<p>6. The effectiveness of the environmental management system implemented has been reviewed.</p> <p>7. No adverse observation against the dust impact were found during the site inspection. The dust control measures are implemented properly. (referring to Attachment 4)</p> <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Regularly monitor all the Powered Mechanical Equipment (PME) to ensure no dark smoke emission. (refer to Attachment 3). 2. Arrange to cover the stockpile with tarpaulin sheet to prevent dust emission. (refer to Attachment 3) 3. Arrange resources to spray water during excavator loading and unloading of dusty material which have including fill material and sub-base. (refer to Attachment 3) <p><u>Recommendations</u></p> <p>There was no direct evidence showing that the dust nuisance was caused by the contractor at the complaint area, however Contractor (POC) is recommended to implement the following measures to minimize the impact for air quality:</p>								

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			<ol style="list-style-type: none"> 1. The share haul road in Shing Fung Road should be washed regularly. 2. Dust mitigation control should be done at the work site 8 times per day. 3. Stockpiling sites should be lined with impermeable sheeting and bunded. 4. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. 	

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
C0017	A waste management complaint was received by Hotline 1823 on 25 May 2024. The public complaint is received via 1823 (Case No.: 3-8234938050) on 25 May 2024 and forwarded by CEDD on 27 May 2024, and forwarded to ER, Contractor, ET and IEC.	- Rodent problem at the junction of Shing Kai Road & Shing Fung Road	<p><u>Investigation</u></p> <p>Joint site inspection was conducted by Contractor (POC), ER, IEC and ET on 30 May 2024.</p> <ol style="list-style-type: none"> 1. Accumulation of waste was found in the concerned area, the grade road (Shing Kai Road to NSR) and the junction of Road D3 (Shing Kai Road Junction). (refer to Photo Record 7 of Attachment 3) 2. No trace of rats was found during inspection but flies were present. (refer to Photo Record 6 of Attachment 3) 3. Waste management measures were not implemented properly. There were no sufficient waste disposal points and regular dispose of waste at the concerned area (refer to Photo Record 8 of Attachment 3). 4. The complaint was project-related as improper disposal of waste could lead to occurrence of rats. <p><u>Action taken</u></p> <ol style="list-style-type: none"> 1. Poisonous rat bait was placed within the site boundary (refer to Photo Record 2,3,4 of Attachment 3). 2. Workers received regular briefing about proper waste management (refer to Photo Record 5 of Attachment 3). 3. The general waste was collected and removed after site inspection on 30 May 2024. (refer to Photo Record 9 and 10 of Attachment 3). <p><u>Recommendations</u></p> <p>There was related evidence showing that the waste nuisance at the concerned area was caused by the Contractor (POC). However, it is recommended to</p>	- Closed-out on 04 June 2024

Complaint Log for ED/2018/01				
Complaint Ref. No.	Date of Complaint	Description of Complaint	Investigation / Actions taken / Recommendations	Close-Out Date / Status
			implement the following measures to minimize the impact of waste accumulation <ol style="list-style-type: none"> 1. Multiple waste disposal points should be set up for proper waste storage. 2. Frequency of waste cleaning and collection should be increased to prevent waste accumulation. 3. Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle. 	